GARDENING

GARDENING

Illustrated. For Town & Country.

A Weekly Journal for Amateurs and Gardeners.

FOUNDED BY W. ROBINSON, F.L.S.,

Author of "The Parks and Gardens of Paris," "The Wild Garden," "Hardy Flowers," "Alpine Flowers," &c.

"YOU SEE, SWEET MAID, WE MARRY
A GENTLE SCION TO THE WILDEST STOCK;
AND MAKE CONCEIVE A BARK OF BASER KIND
BY BUD OF NOBLER RACE: THIS IS AN ART
WHICH DOES MEND NATURE; CHANGE IT RATHER: BUT
THE ART ITSELF IS NATURE."

—*Shakespeare.*

"CALL THE VALES AND BID THEM HITHER CAST
THEIR BELLS AND FLOWERETS OF A THOUSAND HUES.

——*Milton.*

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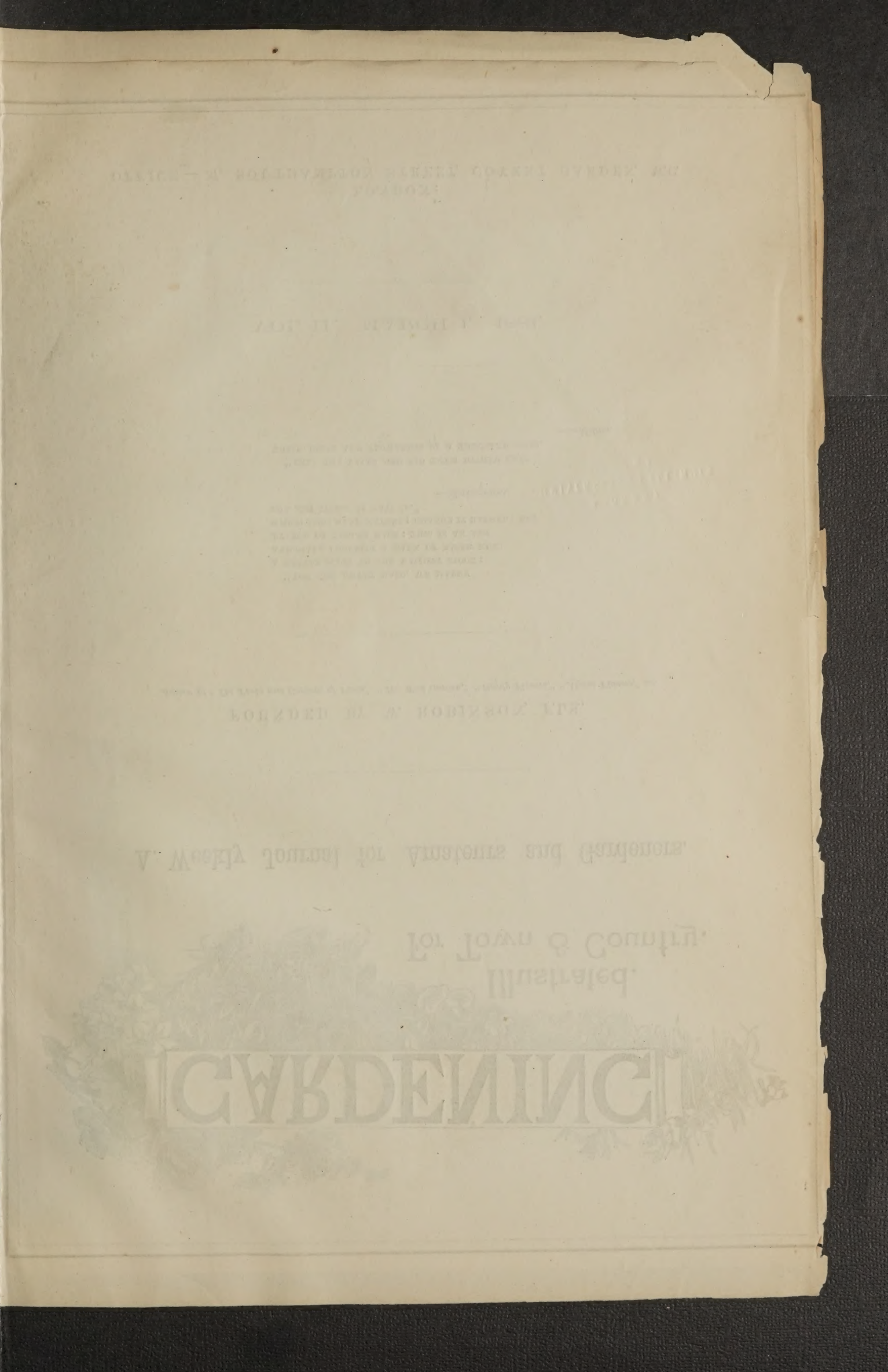
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GARDENING ILLUSTRATED.

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EVENING PRIMROSES.

THESE are amongst the most showy and healthy of late summer blooming plants, and surely about the easiest grown. From June onwards they are in their glory, but many species and varieties in late summer, from increased growth, of necessity become more glorious. Amongst them we have tall-growing sorts like Œnothera Lamarckiana and fragrans, and decumbent carpets, as in trichocalyx and cæspitosa; white flowers, as in the last named two, coronopifolia and speciosa, often changing with age to pink or rose; and few plants have more brilliant yellow blooms than those of missouriensis and Lamarckiana, besides, they are so big—4 in. to 6 in. across. Nearly all are more or less fragrant, fragrans, cæspitosa, marginata, and eximia being particularly odoriferous. As a truly hardy and neat perennial, fruticosa var. linearis is one of the best, its little bright yellow flowers being profusely borne all summer, but most lavishly in June and July. All are not equally fond of the night, as their name might suggest, for many species are open by day, as, for instance, Œ. linearis, speciosa, taraxacifolia, and trichocalyx. Many of our finest evening Primroses are natives of west of the Mississippi States, as California, Utah, Missouri, and Texas, and, consequently, several are not quite hardy here. It is advisable to winter the more tender sorts—biennials or perennials—in frames, and where practicable save seeds and raise seedlings annually. They all bloom the first season from early seedlings. Some of the true perennials, and particularly the prostrate-growing ones, are shy seeding, but the tall growers seed freely. Evening Primroses will grow in any good soil, the richer and deeper the better. Even in window boxes some of the dwarf varieties might be grown with excellent results. The annexed illustration, which is one prepared for the new edition of the "Wild Garden," is an attempt to show the right effect of a colony of the large evening Primrose naturalised on the margin of a wood. These noble and delicately-scented flowers are very easily grown and very beautiful in any position. They, however, from their height and boldness, and the freedom with which they grow in almost any soil, are peculiarly suited for the wild garden, for shrubberies, copses, and the like, sowing themselves freely. In this case they are apt to become eventually somewhat too numerous and somewhat "starved," so that where confined to large groups in good ground they are best. In any flower garden not confined to flat beds only, a small isolated bed of these Œnotheras looks well. Such may be seen in the Emperor of Austria's garden at Laxenburg—this being a favourite flower there. It tells very well in the evenings in these beds—4 ft. wide—on the turf, near the margin of a shrubbery, or near groups of specimens on the Grass.

The large Evening Primrose (Œnothera Lamarckiana), in flower at night.

DECIDUOUS WALL PLANTS.

THE deciduous section of hardy climbers furnishes us with a better and more varied list of suitable subjects than the evergreen section. The Clematis almost deserves to be named first. All the varieties mostly, and they are now numerous, thrive in almost any soil and in the most exposed situations, both in England and Scotland. For covering high or low walls or fences, or for draping trees and similar purposes, they are unequalled; they grow rapidly, and flower early and profusely. C. Jackmanni, one of the first raised of the new race of hybrids, is still one of the best for general planting. It flowers most profusely, as most of the varieties do, good plants being generally covered with masses of rich purple flowers of large size. The size of the flowers is, however, much influenced by culture, frequently measuring 5 in. or 6 in. across when the plants are grown in a good soil. When the Clematis is grown against a wall it may soon be made to reach the top, and spread out laterally as well, so as to cover a large amount of space if the quick-growing and rambling shoots be carefully trained, for they soon run into an inextricable bundle if not watched and nailed as they grow. After the plants have covered the space allotted to them they need less training, but should be pruned in closely every winter. Young plants should also be cut well down for the first year or two, in order to induce strong growths and good flowers. An ordinarily good garden soil, well manured, suits admirably, but fresh manures must not be placed close to the roots. When planted to cover rooteries, trees, or fences, the great point is to give the plants a good start by planting them in rich soil; but after they get up they are almost better left to themselves to grow as they please. In such situations slugs are sometimes very troublesome, as they eat the young buds as fast as they grow; and we are not sure that field

mice do not also eat them. The only preventive is watching and trapping till the young shoots get woody and strong, and they should not be cut down too near the ground when pruned. The list of varieties is a long one, and new ones are being added to it; but among the best may be named: C. Jackmanni, purple; lanuginosa, light blue; rubella, claret; Fortunei, white; Lawsoniana, reddish purple; Mrs. James Bateman, lavender; rubro-violacea, maroon; Lord Londesborough, rich mauve with dark stripes; Otto Frœbel, blue and white; Miss Bateman, white; Lady Caroline Nevill, bluish-white; Henryi, cream colour; Star of India, violet-purple; Vesta, an early-blooming white variety, with fine large flowers.

The Virginian Creeper (Ampelopsis Veitchi or A. tricuspidata), is a beautiful wall climber, which, though introduced a dozen years ago, is still but imperfectly known. It is one of the neatest and most attractive of wall plants, is perfectly hardy, and grows fast. A plant of put out against a wall two or three years ago is now some 20 ft. high, and is the admiration of everyone who sees it. A few others, planted only two years ago out of 3-in. pots, are now near the top of a 12-ft. wall. It is the neat habit of the plant, and the fresh green foliage which changes to dark chocolate in autumn, and later to bright crimson, that render it so attractive. In habit we can only compare it to the neatest growing of the Ivies. The shoots adhere to the wall so closely, by means of their little tendrils with holdfast-like appendages, that a pin-point can hardly be inserted between the wall and the leaves, which are placed alternately, and so closely as almost to overlap each other. The warmer and sunnier the exposure, the better coloured will the foliage be; but the plant itself thrives famously in open situations against trees, and soon clothes their stems with a verdure of changing hue. It succeeds best in a good rich light soil; and after it has once laid hold of the wall it wants no further attention in the way of training or nailing.

The common Virginian Creeper (Ampelopsis hederacea) is well known as one of our best climbers, and is particularly valuable for covering arbours and fences, owing to its rapid growth and abundance of fine foliage, which also changes to crimson in autumn, though it does not approach A. Veitchi in that respect. It is, however, so accommodating in its habit, that it can be trained in almost any fashion, the long supple shoots bending and twisting easily in any direction. It succeeds in any common soil. Aristolochia sipho is a quick-growing plant, and its ample leaves render it particularly useful for covering arbours, summer-houses, and similar structures. It is a native of North America, and is very hardy, growing fast in exposed situations even in the north, where we have seen it employed for covering trellised work in the open grounds. It prefers a light, well-drained soil, and the shoots should be tied in as they grow, to prevent them getting into confusion. With the Wistaria we are all familiar, and as a handsome flowering wall plant it is unequalled. There are two or three varieties of it, but the blue and white are the best; and of these two the blue is the most vigorous grower and freest flowerer. One plant, if placed in a tolerably warm situation against a wall, may be trained so as to cover an enormous amount of space in a short time. There is a plant at Archerfield, in East Lothian, which, if we remember rightly, runs nearly the length of the garden wall, some 150 ft. or 200 ft., if not more. It needs a well-drained site, a good soil, and plenty of root-room, and it will grow freely on any aspect except the north. It is not a confused grower like the Clematis, but requires to be trained carefully as it grows, in order to cover the wall quickly and uniformly. The shoots may be bent in any direction.

There are in gardens about ten or a dozen varieties of Honeysuckle in cultivation, but the best are what are called the common white and the red, viz., Lonicera Shepherdi, fragrantissima, scarlet Trumpet, and the now well-known L. aureo-reticulata, or variegated-leaved variety. For general planting, the common native Honeysuckle is the best. In the shade the flowers are more delicately coloured and pretty, but in exposed situations they are more fragrant. The Honeysuckle needs little attention; indeed, it flowers best when left quite undisturbed, and as for training, the less it is meddled with the better, after it has covered the objects it was planted to hide. It is an excellent subject for archways and bowers, and it may be trained so as to drape the branches of trees in a very ornamental manner. Indeed, it usually makes itself at home amongst the branches without any assistance in the way of training, and it seems particularly partial to the Hazel, which it coils itself round in the most regular manner, embracing it so tightly that it checks the circulation of the sap, and the bark consequently swells out and over the stem of the Honeysuckle, as it does over a ligature, the result being a spirally-fluted rod, much sought after by the woodman for making walking-sticks. Among other miscellaneous subjects suitable for our purposes may be named different varieties of the Rose, notably Gloire de Dijon, the Ayrshire, Banksian, and Boursault Roses; the hardier Grape Vines; and Bignonia radicans. Among herbaceous and annual climbers the following will be found exceedingly ornamental and of easy culture: Calystegia pubescens, Convolvulus, Tropæolum speciosum and canariense, Nasturtiums of the Tom Thumb and Lobbianum class, and the usual seedling varieties, Scarlet Runners, and Sweet Peas—all of which may be employed with success and good effect to cover rustic fences or rooteries.

Unsightly Hedges.—Gardens are oftentimes bounded by hedges which, owing to neglect at some period of their existence, have become unsightly and naked at the base. In such a case the best plan would undoubtedly be to grub them up and plant afresh. Owners or tenants are, however, often loth to do this, owing to the expense and the time which must elapse before the plants attain the height necessary to insure shelter and protection against intruders. If the following instructions are carried out, there will be no need to disturb any portion of the existing fence, and in the course of two or three seasons a beautiful ever-verdant, impenetrable screen will be formed. Take out the soil on one side of the hedge about 2 ft. in depth, and then, having procured a quantity of long Ivy shoots, lay them in to the depth of the trench, with the points turned in towards the hedge. Fill in with good soil, or mix some manure with the old. Tread firmly, and if the weather should be dry, give a good soaking of water. September is the best time for planting, but it may be carried out now. The first year but little growth will be made, but the second season, having fairly laid hold of the good soil, long strong shoots will be made, which will have to be trained in the desired direction. Eventually the Ivy will quite fill up all thin places and unsightly gaps and become an evergreen wall. If the top shoots of the Quick are allowed to grow freely every year, the latter will not perish, but will sustain the Ivy for any length of time.—J. C., *Byfleet.*

Hardy Passion-flowers.—In the garden of the late W. Wilson Saunders, at Worthing, the three following Passion-flowers grew and flowered freely: Passiflora cœrulea, glaucophylla, and incarnata. They all grew facing south, and had no protection during the winter. The first-mentioned was trained against a trellis-work screen, and flowered as freely on the north side of it as on the south. In sheltered spots in Worthing the P. cœrulea is profusely covered with both flowers and fruit. These three species are decidedly perennial.—S. S.

WALL ROSES.

There are not many positions in which Roses are grown where they are more effective than against walls when they are well managed. The protection also thus afforded to the Tea-scented varieties is likewise very favourable to their being so grown. Nevertheless, judging from the condition in which they are often seen, Roses are frequently the least inviting of all wall plants. This arises from several causes, which may be enumerated as follows:—First, the selection of unsuitable kinds; second, after a few years the soil in which they are first planted becomes exhausted, and sufficient means are not taken to enrich it; another is unskilful training, which in the case of strong-growing sorts permits the lower portion of the wall, if a high one, to become bare of young flower-producing shoots. The prevalent reason, however, of such an unsatisfactory condition of wall-trained Roses is the difficulty of keeping insects in check. Roses more than the majority of plants are very susceptible to the attacks of insects when trained to a wall—pests to which they are more particularly subject, viz., aphides, red spider, and the rose-maggot. The difficulty in having the plants free from the worst of these pests is greater under these circumstances on account of the walls offering an obstacle to the application of any kind of liquid for their destruction excepting clean water, as most of the insecticides used in a liquid state, including Tobacco-water, leave an objectionable appearance on the walls unless washed off with clean water before it is allowed to become dry, in which case whatever is employed to destroy the insects is also washed off the plants before it has effected the desired object. Since, however, paraffin in a very diluted state is proved to be such an effectual insecticide without injuring the plants, and at the same time is cheap, and also does not leave traces on the wall, it answers the purpose well, and thereby the worst drawback connected with the culture of wall-trained Roses is overcome. Within the last year or two I have regularly applied it against a light-coloured wall, where anything that left a mark could not have been used. Prevention is always better than cure, and as soon as the Roses are pruned and nailed or tied to the trellises, they should have a good washing by either syringe or garden engine with paraffin-water, for, although it may be supposed that severe frosts destroy the eggs of aphides, yet that is not the case. One recommendation which Roses against walls possess is that, except in the most unfavourable parts of the country, they thrive better on east, or even northern aspects, than they do on the southern, which is no small advantage, for on a northern aspect there are few other plants that will flower successfully. As to the sorts suitable for walls, much depends upon the height and space to be covered. Any of the strongest and free-growing Hybrid Perpetual varieties may be grown, as well as the more commonly planted Tea-scented kinds; but there is much to be said in favour of the latter, such as their more continuous habit of flowering and their handsomer, better foliage, besides the fact that

when well managed they succeed better against a wall than in the open, which is just the reverse in respect to the Hybrid Perpetual kinds. Many a gloomy-looking and unsightly north wall, instead of being an eyesore, might be made attractive if clothed with well-selected Roses and carefully attended to. But for this purpose, more than in any other position, it is requisite that the plants be either on their own roots or grafted very low, for unless young shoots are produced annually from the base, the essential point to a well-furnished wall is absent. Whatever yet remains to be done with regard to planting Roses should be completed with as little delay as possible. T. Baines.

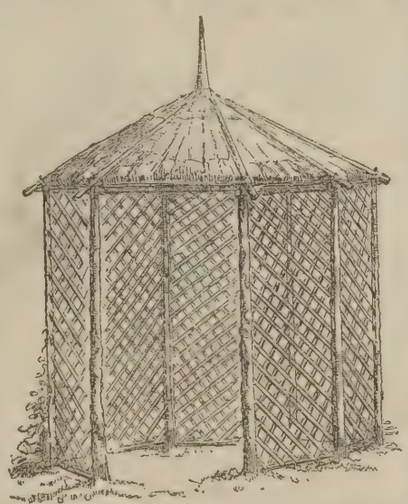
The Best Method of Catching Snails, Slugs, &c.—Having a large, old-fashioned garden, with Ivy-covered walls, sad havoc was for several years made by these pests. I tried Cabbage and Lettuce leaves, pieces of Carrots, Turnips, Potatoes, Apples, Pears, Cucumber, and Bran, but without real success. One day I found a piece of Orange-peel with nine slugs comfortably inside it. This was a discovery. Afterwards I set my trap with it as follows: making a small hole in the ground a little larger than the Orange-peel, putting the pith side downward, then laid over lightly a piece of old wood, if damp all the better, and going my round before the sun was on frequently finding sixty or seventy in one trap, thus getting rid of thousands.—Robin Hood.

Impressions of Leaves.—These may be obtained in the following manner:—Get a small quantity of printers' ink (coloured if possible); make a little ball or pad of cotton, and cover it with a piece of waste silk; dip this into the ink and daub it for a while on a flat surface, such as a piece of slate, till the ink is level all over it; now pat it gently over the entire leaf-surface, next place the leaf on the page of your scrap-book; over it lay a sheet of paper, and rub gently with the point of the fingers, taking care not to shift the leaf in the process, and a very fair impression will be the result. Another plan to obtain an effective picture with Ferns and leaves, and one more suitable for a scrap-album, is to arrange the Fern fronds and leaves on the desired page as tastefully as possible, leaving ample space between. All around the page place waste sheets of paper, and get some permanent-coloured ink—say violet or brown—a tooth-brush, and a knife. Dip the tooth-brush in the ink, and hold it above the page you have arranged, draw the edge of the knife-blade smartly from point to hilt of the brush along the top of the hairs. The result will be a whole shower of minute ink dots. This process is called sparkling. You continue moving your brush, so that the dots may fall just where you want them till your page is quite darkened at the base of your bouquet, taking care, however, to lighten your sparkling outward towards the tips, and causing it gradually to disappear a little beyond them. Some practice is necessary to thorough success, but the result is well worth the trouble.—R. F.

—— I submit the following as a very good way to take impressions of leaves, Fern fronds, &c., always bearing in mind that open leaves are the best to produce a good effect:—Get some cream-laid paper, well oil it, and lay it aside for a few hours, then hold over the flame of a benzoline spirit lamp or common tallow candle until it receives a tolerably thick coating of soot; lay the leaf upon this, and cover over with a piece of paper, and rub the fingers over it. This done, take the leaf and lay it carefully on your album paper; cover over as before, and rub rather more firmly over every part; but do not use too much pressure, or you will damage the leaf. Take care while rubbing that you do not shift the leaf, or you will not get a good impression. Paper with a glossy surface is better than any other kind. I have taken some excellent specimens in the above manner.—Printer.

Guano is an excellent manure for Raspberries applied to the surface with a little vegetable soil, or as an assistant to a light dressing of stable manure, and if there is a deficiency of the latter a little good guano will be an excellent substitute; but in the purchasing of this it is necessary to be careful, remembering that there is no such thing as a cheap article under the name. When it is offered below the current price, either wholesale or retail, the chances are that it is not worth as many pence as you are charged shillings. There is one thing to be observed respecting this manure. If, after trying a sample, it is found good, there need be no hesitation in purchasing a supply that will last for years, for, if kept in a moderately dry shed, it will be just as good in every way at the end of a dozen years as on the day it was imported. We have had it much longer than this, and could not detect the slightest diminution in its strength.

Building a Summer-house.—I have built a very pretty rustic summer-house in this way: Mark out an octagon, each side 4 ft. long; plant at each corner a rough straight pole 4 in. thick and 9 ft. long. Char or double tar 3 ft. of the thickest end and put 2 ft. in the ground. Level the tops, and connect them all round with crosspieces of similar timber, a few inches of each end sticking out. Take another piece 3 ft. long and saw one end to a point; from it, as a centre, nail all round it, like spokes in a wheel, eight straight clothes-props slanting down at an angle of 40.° Put this on the top of the upright poles, and nail each loose prop end to the top of a pole, letting 6 in. or 12 in. extend beyond. This makes the roof. Now fill up with rustic lattice-work (1 in. or 2 in. thick) eight of the sides, leaving one for the entrance: then lattice the roof, or, better still, thatch it. Use strong French nails and the gimlet when



A Home-made Summer-house.

necessary. Fix the crosspieces into the tops of the poles by boring with a centre-bit through the whole, and hammer in an iron peg, 6 in. long. Leave the bark on the wood, which may be sized and varnished. Use throughout the hardest wood possible; Oak or Beech for the poles, and Beech or Hazel for the lattice. Plant a good climber, for instance, scented Clematis, C. Jackmanni, Wistaria, Ampelopsis, Veitchi, scented Jasmine, Honeysuckle, climbing Rose, against each pole; well fill the outside borders with hardy Ferns. In two years you have a floral paradise. My house cost me under £1 without the thatch, but I did all the work myself.—W. L.

Some Good Hardy Plants and Fruits.—At p. 755 of Gardening Illustrated, a mistake has evidently crept in with regard to Apples which may tend to mislead some of your readers. It says, "I am now referring to standards worked on the Quince stock," which should have been the Paradise stock, which is the proper stock to work Apples on, more particularly when they are intended to be grown as pyramids or cordons. But for standards, the Crab stock, or some good free stocks raised from Apple-pips, are far more preferable than the Paradise for this purpose. One or two most excellent kinds might be added to those named in the article above referred to, such as Ecklinville Seedling (or Prizetaker), Grenadier, New Hawthornden, London Pippin, Magnum Bonum, Nelson's Glory, Rymer, Tom Putt, and Warner's King. These are all first-class Apples, good-keeping kinds, constant bearers, and very prolific.—H. R. I.

Cleaning and Colouring Garden Walls.—An important item as regards successful wall tree culture is keeping the walls in good condition by timely attention to stopping and pointing, or filling up the joints both in the brickwork and coping, so that the walls may be kept quite dry, as, in addition to the preservation of the wall, a dry surface will be many degrees warmer than a wet one. For this reason the coping-stones or tiles should have all the joints or openings made good annually with cement. The face of the wall should also be made smooth and even, for holes and fissures offer secure winter quarters for vermin of all kinds, from fly that prey on the tender juices of the leaves, to the earwigs, slugs, and snails that devour the fruit. The winter season is that most suitable for improving walls. The trees should be entirely freed from them, and tied in bundles for safety from breakage or rubbing off of the buds, after which the bricklayer may stop the joints, and then coat the whole surface with thick lime-wash; or if the white appearance is objectionable, a portion of cement or soot may be added. If this be repeated a second time the very worst old nail-battered wall will present a smooth clean even surface and the trees may be re-fastened in whatever way the cultivator may prefer with every prospect of being benefited by the operation; for Moss-grown walls, in addition to looking unsightly and hastening decay, are cold and damp compared with walls treated in the manner just described. The operation is simple and inexpensive, and is one of those minor matters that make all the difference between good and bad wall tree culture. There are many fruits that can be grown better on open walls than under glass; therefore we must not dispense with walls; indeed, for the production of early vegetables and salads we must always have walled gardens, and in order to make the most of the walls we must keep them clean, dry, and free from holes.—J. G. L.

Gooseberry Caterpillars.—In Gardening for Feb. 7 "H. S. C." says that there is no remedy for Gooseberry caterpillar but laborious hand-picking. I beg to differ from this statement. Let him try the following plan:—When the leaves begin to appear take a garden-syringe, go round each tree, syringe the fork and the stems of the branches. Into the whole of the wetted parts immediately throw soot so thickly as to cover the stems and branches so wetted. In ordinary seasons on trees thus treated not a caterpillar could be found. If heavy rain washes the soot off, repeat the process. If the trees do not stand on one leg, every part touching the ground must be so treated. I learned the soot treatment a good many years ago, and have never once partially failed until last year, when the incessant rains proved too much for me in a few bushy trees.—W. B. Thomas.

Celery a Cure for Rheumatism.—The Celery should be cut into bits, boiled in water until soft, and the water drank by the patient. Put new milk with a little flour and nutmeg into the saucepan with the boiled Celery, serve it with bread toasted, and eat it with Potatoes, and the painful ailment will soon yield. It will not suffice to try it a time or two, but it must be continued. Having proved this receipt, I can confidently recommend it to others.—J. J.

Extra fine Varieties of Flowers.—I entirely endorse the opinion given under this head by "F. C." in Gardening, February 7. I and many of my friends have often been deterred from growing a few pots of choicest flowers owing to the fact that the lowest priced packet of seed say of really good Primulas is 2s. 6d. To persons requiring a very small show of these and other most desirable flowers, of which one dozen would be sufficient, the price seems too high. A packet of seed at that price would probably produce—the seed being good and the cultivation correct—several dozen plants, the majority of which would have to be wasted for lack of accommodation. I am quite of the same opinion as "F. C.," viz., that if the best seedsmen would sell quite small packets of the best seeds, equal in every respect to those in the large and higher priced packets, the number of their customers would be very much augmented, and a much wider field of interest opened out to small amateur gardeners, who know how to appreciate

"little and good," and have generally much more real love for the flowers which they have themselves raised and tended than the professional gardener, who, as a rule, merely produces these things to give satisfaction to his employer. —E. G. [We have mentioned this subject to some of the leading seed growers and the following is the substance of their reply: "We find from experience that the choicer the strain of flowers the more difficult it is to save seed, and if a smaller quantity than a half-crown packet is sown, amateur gardeners especially would not be able to raise plants, and would be complaining to the seedsman that the seeds were bad."—EDITOR.]

A Good Winter Vegetable.—After the last two severe winters, which killed many vegetables, one that can be found to withstand all weathers, and at the same time be wholesome, should be largely grown and frequently used in winter. Such a one is the Leek, which, when grown in good rich soil, produces a stem from 9 in. to 1 ft. of clear white and proportionately thick. These when well cooked, and served as whole as possible with melted butter, are delicious. I have used them regularly in winter for several years. To have them good they require to be sown early and afforded liberal culture, in order to induce quick growth before autumn sets in. During severe weather a little dry fern or litter may be shaken over them, not only for protection, but to facilitate the operation of lifting.—A. H.

Continental Vegetables.—Messrs. Jas. Carter & Co., of Holborn, have carried out a good idea as regards good Continental vegetables in offering a select collection of them, which may be had by post. We all know too little of some excellent vegetables grown in France and Germany; this, therefore, is a step in the right direction. We should advise that, apart from this small selection at a fixed price, some of our seedsmen would publish a really trustworthy and complete list of good Continental vegetables, stating their English synonyms when they have any. Many who have travelled wish to get vegetables which they have seen abroad, and though some of these have been sent out of England under new names, we should, for our own part, prefer them under their true names by which they have been known for many years in the places where they are grown.

FRUIT TREES IN PLEASURE GROUNDS.

I CONSIDER that fruit trees have undoubtedly some claim to be considered ornamental. In Germany, where flowering trees and shrubs are held in higher estimation and are more extensively planted than in this country, the line between the fruit garden and pleasure ground is not as a rule so closely drawn as it is the custom to do in England. There one often sees fruit trees intermixed with ordinary trees and shrubs, and I consider that this form of arrangement has much to recommend it. In the first place, the rather cheerless aspect which shrubberies so often present during the early months of the year is much relieved thereby; and then, again, trees thus placed often yield a portion of fruit when those in more exposed situations have been chilled by cutting winds or sharp frosts. I have frequently remarked that an Apple or Pear tree, which by chance has found a place in the shrubbery, has produced fruit when those plantations most relied on have, owing to the inclemency of the season, completely failed. There are probably few more beautiful floral objects than an orchard in full bloom, and few flowering trees or shrubs can rival the Apple or the Pear when loaded with their snowy flowers. When so planted that they are in the near proximity of evergreens, especially such as are distinguished by the sombre hue of their foliage, the effect is very beautiful. I have had the good fortune to reside in some of the finest fruit-producing districts in Europe, and have often thought that nothing could exceed in peaceful beauty the aspect of the Rhein-Thal and Neckar valley during the flowering season of the fruit trees. I have a vivid recollection of once standing upon an eminence in the vicinity of the Vosges Mountains, from whence seventeen villages could be counted, each one embowered in fruit trees, and lying snugly in valleys surrounded by hills, clothed with lines of sombre hue, the whole forming a scene worthy of the most gifted painter's brush. The valley of the Neckar is also extremely beautiful during the month of May, studded with little hamlets, nestling in the shelter of the hills and surrounded with fruit trees of fine proportions, thus forming a series of delightful floral pictures, of which the eye never seems to weary. In the palace gardens of Ludwigsburg there are whole avenues of fruit trees, which, so far from appearing misplaced, rather seemed to add to the attraction of the place. It is certain that there are many situations in gardens in this country, such as in the wild garden, the shrubbery, or the half-annexed portion of the pleasure ground, where a few fruit trees might be introduced with pleasure and profit to the owner. There are, of course, some varieties which by their vigour and manner of growth are better fitted than others for the purpose, and only such should be planted.—J.

Pæonies.—These are plants of easy culture, accommodating themselves to every description of soil; they are very hardy, abundant flowerers, and very varied in colour. The best time to plant Pæonies, both tree and herbaceous, is September, and if vigorous plants be selected they will readily produce a few blooms the following season, thereby gaining a year over those planted in spring. They succeed better in a heavy soil than in one which is dry and light. Before planting the ground should be deeply dug, as they have long tap-roots, and if well manured all the better; but the manure should be well decayed, as if fresh it has a tendency to generate root fungi. A shady, airy situation is best for plants of a pale pink or yellowish hue, as bright sunshine injures their colours. The Moutan or Tree Pæonies are excellent plants for indoor decoration when got into flower early in spring. To accomplish this the plant should be lifted from the open ground in September or October and potted, after which place them in a shady position under a wall till the weather becomes cold and wet, then place them in a moist frame or house, and when they have formed plump bloom-buds, put them in a moist temperature of about 50°. They must not be forced till the bloom-buds are formed or they will not flower at all.

Flower of the Moutan or Tree Pæony.

Lily of the Valley in Norfolk.—It is truly a lovely sight to see this growing as it does in a copse near here by the acre, and well would anyone be repaid for the trouble if they could cover bare spots under trees as Nature covers them; and with care and forethought, without doubt, a great deal might be done in this way. When in bloom, immense bunches of these Lilies may be seen in almost any cottage window, just as they are gathered, leaves and flowers together. I also remember seeing this Lily growing in masses in a garden in Hampshire, pushing itself up through the gravel paths; so that it seems it will almost grow anywhere.—J. O.

Chrysanthemum Societies.—We are pleased to see these are extending in London and its suburbs. We find a new society has just started at Finsbury Park; it bears the title of "The Finsbury Park, Hornsey, and Wood Green Chrysanthemum Society." The schedule is as good as can be expected at the beginning; and as the Chrysanthemum is the best of London flowers, and can be grown as well in a backyard almost as well as in a country park, we hope the society will meet with encouragement and success.

THE HERBACEOUS PHLOX AND ITS CULTURE.

AMONGST hardy flowers adapted for the decoration of small gardens, and where means are limited, the Phlox holds a very high place. It is quite hardy, easily propagated, and very easily grown. As a tall-growing plant for the back row of the herbaceous borders, the Phlox is admirably adapted. A place ought also to be found for it in the schedules of flower shows in August and September. What a contrast the symmetrical spikes and beautiful sweet-scented flowers form to the rather formal and lumpish Dahlia. The cut spikes do not last long unless they are gathered on the morning of the show and kept as cool as possible, and the severed ends should not be long out of the water. I have seen a very neat arrangement made by cutting three spikes of one variety and inserting the ends in a potful of very wet sand, but the flowers were considerably faded before the day was out under a close tent. This would have been avoided if three tubes had been inserted in the sand; and it would have added to the effect if the surface of the sand had been covered with green Moss. In the case I allude to there were, I think, twenty-four varieties of Phloxes, three spikes of each variety.

Culture in Pots.—The Phlox is an excellent subject to cultivate in pots. For pot culture take the cuttings as soon in spring as they can be obtained, and if the plants were potted in autumn and wintered in cold frames this will be about the middle of February. The young shoots will then be about 2 in. long, and if the plant is weak three shoots only ought to be left; if strong five may remain. The superfluous growths must be cut out with the point of a sharp knife close to the stem, and each of them may be inserted singly in a small pot, using fine soil. Let the pots be plunged in a gentle hotbed, and roots will very speedily be formed. With a little care each of the cuttings will produce a very fine spike of flowers the same season. The plants must have no check to their growths, but, indeed, there is little danger of this unless the cultivator is careless. Our present subject is a gross feeder, and does not brook restraint to its roots, and as soon as the young plants have made some growth they ought to be potted into 3-in. pots, and when these are sufficiently filled with roots repot again into 5-in. and 6-in. pots.

Soil.—The soil in which the Phlox luxuriates is one of good fibrous loam about four-parts, one part rich decayed manure, and one of leaf-mould. The plants must be kept under glass in cold frames until May, when they may be turned out in a sheltered place out-of-doors. They should be exposed to light and air, but the force of gales must be moderated by a screen such as may be afforded by a close hedge. Each stem must be provided with a neat but stoutish stake, 18 in. long. All through the growing period water freely and syringe overhead when the weather is hot. Manure water is necessary in the latter stage of the plant's growth, but care must be taken not to apply it too strongly. When the flowers begin to open the plants may be taken into the greenhouse.

Planting Out.—When the plants have finished flowering in pots, cut the stems over and place the plants out-of-doors. They must have the protection of a cold frame during winter if it is intended to flower them in larger pots next year; if not, they may be planted out

at once in beds or borders of rich soil. The second year, to do the plants justice, they ought to be potted into 9-in. or 10-in. pots. The ground must be well manured and deeply trenched if the best results are to be obtained. It is not easy to do the plants justice in a mixed border amongst other plants, and if the best possible spikes are wanted for exhibition it is infinitely better to prepare a special bed for the plants. Here they can be watered and receive the special attention they need at the right time. The plants may be put out 2 ft. apart, and allow the same number of stems as already recommended for pot plants. Each stem must have a separate stick, and that must be placed to them early, as they readily snap over close to the surface of the ground in a gale of wind. Mulch the surface of the beds with rotten manure, and apply water freely whenever the dry, hot weather sets in. The best spikes are produced from two-year-old plants, after that they degenerate. A fresh stock of plants should be propagated from cuttings, which method is preferable to dividing the roots. It is not essential to provide a glass shelter for the cuttings, they will strike roots in the open ground, and from this they may be at once transferred to beds. The varieties of Phlox pyramidalis do much better in the north than they do in the hotter districts of the south; indeed, I have nearly discontinued growing these early flowering varieties, although some of them are very pretty, but they are also very delicate. The late flowering section, Phlox decussata, is the best adapted to grow in the south of England, and it has been much improved during the last decade. Mr. Laing, of Stanstead Park, Forest Hill, has probably done more than any one in this country to improve this section. There are also many highly-coloured varieties introduced at intervals from France.

J. Douglas.

Spiræa japonica.—Some say buy imported clumps of this useful plant; but that is not always convenient. Last April I cut each of my plants in four, planted them out in a good border, and the growth which they made astonished me. In September I lifted them, and they worthily occupied 9½-in. pots. Just now I have them arranged round the curb of our two pot Vine houses 80 ft. long; they are one mass of flower, and, putting aside their actual worth, they add quite a finish to the houses.—R. G.

Summer Snowflake (Leucojum æstivum) in Winter.—This can be had in bloom in January. But I would not recommend it to be forced so early, except when white flowers are required. By forcing so early, the spikes of bloom are smaller than those that open in February, when one can have them quite as good as those on plants grown out-of-doors. My plan is to lift the bulbs carefully in autumn without disturbing them much, and to pot them in such a way that the clumps just allow a little new soil to be put in the pots; after potting, I put them into a cold frame or pit until they begin to start, when they are placed in a little warmer place as occasion may require. After blooming I harden them off, and then plant them out-of-doors; but, if need be, they can be divided before planting; they will then be ready for next autumn. If the bulbs be divided at potting time there will be no bloom; indeed, bulbs should not be pulled to pieces, except one wants to get up a stock.—J. C.

Great Thrift (Armeria cephalotes).—This, compared to our British Thrift, is somewhat as the full-blown life-guardsman to his humble congener in the militia. From a dense mass of crowded leaves 4 in. to 6 in. long spring numerous stems 15 in. to 20 in. high, each bearing a large, roundish, closely-packed head of handsome satiny, deep rose-coloured flowers. It is one of the finest and most distinct perennials in cultivation, and should be in every select mixed border, and on every rockwork among the taller and stronger plants. It comes from North Africa and Southern Europe, and, though hardy on free and well-drained soils, occasionally perishes during a very severe winter, especially on cold soils; it should therefore be placed in a warm position on rockwork, and in very well-drained, deep, and good sandy loam. It is known under various names—Armeria formosa, A. latifolia, A. mauritanica A. pseudo-armeria, Statice lusitanica, and S. pseudo-armeria. It is, fortunately, easily raised from seed; and, as it is not easily increased by division, it is a good plan to sow a little of it every year. Varies a little when raised from seed, but all the forms I have seen are worthy of cultivation.—W.

The Great Thrift (Armeria cephalotes).

BEDDING PLANTS FROM SEEDS.

The present and the last winters have proved very disastrous to those who, without much convenience for wintering plants, have succeeded in ordinary winters in carrying some safely through the severe weather. This can be done in an ordinary winter; but where it is of an unusual character, with biting winds, intense frost, long-sustained and raw fogs, that are worse than the frost, it is very trying indeed, and the plants nursed with so much care soon perish utterly. There are many amateur gardeners who find themselves in such an unfortunate position. It is disheartening work, but the loss is not altogether irreparable, for there are seeds of many useful plants which, if sown in early spring in a little warmth, will be found of great service during the coming summer. In this way foliage and flowering plants alike can be obtained.

A list of useful flowering subjects will, no doubt, prove acceptable, and it will come as a seasonable reminder, as this is the time of year when the seeds should be secured ready for sowing. The dwarf Ageratums come first, and of these there are Imperial Dwarf, Countess of Stair, and Lady Jane, the last for choice, because it is a newer variety, and a superior, distinct, and compact form, with dense green foliage and a robust constitution, growing from 12 in. to 14 in. in height; the flowers are of a bright blue colour, and are produced in abundance throughout the season. The double white and the double golden forms of the annual Chrysanthemums—C. Dunnetti—are very useful subjects in the garden, and if the plants are kept pinched back in the early part of the season, they will grow into close, compact bushes and yield an abundance of flowers, which, in addition to their decorative value, are very useful for cutting from. The pretty Collinsia violacea is a charming plant in the garden, though its duration of bloom is not very great; but for a time, at least, it is very pretty and effective. There are several forms of the Indian Pink that are most useful in a garden; indeed, they are so thoroughly good, that to properly enforce their claims they should have a chapter to themselves. The double Indian Pink, with its great variety of colours, and the rich dark blood-purple selection known as atropurpureus, are delightful things, blooming with remarkable freedom and of a lasting character. No one unacquainted with this race of hardy annual Pinks should continue in ignorance of their great value for cutting from. Then there are Dianthus Heddewigi, D. laciniatus, and D. diadematus, all very fine and improved forms of D. chinensis, each of which has its double counterpart. A pinch of mixed seed will give a great variety of colours, but it is found that selected types come true from seeds. Two of the latest and finest of these are Eastern Belle and Crimson Queen, the last a very fine crimson-flowered laciniated variety. Many cultivators would find beds of these very acceptable during the coming summer, and the plants should have good soil and be afforded plenty of room in which to grow. It is a mistake to crowd them too much. Godetia Lady Albemarle makes a very attractive bed; the flowers are large, finely produced, and richly marked, displaying themselves to the best advantage. There are some very fine selections from this of a peculiarly handsome character. The dwarf varieties of Helichrysum, though not so showy as some of the subjects named, are yet worthy of a place in the garden, being dwarf and branching, and very free. They also are very useful for cutting from, and if a nice bunch or two of flowers of the brightest colours be cut when the blooms are about three parts developed, and hung up in a dry cool place with the flowers downwards, the stems will stiffen, and the dried flowers come in very useful for winter decoration within doors. The dwarf Larkspurs also are singularly beautiful as well as pleasingly varied in colour. There is a danger of this fine annual flower being too much neglected, and a bed of them is a delightful change from the ordinary subjects which find a place in the summer garden. Parson's white Mignonette makes a sweet bed, but it is

of no use to put the plants in poor soil. Cultivators often do the Mignonette an injustice by putting it into poor soil, where it drags on a half-starved existence, and produces only inferior and shabby spikes of flower. Only let the plants be put out thinly into well-manured soil, and the result will be eminently satisfactory. The pretty coppery-scarlet Mimulus cupreus makes a very acceptable bedding plant, and in good soil forms a dense growth and furnishes an abundance of blossoms, and, unlike the large-flowered selections of M. maculosus, is much more continuous in bloom. Then there are the dwarf Nasturtiums, which, though best adapted for bedding purposes where raised from cuttings, are yet very serviceable when obtained from seeds. There are first of all the ordinary Tom Thumb types, which are of coarse growth and with a tendency to hide their flowers in their foliage. The improved varieties, such as Luteum Improved, Beauty of Malvern, Lustrous, Bedfont Rival, &c., make fine beds with handsome and richly-coloured flowers, and as they seed sparingly are more continuous in bloom. When a gardener gets a good type of any of the latter, he should be careful to put in a few cuttings in August, so as to secure some stock plants to propagate from in early spring. Rhodanthe maculata makes a very pretty bed indeed, and Everlastings are always useful. To do the Rhodanthes justice they should be in a light, warm, rich soil. Silene pendula and its dwarf variety compacta are well worthy of justice, and furnish very pretty and durable summer beds. Marigold (Tagetes) aurea floribunda is an invaluable summer-bedding subject, and quite takes the place of the yellow Calceolaria. Unfortunately, there are very poor and spurious stocks of it in cultivation. Only let a good strain be once secured and the gardener can raise his own plants from seed annually. The last subject is Verbena venosa, a valuable bedding plant, which can be raised from seed, and, being a perennial, preserved from year to year. It makes a very fine and durable summer bed.

Of foliage plants adapted for bedding which can be raised from seed, there are the useful Amarantus melancholicus ruber and the distinct drooping A. salicifolius; Celosia Huttoni, with its fine habit and effective colouring; Centaurea ragusina and its variety compacta, the seeds of which should be sown at once in a gentle heat, and the plants grown on into size as fast as possible; Cineraria maritima, a very useful silvery-foliaged bedding plant; Humea elegans; Oxalis corniculata rubra, Perilla nankinensis, Pyrethrum Golden Feather and the handsome cut-leaved variety laciniata. To these can be added Dell's crimson-leaved Beet and the variegated broad-leaved Cress. There are other fine and useful foliage plants, such as Cannas, Chamæpeuce, Nicotiana, Ricinus, Solanum, and Wigandia, but they are better adapted for subtropical gardens, and require special treatment.

Of the flowering plants enumerated, a few of them might be objected to on the ground that in regard to the period of blooming it is not of a very prolonged character. But it is not difficult to raise successional batches of plants from seed, and so have in hand relays of plants to put out as required. Some of them could be grown on in pots to a size when they would begin to develop their flowers, and by so doing the breaks in the floral succession would be of the briefest character. R. D.

Grevilleas from Seed.—Where these elegant plants are raised from seed I have not found it very material at what time they are sown; it is, however, well to get them up early, and if the seeds are now put in it gives an opportunity for their attaining a useful size during the season. Seedlings are in some respects preferable to struck plants, and by raising them from seed there need be no stint in the numbers; their graceful Fern-like habit is such as to make them deserving of being grown in quantity, not only for the purpose of table decoration, for which few more plants are more appropriate, but also for mixing with greenhouse plants either in flower or possessing massive foliage. Seed sown in a pot or pan of well prepared fine peaty soil, to which has been added sufficient sand pressed smooth on the surface, soon vegetates. The seeds should be distributed evenly, and a little fine sandy material should be put on them. They should then be covered with a bell-glass, or a piece of glass should be laid on the top of the pot, which should be placed in a moderate heat. It is not absolutely necessary to cover the seeds of these or similar plants with glass, but there is an advantage in thus being able to keep the soil in a moist condition without often applying water, and the less that has to be given before they vegetate the better.—A. Z.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

March 11.—Sowing the main crop of the following sorts of Onions, viz., Early White Naples, Improved White Spanish, Bedfordshire Champion, Danvers' Yellow, and James's Keeping. Putting in cuttings of Tomatoes. Planting out Potatoes in frames previously brought forward in pots. Planting Selected White Spanish Onions for seed; also a few Beet and Early Nantes Carrot.

March 12.—Sowing Mustard and Cress; also Parsley and Early Frame Radish. Putting in cuttings of Alternantheras, Coleus, Mesembryanthemums, and Salvias. Potting off Melons, Heliotropes, Petunias, and Verbenas. Transplanting autumn-sown Onions and Red Cabbage plants. Lifting some large crowns of Victoria Rhubarb for making a new plantation. Renovating the linings round manure frames. Looking over the Strawberries in bloom. Removing all weak plants and cutting out all the weak flowers.

March 13.—Putting in cuttings of scented Verbenas, Pelargoniums, Gardenias, and Fuchsias. Potting off Iresine and Ageratum. Planting out Brown Cos Lettuce plants from the autumn-sown bed; also a few Cauliflower plants. Giving Cucumbers a little earthing. Looking over the Grapes in bottles, cutting out bad berries and filling up the bottles where required.

March 14.—Sowing the following sorts of Peas, viz., William I, James' Prolific Marrow, G. F. Wilson, Forty-fold, Carter's Commander-in-Chief, and Sutton's Giant Emerald Marrow. Potting off Alternantheras, Coleus, and Lobelias. Taking up Camomile roots, dividing them, and making a new plantation. Finish the pruning and nailing of Peach trees on open walls. Getting the wire guards put over the Peas and Broad Beans to protect them from jackdaws and sparrows.

March 15.—Sowing Mignonette in pots. Pricking off Celery in boxes and putting them back into warm frames so as to keep it growing. Cleaning out an old worn-out forced Asparagus bed, and put in another. Earthing up Potatoes in frames. Thinning out Carrots and Radishes in frames. Trimming out Pea sticks. Getting soil into manure frames ready for Melons. Getting netting and other covering over Apricot trees for protection.

March 16.—Thinning Grapes, and tying down the shoots were required. Manuring and digging Rose borders. Earthing up Beans in pots. Cutting back and thinning out dwarf Laurel clumps. Tying in some of most forward shoots in early Peach house. Tying up Cos Lettuce, and covering up Endive to blanch. Manuring and digging the ground previously occupied by Brussels Sprouts. Covering up Seakale, and planting Potatoes.—Fruit in use for dessert:—Pines, Grapes, Apples, and Pears.—W. G., *Dorset*:

Roses.

Pruning Roses.—For ordinary purposes Roses should not be pruned too severely, as numbers of flowers are generally more acceptable than a few exceptionally large ones. It is difficult to convey in writing the exact method advisable to follow, as even many individual varieties require to be somewhat differently treated from others; but it may be taken as a safe rule that the stronger the natural growth of the variety, and the more vigorous the state of the individual plant, the less pruning needed, for the obvious reason that a plant in this condition is calculated to support a greater number of shoots with a proportionately larger crop of bloom than one that is weaker, either by accident or the less vigorous habit of the sort. In all cases it is advisable to remove completely out from their base the whole of the weak, thin wood, the produce of last or previous seasons, and which has not sufficient substance to push shoots strong enough to flower; for the presence of these uselessly taxes the energies of the plants, drawing support which is better concentrated in the stout, blooming wood. These weak growths also tend to crowd the plants, keeping out both sun and air. With Roses that are naturally weak growers it is necessary to prune to fewer eyes than in the case of the strong ones, otherwise, if left too full, the flow of sap is directed to the formation and support of a much greater number of shoots than are ever strong enough to bear flowers, to the manifest detriment of those which are. All the Tea varieties must be pruned very cautiously, leaving their strong growths without further interference than being somewhat shortened; but with these, likewise, it is advisable to thin out all the weak shoots. With the weakest growers of the Teas also leave the strongest shoots a considerable length, but reduce the number proportionate to the natural strength of the variety and the more or less vigorous condition the plant happens to be in.

Greenhouse Plants.

Pots containing three or four Tulips, bordered with Club Moss, and set off in the centre with such Ferns as Pteris serrulata, have a beautiful effect, and the same arrangement may with advantage be carried out in the case of Hyacinths. Forced shrubs are now particularly attractive, and should be mixed harmoniously with such plants as are not in flower; amongst them are Lilacs, white and purple; Weigelas, Roses, Prunuses, Thorns, white and scarlet; Spiræas, Deutzias, Acacias, &c. Cinerarias, Cyclamens, zonal Pelargoniums, Chinese Primulas, Epacrises, Heaths, and Fuchsias are also now in great beauty. Plants in general are making fresh growth, and consequently require more water. Prune and tie all that require such attention. Any that are in a backward condition in borders should be moved and have others put in their places. In planting from pots, loosen the ball of soil and spread out the roots, for, although this may occasion a little check for a time, the plants thrive better afterwards. Hard-wooded plants requiring repotting should be attended to at once, and afterwards kept for a time in the closest part of the conservatory. They should not be watered for some days after being potted, but the atmosphere should, if possible, be somewhat damp. Climbers of various sorts should be thinned and tied, taking care in thinning to provide for a free display of flowers rather than a gross production of wood. Large Camellias, which have got leggy from want of judicious pruning when young or through overcrowding, may be improved in the following manner:—Take, at once, a couple of healthy young plants in 6-in. pots of any approved kind, place these on the surface of the ball of the plant to be operated upon; then inarch the heads of each of the young plants as low down as they can be got on the opposite sides of the large plant. These will become firmly united during the summer, when they may be severed from their original stems, and in the following season, before growth commences, the head of the stock may be cut away just above where the young plants have been inarched, when they will commence to grow apace, and in a little time make handsome plants. Moveable shading of thin material should be got ready, as bright sunshine on a March day makes short work of many things in flower. Pinch out the points of a portion of the stock of Pelargoniums. These will be useful in July after the early ones are over. Start another batch of Achimenes, Gloxinias, and Tydæas for summer decoration. See that Lilies breaking through the soil are not left where they have an insufficiency of light, otherwise they make weak growth, which no care afterwards will put right.

Ferns.—The general potting of Ferns should have been done last month, but if the operation has been delayed until now it ought to be at once accomplished. If the plants have begun to grow they will be more liable to suffer from shifting than they otherwise would be, but with careful attention in the way of shading, maintaining an equable but gradually increasing temperature, and supplying a moderate amount of moisture both to root and top, little danger need be apprehended. Ferns whose fronds spring directly from the soil require a richer compost than such sorts as Davallia canariensis, whose rhizomes grow above ground. To the former give a mixture of equal parts of good fibrous peat and loam, with the addition of some leaf-mould, plenty of silver sand, and some small chips of fine sandstone. If the plants be required, however, for furnishing purposes, a little more loam and a little less peat will induce a hardier growth, and one better adapted for hard work than the luxuriant growth promoted by the first-named soil. Those with rhizomes above ground may be potted in fibrous peat and a little leaf-mould, pegging the rhizomes down on the soil. Some of the Davallias, Polypodiums, Pellæas, Pleopeltis, and others grow well on pieces of stumps of Tree Ferns, affixing themselves there-to like Orchids. If the stumps are in the vicinity of other Ferns, spores of different species are sure to vegetate in their crevices, more particularly those of Adiantums, Gymnogrammas, Aspleniums, and Pterises. Syringing Ferns is an operation requiring skill and care;

although some genera are partial to such treatment, others are particularly averse to it, more especially the Adiantams, Gymnogrammos, Cheilanthes, and other delicate and farinose kinds. Filmy Ferns are best grown in glass cases or under hand-lights or bell-glasses, or a division of the Fernery may be specially set apart for their culture. Most of the small delicate species thrive well on blocks of decaying wood, pieces of the Tree Fern stumps, or in pots; whilst for strong-growing kinds, like the Todeas, pot culture is the best and most convenient. For pot culture fibrous peat, chopped Sphagnum, and some fine sandstone chips make a good compost, and for Todeas the surface may be mulched with live Sphagnum. The smaller kinds of Ferns thrive well on little mounds composed of fibrous peat and sandstone chips, or on a block of wood embedded in turfy peat from which they can emerge and scramble over the wood. These Ferns like a steady moist atmosphere, but too much artificial heat is detrimental to them; in fact, a greenhouse temperature is almost sufficient for the whole of them. In watering let the water fall lightly upon the fronds, but in addition to these slight sprinklings water must also be given to the roots, more especially during the growing season. Hanging baskets should now be replenished with Ferns and Selaginellas, and Wardian cases should be examined and re-filled if necessary.

Flower Garden.

Spring flowers are now daily becoming so plentiful that herbaceous and shrubbery borders are getting quite attractive; on lawns, too, are tufts of Crocuses, Snowdrops, Dog's-tooth Violets, and other favourite bulbous plants that annually spring up and unfold their beauties when once planted in such positions. Under the wide-spreading canopy of large deciduous trees a spring carpet of white, yellow, and blue, furnished by early-blooming bulbs, is most desirable and pleasing, and in such a situation they thrive where not a vestige of Grass will grow. Only the commoner kinds, however, should be used in that manner, for the finer ones, if so treated, are apt to degenerate; hence the necessity of a good position for them, where they can retain their foliage until the bulbs are properly matured, when the foliage may be cut over and the surface of the ground carpeted with annuals or other shallow-rooting plants. Lawns should be swept, rolled, and, if necessary, mowed. Where they are covered with Moss it should be raked off, a top-dressing of finely-sifted soil applied, and some Grass and White Clover seeds sown at the same time. The top-dressing should be equally spread, raked smoothly and level, and then well rolled. Should the lawn be thinly covered with Grass, although free from Moss, a top-dressing of good soil, with some guano mixed with it, and also a sprinkling of Grass and Clover seed, will greatly renovate the turf. Before applying it, however, go over the surface with an iron-toothed rake, so that the old and new soils may the more readily unite; soot, salt, or guano applied alone in rainy weather is also productive of excellent results. If the edges of lawns or Grass walks be well rolled before trimming them, that operation can be more neatly and accurately done. Turfing of lawns may still be performed, but the sooner such work is finished now the better will the Grass stand the summer's drought. In the absence of turf seeds may be used, but in that case a long time elapses before a thick, close carpet can be formed, and continuous attention in the way of mowing is requisite. Alterations in the flower garden or pleasure grounds may still be proceeded with. The planting of deciduous trees cannot, however, be too speedily finished now for a season; evergreens may be transplanted later. Coniferous trees, as a rule, transplant very well in the spring time. In planting, preserve the roots as entire as possible, and do not bury them more deeply than is necessary; stake such as require support. Instead of roughly filling in the soil, it should be well and carefully worked in amongst the roots with the hand, and a good soaking of water at planting time has also an excellent effect in settling the soil about the roots.

Vegetables.

Make another sowing of Peas. Where suitable sticks are plentiful, tall kinds are the best to sow at this period of the year, as they bear longer than dwarf sorts, or such as are of medium height. Where tall varieties are grown, always give plenty of room; there should be not less than 5 ft. between the rows, as to crowd them is the reverse of any gain, for without sufficient air and light the pods never fill as they ought. Directly the earliest sowings are staked, a line of Spinach should be sown between the rows. This will be ready for use and the ground cleared before the Peas are fit to gather, and it will in no way interfere with their growth. The main crop, Onions, should be sown as soon as the land is sufficiently dry, but on no account if it be so wet as to adhere to either the tools or the feet, as should the seed be sown when the soil is at all sticky, subsequent dry weather will be sure to bake it so hard as to prevent its working well through the ensuing season. In pointing in the surface-dressing of manure spread over the ground do not let it be too deep, or the young plants will be too long in getting their roots into it. Many of the north country Onion growers put the greater portion of the manure they use on the surface, allowing it to remain until it is well sweetened by the action of the air, sowing the seeds in it, and covering the whole with ½ in. of soil from the alleys. With this, as with almost all other vegetables, the system of growing in rows should be recommended. It must be admitted that it takes a considerable time longer in sowing than the broadcast plan, but it affords such great facilities for thinning the crops, for the use of the hoe is destroying weeds, and for keeping the surface stirred (by which the ground is aërated and made open for the descent of rains, and the loss of moisture by evaporation in dry weather is prevented), that the first trouble is amply compensated for by the succeeding results. The use of soot should not be omitted, especially in old gardens where the land is at all light, for in these the ravages of the Onion grub are most feft; the soot not only acts as a powerful manure, but the ground retains the smell through the season in a way that is so objectionable to the fly as to have a considerable influence in preventing it depositing its eggs on a crop where the land has been dressed with it. After the ground has been levelled, tread the whole quite solid. The lighter the land is naturally, the more solid it ought to be made. Then mark out the rows 1 ft. apart and ½ in. deep. After sowing, draw the soil over the seeds with the back of the rake. Tread the ground thoroughly, and finish by rolling. In dry districts, where Broad Beans were sown about the beginning of the year, they will be now above the ground, and a second sowing should be made; this crop also likes heavy soil. Sow more Radishes, raking in the seed, it not being necessary now to cover it with litter. See that the litter is removed altogether from the second sowings as soon as up, for after this time the frost is not likely to be sufficiently severe to injure them. Sow a little Mustard and Cress every fortnight in well-manured ground. To have this young and tender it is necessary to sow often. Lettuce should also be sown on the richest piece of ground available—a little of the Cabbage variety (Tom Thumb) as well as Cos; the former will be sooner fit for use and precede the erect-growing kinds. Rows for the latter should be 15 in. apart; the others will do a third less. In sowing, the best method is to drop the seeds, half-a-dozen together, in patches as required to be grown; afterward thin them out to a single plant. If the weather be mild, a portion of those that have been wintered in frames should be planted out in a sunny, sheltered position; but do not risk the whole, as I have known the weather after this time to be so severe as to seriously affect them, especially after a winter like the present, when every kind of vegetation has been kept continuously soft and growing. Take them up carefully with a trowel, so as to preserve the roots as far as possible from injury. Give some water as soon as planted, and if the days be sunny or the nights cold, place a small flower-pot over each plant for a few days, but not pressed down so closely as to exclude the light.

Little Rock Gardens.—In small gardens or elsewhere, where there is no scope for the creation of picturesque scenery without offending correct taste in such matters, a little rockery of alpine or other plants similar to the one shown in our illustration, will always prove a source of pleasure if properly tended. A rockery on a small scale may be created, in every way suited for the cultivation of what are termed alpine plants, by raising mounds of good soil and partly covering the surface with stones, vitrified bricks, or clinkers. The largest pieces may be partially bedded in the soil. When the stones, or whatever materials used, are satisfactorily arranged, the cavities between them should be filled up with good soil to suit the different plants. Equal parts of loam and peat will suit most of them, but for some species a larger proportion of peat should be used, and fragments of stone or gritty matter should be mixed with it to keep the soil open and to secure efficient drainage. When the mound or bed has had time to settle, the planting may be commenced, and it is now that some knowledge of the antecedents and habits of the different species is desirable, in order to select proper and suitable sites, to give the small, delicate species a sheltered nook on the lee side of some large stone, and to plant the strong grower near the base of the work, where it cannot overhang and smother up its weaker neighbour. There are some kinds that delight to grow on a rocky ledge and overhang its outward face. Some love shade, and may be planted where some shelter from the sun's hottest rays can be had; others, again, love sunshine, and will revel in its fiercest beams. After all that may or can

A little Rockery.

be written or said on this subject, there is no royal road to the acquisition of this or any other kind of special knowledge, and there is no better way of becoming actually acquainted with alpine plants and the best mode of cultivating them than by commencing with a small collection, and as one's knowledge and interest increases to keep adding to it; and as beds or mounds of alpine plants need not assume any geometrical plan, we can add a bed or two any time we may think proper to do so. In this way we shall have time to become acquainted with all our favourites, to keep a close eye upon each, and if one looks unhappy to ascertain the cause and supply the remedy; indeed, the plant itself, if the symptoms are intelligently studied, will supply all the information we require to form a correct estimate of its condition. Planting alpines on raised beds or mounds is a much more interesting way of cultivating them than in the level border, even in the case of such kinds as succeed under ordinary border culture. In the first place they are brought nearer the eye; study is made more easy and interesting; and in the periodical digging and hoeing of borders many choice plants are often seriously injured from want of care. Then, again, in winter, it is the constant damp rather than the cold that injures the natives of the snow-clad regions, and on a well-drained mound of rockwork this source of danger would be mitigated or altogether removed.

Abutilon vexillarium.—I recently observed a remarkably fine specimen of this handsome greenhouse plant growing in a conservatory near Dorking. It was trained on the roof, from which hung down festoons of medium-sized bell-shaped flowers of a bright red and orange colour, and very effective at this season of the year. In the same conservatory, and also trained on the roof, was a beautiful plant of the seldom-seen Solanum jasminoides, furnished with beautiful white Jasmine-like flowers, that are very useful in winter in a cut state. They are produced in trusses in great profusion, and continue long in perfection. The back wall of this conservatory was covered with fine plants of some of the old varieties of Pelargoniums, noticeable amongst which was a fine specimen abundantly in flower of the very old kind called quercifolium floribundum; it bears blossoms of a lively shade of rosy-purple. This Pelargonium, though rarely

seen now, is a capital plant for covering walls or pillars in a conservatory.—B.

GLASSHOUSES AND FRAMES.

HOW TO STOCK A SMALL GREENHOUSE.

In the first place avoid the two great snares of the anxious "Amateur," namely: *over*-potting and *over*-crowding. As to pots, it may be accepted as a standard rule that no plants require anything beyond a 10-in. pot. Of course, here we are speaking of ordinary sized flowers, not the giant specimens of the florist or stovehouse. Nothing to our mind is more ugly than the rows of huge 12-in. and even larger pots to be seen in the greenhouses of so many amateurs, the specimens grown leggy or shrivelled up as the case may be. The great secret of a *pretty* greenhouse stage is to have your stage not higher than 3 ft. 6 in., so that one looks down *on the flowers*, in place of the pots, as so often happens by the stages being made awkwardly high. Take care not to exceed *more* than two specimens of a kind—of course, by this we mean identical in colour—arrange the taller specimens in the background, bringing the shorter plants to the front, with due regard to their habit. Carefully go over your plants quite every other day, picking off drying leaves and blooms, and have all swept up, so as to be trim and neat. Nothing spoils the effect of a greenhouse more than untidiness. After watering, put the can and other implements used carefully out of sight; these are never picturesque. With regard to over-potting, this is a folly which spoils many a house of really choice flowers. The great art in growing flowers in pots is to have them dwarf, full-foliaged, and finely bloomed. For this purpose a 6-in. pot is useful for all Geraniums and Fuchsias, and an 8-in., the largest at most that should be given to the greenhouse annuals, such as Primula, Cineraria, Calceolaria—all of which are very gross feeders and require extra pot-room to form roots for quick flowering. Of course, where flowers are grown in 6-in. pots they must be potted freshly every year, and then a strong, rich compost must be composed of loam, manure, and silver sand, and plenty of drainage given by a generous use of broken crocks. When watering, give your plants a strong solution of manure at least once a week. What, again, can be more ugly than the spindled-looking Geraniums and Fuchsias as grown too often by amateurs—a long brown stem, and perhaps crowned with a really fine bunch of blossom, which seems to mock the ugly stem from which it sprang with its drooping loveliness. To anyone reading this with such plants disfiguring his greenhouse we would say, cut the plant down with what you may feel is a ruthless hand and plant the cuttings. We will venture to promise nine out of every ten will strike; also that in all likelihood the old plant repotted and put in gentle heat will delight you by bursting out in fresh beauty In order to keep Fuchsias bushy the extreme points of the young shoots must be kept pinched out; for every such pinch you will have four or five more shoots. Another mistake the amateur is liable to make is that of stocking his home with plants which are unsuitable and difficult of culture, and thereby crowding is ensured and green fly engendered.

The following is a list of the best flowers for a small unheated greenhouse, all of which may be attempted without the assistance of a gardener, and with no other appliances except that of an ordinary frame and hotbed. The list of flowers given are selected for three reasons—first, almost perpetual blooming; second, freedom from green fly; third, hardiness of growth. Geraniums in variety, Fuchsias in variety, Petunias, Daphne indica rubra, very sweet-scented; Heliotropes, tuberous Begonias, Achimenes, Musk, Cyclamen, Mesembryanthemum, Lantanas, Tree Carnations, Azaleas, Camellias, Balsams, Lilium lancifolium, Cactus, Mimmulus, Hyacinths, Christmas Roses, Tulips, Primulas, Calceolarias, and Cineraria.

For hanging baskets nothing can be prettier than the glossy Ivy-leaf Geraniums, variegated Mesembryanthemums, or the fresh, lovely Nemophila insignis and the Tradescantia; and where fragrance is sought after, nothing can equal a pot or two of Mignonette—this is so easily managed, it is a wonder more is not grown; and the little bright Lobelia can be had in blossom all the year round. Loadstone.

Solanums or Winter Cherries.—These are the best of winter berry-bearing plants; they are easy of culture and are highly ornamental in windows or greenhouses when well furnished with bright scarlet fruit. About Christmas-time there is a ready sale for these in the London markets, and, indeed, throughout the whole of the winter there is a large demand for them. Market growers possess several varieties of them, but none are greater favourites than Weatherill's Hybrid, which is dwarf in habit, and produces masses of large bright scarlet berries. Some plant out their young plants in the open ground and pot them in autumn, but the most successful way is that of striking them in spring from cuttings which are obtained from old plants introduced into heat early in the year. The cuttings are inserted ten or twelve together in 5-in. or 6-in. pots, and are plunged in bottom-heat, in which they soon form roots; they are then potted singly in 3-in. pots, and, after having become well established, their shoots are stopped, which induces them to break and form bushy little plants. They are next shifted into 5-in. and 6-in. pots into good holding loam and sand. They are then arranged on wide, airy stages, on which they are allowed

The Solanum or Winter Cherry.

plenty of room, in order to induce them to grow short-jointed—a condition in which they yield more berries than they otherwise would. Thus circumstanced, they remain until their fruit is set, a free circulation of air being afforded them whilst they are in blossom. When the berries are fairly formed manure water is given them, which imparts to the leaves a healthy, deep green appearance, and helps the berries to swell. At this stage the plants are placed out-of-doors in the sunniest position that can be found for them; here the berries soon colour, and when that occurs the plants are taken to market. Late batches are finished off in houses in a moderately warm temperature.

AN UGLY BANK MADE BEAUTIFUL.

I know a bank than which nothing could be uglier when first I saw it. The aspect is good towards the south and west, and it is sheltered on the north by trees and a wall; but the soil was a horrid yellow gritty stuff, banked up against the wall and supported in front by a couple of rows of large stones. It did not look as if anything could grow in it, However, we were looking about for a suitable place where we could make a rockery, and decided to try it here. We concluded that we had only to get some good stones, to be roughly laid on, and cover the yellow bricky stuff with good vegetable mould, and then plant Alpines. We set to work accordingly. I shall not try to remember how many pretty Alpines perished on that bank. In vain we made holes in the clay and crammed in leaf mould; our Auriculas alternately damped off and burnt up. The slugs ate our choice Sedums, and anything else that had vegetation enough to be good eating. Our Cyclamens gave an occasional leaf, but never a flower. London Pride certainly did flower, and very pretty it was, but the green rosettes soon frizzled up and looked ugly. We encouraged one another, however, and persevered, and now the bank is really pretty. One thing which succeeded on it was the Muhlenbeckia complexa. I am sorry that I know no English name for it, and I have never seen it in flower. It has numerous small round dark green leaves, set on long wiry dark brown stems. It has often attracted attention, but whenever I have been asked for a root I have always warned the receiver that it bears a bad character. One of the gardeners at the Dublin College Botanic Gardens told me that it was a bad weed and would spoil any rockery that it got into. I cannot say that it showed any very overbearing disposition on the front of our bank; and I am almost afraid the last two winters have been too much for it. Last summer it hardly recovered the effects of the previous winter, and now it looks dead. But it ought to be evergreen. I am sorry if we have lost it, for it looked very pretty hanging over the stones which held up our bank. Its sprays are not unlike the fronds of the common Spleenwort. We had it from Cornwall. A common Sedum (Sedum spurium) has taken a liking to the place, and allows no more ugly yellow soil to be visible where it can come. It has run over the spot where we had planted a fine clump of Apennine Anemone, which, just contrives to send up a flower or two through it, and it would quite swallow up the little Campanula pusilla if I did not interfere and push it aside. But I like it. It looks green and vigorous with a pretty tipping of russet. I believe it would hide any ugliness in any spot where the sun shines, and it would keep weeds down. But another good thing on our bank is the vigorous growing Japan Anemone, the red sort. The foliage of this plant is good, and comes up early, though the flowers are late; and there is something particularly picturesque and good in the style of the flower-stems, buds, and blossoms. It is a plant which gains much by being allowed a good deal of space, and as it will really grow anywhere it is most valuable for filling and hiding ugly corners and banks. Slugs do not eat it; not even a bit of ground need, therefore, be entirely ugly and bare. Something can always be found which will cover any corner, and cover it with beauty, too, for those who have eyes to see the beauty which is neither new nor rare. We soon found that it would be impossible to grow anything very choice or tender on our bank without entirely remaking it, and that was not worth while so near the gate, and subject to the depredations of idle boys. But the bank is no longer an eyesore. Common hardy plants have made it interesting and pretty.—H.

ORNAMENTAL GOURDS.

The cultivation of the Gourd family in our flower gardens has hitherto been strangely neglected, and our object now is, by a description of a few of the most remarkable species, to direct more general attention to it. On the Continent Gourds have been long esteemed, either for their singularity or the handsome colouring of their fruits. Being climbing plants, they are employed for covering arbours, trellises, &c., and although most of them are annuals, the peculiar effect which they produce will repay the small trouble of an annual sowing. The subject of our illustration, the Gooseberry Gourd (C. grossularioides) is one of the handsomest of the family. It forms creeping stems about 8 ft. long, and of the thickness of a goose-quill. The fruit, which are produced in great abundance, are as large as a good-sized Gooseberry, and are finely marked with alternate longitudinal bands of very dark and very light green. They are so bitter in taste as to be inedible, and so numerous that a single plant will often bear from 500 to 800 fruit. Although the plant is a native of North Africa and Arabia, it can be advantageously grown in the open air in this country during the summer, and may either be sown, in the place where it is intended to remain, about the middle of May, or, in a hot-bed under a frame, in March or April, and afterwards transplanted, with a good

ball, into a bed of spent hot-bed material, or into a hole filled with stable manure, covered with some inches of soil. Although not absolutely necessary, frequent waterings during the heats of summer will be found useful in encouraging a vigorous growth. Another very singular species is C. metuliferous, which grows about 4 ft. or 5 ft. high, and bears largish egg-shaped irregularly-nibbed fruit, 4 in. to 6 in. long, studded with huge prominent spikes, and of a fine scarlet colour when ripe.

Enough, perhaps, has been stated to show the wonderful variety which exists amongst the fruits of this family of plants, and we shall conclude with the following enumeration of some species now in cultivation which present a most extraordinary diversity in the shape and colouring of their fruit, and seeds of which are easily procurable through any of our leading nurserymen. Amongst the finest of the larger fruited sorts are the Turk's Cap varieties, such as Grand Mogul, Pasha of Egypt, Viceroy, Empress, Bishop's Hat, &c., the Serpent Gourd, Gorilla, St. Aignan, Mons. Fould, Siphon, Half-moon, Giant's Punch-bowl, and the Mammoth, which weighs from 170 pounds to upwards of 200 pounds; while, among the miniature varieties, the Fig, Cricket-ball, Thumb, Cherry, Striped Custard, Hen's-egg, Pear, Bottle, Orange, Plover's-egg, &c., are most interesting kinds, and particularly useful for filling vases, &c. All these, as well as many others, grow well in our climate in summer, and do not require the protection of glass or any other shelter. The directions given for the culture of the Gooseberry Gourd will be found applicable to all the rest; those that are sown in frames early in the season being gradually hardened off by a judicious admission of air before they are finally planted out. This course, however, need only be pursued when an early growth is desired. The plants, as a rule, are tenacious of life, and will exist with a scanty supply of water and in indifferent soil; but if it is desired to grow them to their highest degree of perfection, they will, like their congeners the Melons and the Cucumbers, be found not insensible to the advantages of a rich and mellow compost and a liberal allowance of water at all times. These conditions are, in fact, essential to the abundant production of well-developed, finely shaped, and richly-coloured fruit.

POULTRY.

Light Brahmas.—The light Brahmas are now one of the most popular varieties of poultry. It is astounding what immense strides these birds have made within the last few years. We remember the time when they had to find a place in the variety class, as so few of them were bred. Now they are often the largest classes in a show, and we have seen as many as eighty pens in a single class at the Crystal Palace. This great popularity, exceeding, as it does, that of our old English game fowl and the Dorking, with all their years of careful breeding and selection, will be to those unacquainted with the properties of the Brahma somewhat surprising. It may, therefore, be useful to those who know little about the different varieties of poultry if I briefly describe the characteristics and properties of the Brahma. First, there is hardly any variety, except the Cochin, which are able to withstand the variations of our climate so well as the Brahma. For winter laying, at the time of the year when fresh eggs are very scarce, no matter how severe the winter may be, Brahmas lay very freely. We have had eggs in abundance since just before Christmas, and our pullets were not hatched until the middle of last May, and they are now laying capitally. Many times we have had to sweep the snow away before throwing the food to the birds, and often they could be seen walking through the snow hock-deep to seek a little shelter from the cold winds, under a shrub, perhaps only to return to their house as the time approached for them to lay an egg. Nature—or shall we say man, by his careful selection in breeding?—has provided them with such an abundance of feathers, that, however cold the weather may be, it does not seem to affect them much. The Cochin is an idle bird, seldom caring to seek for its food. The Brahma is quite different, and will roam over a field or through a garden as diligently hunting after grubs and insects as a game bird; or they will rest quite as well contented and happy confined in small space or a backyard as if they had the run of a large meadow or a freshly-ploughed field. It is owing to their hardiness, their good laying properties, their contented disposition, and their handsome appearance which has within a few years raised them to their present position as the favourites amongst all the many varieties of our domestic poultry.—CHANTICLEER.

1532.—**Houdan Eggs.**—In reply to "Foots Cray," I can testify to the excellent qualities possessed by Houdan hens, having kept them for three years. The chickens feather and grow quickly, are hardy and easily reared. They are splendid layers of larged sized eggs, and, excepting Brahmas and Cochins, are not surpassed for strength of constitution and general stamina by any other breed.—SKERNE, *Wansford, Hull.*

Eggs for Hatching.—Will some one kindly inform me how long eggs may be safely kept for hatching?—C. E. S.

The Gooseberry Gourd.

Gapes in Chickens.—Can any one kindly tell me a cure for this disease, which attacks them when about six weeks old? I have tried everything I know, but without success.—J. R.

Ducks.—Will any one kindly tell me what is the best breed to keep where there is no water, for laying and for table use; what food should they have, and how often? I prefer the Aylesbury or any large sort. Any other information will be acceptable.—W. G.

White Brahma Fowls.—Will any reader kindly tell me where and at what price I can obtain a few eggs of thorough-bred white Brahmas for sitting, and also the best time to hatch them for laying in winter?—NOVICE.

Eggs Without Shells.—Your correspondent E. J. C. (page 794) complains of eggs having very thin shells, and dropping from the hens at night. I have effectually cured all that, and in a very simple way too. I merely keep all my broken crockery-ware instead of letting the servants pitch it into dustbins, &c. I then smash it up every other day into small pieces about the size of Peas; it is easily done with an axe or hammer; and the hens eat the broken crockery with avidity and the silica contained therein makes my eggs very hard indeed.—C. W. MILNE, *Secly Park.*

Fowls not Laying.—"W. H. S." complains that his pullets do not lay. I should think their time is fully employed in discussing their four or five meals a day without troubling themselves about laying. I should recommend him to try feeding them twice a day; in the morning give them Barley-meal or ground Oats made very stiff; and about one or two o'clock give them whole Barley or Maize, or some other kind of corn. Always give them as much green food and garden refuse as possible, and never give them more food than they can eat, as it only gets wasted by being trodden into the ground. A small tea-spoonfull of cayenne one or twice a week in their meal will perhaps have the desired effect.—W. T. D.

ANSWERS TO QUERIES.

1369.—**Annuals for Exhibition.**—The criticism of my selection of annuals for exhibition in reply to the query as above made by "Weston-super-Mare" necessitates some notice on my part. Antirrhinums are just as much hardy annuals in this locality as dozens of other recognised annuals. We sow in February under glass, get a crop of flowers and seed in the autumn, and the winters kill nearly all of the plants. Grown under such conditions, it is entirely annual in habit. The introduction of Mimulus applied only to the comparatively annual Mimulus maculosus or spotted kinds, so well represented by Clapham's strain. Raised from seed, also sown in February, and flowering through the summer, they too are killed in the winter. To convert such things, that seed so freely and are so easily propapated by seed, into perennials would be absurd. The calling this Mimulus moschatus was a mistake. Ageratums, Petunias, and Lobelias, although if kept in heat through the winter and propagated by cuttings practically become soft-wooded perennials, are in the open air but annuals; and all can be and are freely raised from seed. Here both the latter, raised from seed each spring, are grown as tender annuals for seed production, and are in every sense just as much annuals as are Stocks or

Asters. In recommending annuals for exhibition much depends upon the nature of the question. In this case there was no indication whether the plants were for pot culture or to be exhibited as cut flowers; but it was accepted that the plants were to be sown in pots; hence the selection. The time of year should also be named at which the things are needed to be in bloom, as selections might be given of plants that are naturally flowering in early summer and late autumn. Some of the plants mentioned by my critic are late and difficult of culture, especially to amateurs—Celosias, for instance, needing considerable heat to produce them in good condition. Our desire is to answer all queries as nearly as possible in accordance with the requirements of the questioner.—A., *Middlesex*.

1532.—**Annuals and Perennials for Bouquets.**—*Hardy annuals*—Chrysanthemum Dunnetl pleno, white; Lathyrus azureus, sky blue; Mignonette, white; Nicotiana suaveolens, white; Sweet Pea, various; and Scabiosa candidissima pleno, white. *Half-hardy annuals*—Acroclinum roseum, rose; Aster Pæony and Chrysanthemum-flowered, various; Dianthus imperialis fl.-pl., Heddewigi fl.-pl., and laciniata fl.-pl., various; Helichrysum compositum, various; Phlox Drummondi, various; Rhodanthe atrosanguinea, magenta; Statice sinuata atrocœrulea, blue; Sultan (Sweet), white; Zinnia elegans and elegans fl.-pl., various. *Hardy perennials*—Achillea Ptarmica fl.-pl., white; Agapanthus umbellatus, blue; Alstrœmeria aurea, orange; Amaryllis Belladonna, rose; Ammobium alatum, white; Anthericum Liliastrum, white; Anemone japonica Honorine Jobert, white; Campanula persicifolia pleno (blue) and alba, white; Catananche alba fl.-pl. (white) and cœrulea, blue; Chrysanthemum chinensis, varieties; Colchicum autumnale alba fl.-pl., white; Convallaria majalis, white; Dianthus hybridus Marie Paré (white) and multiflorus, red; Dianthus caryophyllus fl.-pl. (Carnation) varieties; Dielytra eximea, red; Francoa appendiculata alba, white; Galanthus plicatus (Giant Snowdrop), white; Geum coccineum, scarlet; Helleborus niger (Christmas Rose), white; Iris persica, blue and white; Iris reticulata, violet and yellow; Lathyrus grandiflorus (red) and albus, white; Leucojum vernum, white; Myosotis dissitiflora, blue; Narcissus poeticus fl.-pl., white; Omphalodes verna (blue) and verna alba, white; Phlox decussata, varieties; Pyrethrum, double varieties; Ranunculus aconitifolius fl.-pl., white; Saxifraga granulata fl.-pl., white; Schizostylis coccinea, scarlet; Scilla nivalis, blue; Sisyrinchum grandiflorum, purple; Spiræa japonica, white; Statice latifolia, blue; Viola odorata Victoria Regina, violet; and Thalictrum adiantifolium, a good substitute for Maiden-hair Fern.—WESTON-SUPER-MARE.

1518.—**Hotbed Frames.**—I constructed a small hotbed as follows:—I bought a champagne case from the wine merchant's, cost 4d.; a Yorkshire pudding pan from the ironmonger's, 19 in. by 12½ in., cost 1s. 9d.; a sheet of tin 20 in. by 14 in., cost 6d. I had the tin soldered on to the top of the pan at a cost of 6d., with a small pipe attached for filling. This made me a shallow boiler, with a large heating surface. I knocked the top and bottom off the case, and fixed the pan to the bottom; I then elevated the box on two flower-pots on the floor of the greenhouse, and put underneath a benzoline lamp, which cost 1s., and covered the top with a sheet of glass, which cost only 5½d. I then filled the pan with hot water, corked the filling pipe, half filled the box with Cocoa-nut fibre, and lit the lamp. In twenty-four hours I filled the frame with cuttings in pots, and they appear to be doing well. I get a continuous bottom-heat of from 70° to 80°. The cost of the whole was 4s. 6½d., and I find that a pint of benzoline will last ninety-six hours. The lamp requires filling every twenty-four hours. The inside measure of the box is 21½ in. by 13½ in.—G. A.

1518.—**How to Make a Hotbed Frame.**—The most useful frames are those with two or three lights. The best size for them is as follows:—4 ft. wide, 8 ft. to 10 ft. long, and 15 in. to 20 in. in depth at the back, and 7 in. to 10 in. in the front. The wood should consist of well-planed deal, and the frame should be dovetailed together at the joints; the top should be tied together by two crosspieces 3 in. wide, which should be dovetailed one end into the back and the other into the front, and so placed that they will come exactly under where the lights meet each other. These crosspieces should have a kind of trench on the upper side, so as to draw off all the water from between the lights. At each end of the frames there should be a piece of wood ¾ in. thick and about 4 in. broad nailed on so as the upper edge will be level with the upper surface of light. The use of this is to exclude the cold winds which are apt to blow under the lights. The lights should be 4 ft. and 3 ft. 4 in. wide, and glazed with a strong 16 oz. sheet glass, which costs at the rate of twopence or threepence per square foot. The laps should not be puttied, but left open so as to admit the condensed moisture to escape. When complete the frame should be painted white inside and dark lead outside. Do not adopt the use of glue, as the damp and wet is sure to part it.—IGNORANT.

1536.—**Birds and Seeds.**—This appears a seasonable question, as the time for general sowing in the open ground draws near. Instead of dressing the seeds with any preparation, I would recommend sprinkling freshly-slaked lime over the seed-bed immediately after sowing—not a thick coating, but just enough to give the bed a white appearance. This the birds seem to dislike, and they will not alight on the white surface. The cost of such lime is trifling, and it only needs renewal in case of heavy rains washing all the lime into the soil; moreover, no soil will be injured by such an application, and all old garden soil will be improved thereby. Another plan is to drive several short pegs into the ground, around the sides of the bed, and to run white cotton across the bed from peg to peg at a few inches from the surface. This is rather more troublesome than the former plan, but it has the advantage of not requiring any renewal, and it generally keeps birds off the seed-bed, probably because they think it is some kind of trap. The first method I have never known to fail, and the second has failed with me only very seldom. For those not familiar with the article, it may be mentioned that fresh lime for gardening purposes should be kept, in some vessel as nearly air-tight as possible, in some cool place under cover.—C. L. J.

1590.—**Heating Small Greenhouses.**—I am about to erect a small greenhouse (10 ft. long), and should be glad to know the best and cheapest way of heating it by gas. Also has any reader tried Bateman's metal fires for this purpose?—J. C.

1503.—**Treatment of Dracænas.**—"H. M." may find the following useful for treating his plants. Take a thumb-pot, and roll the leaves up so as to put them through the hole at the bottom of the pot; or a pot may be broken in halves, and tied together after putting round the stem. The pot should be placed close under the remaining leaves on the stem; then fill the pot with Moss, and in a short time the stem will root. When the stem has a good root cut it off close to the bottom of the pot; in a short time a good table plant will be the result. The old stump will break again and make as good a plant as before. The Moss in the pot must not be kept too wet. The spring is the best time for the operation.—H. B.

1501.—**Steam in Forcing Frame.**—I beg to inform your correspondent that the excess of moisture of which he complains is caused by his burning the lamp with too large a flame. Ventilating the frame by tilting upwards the sash at the back, or by sliding it sideways, will enable him to remedy his difficulty should he again use too much heat. Should he be unable to regulate the temperature of the house in which is situated the frame, the lamp may with advantage be extinguished for five or six hours in the middle of a warm day.—A. WOODROFFE.

1473.—**Solanum or Winter Cherry.**—I successfully grew a large quantity of plants of S. capsicastrum last year, and have wintered between five and six dozen plants. I have cut back some to form bushy plants, and others I have trained for standards. I have a few with berries upon them of a large size. Those plants which I cut back about three weeks ago are breaking again very nicely, and all are and have been for all throughout the winter in very healthy condition. I keep them in a greenhouse and liberally supply them with water, the want of which, I have little doubt, has caused "H. B.'s" plants to drop their leaves. I would advise him to cut back his plants at once and plant them out-of-doors in a sunny situation when all danger of frosts are past, when if he sees they do not lack water, they will flower and berry there, and he can take them up again in September handsome plants for next winter's decoration.—J. L.

1524.—**Flower Seeds for Unheated House.**—Almost all kind of tender annuals may be raised without heat under glass, if sown in the months of March or April, as the sun is then powerful enough to germinate seeds freely. Such things as Cockscombs, Celosias, and Balsams make capital greenhouse pot plants; so also do Petunias, Mignonette, Stocks, and even Asters, if the latter are planted out into the open ground in May and lifted into pots just when coming into bloom. The dwarf double Larkspurs, Portulaccas, Godetia Lady Albemarle, Tagetes signata pumila, Phlox Drummondi, with a few ornamental Grasses, such as Brisa maxima, Agrostis nebulosa, Isolepsis gracilis, &c—these, if well grown, will serve to make a cool greenhouse very gay all through the summer and autumn.—A.

1567.—**Worms in Gardens.**—As a rule, worms do a beneficial work in gardens; they thoroughly aerate the soil, and considerably decompose it by passing much of it through their bodies. All worm-casts seen on lawns have been so digested and then exuded. Where so very abundant, however, they become a nuisance, and free dressings of fresh-slaked lime will destroy them wholesale, as also will dry, clean soot. The lime should, not be dressed too thickly; it is the minute particles of dust, so full of irritation, that, falling upon the worms, causes them to retire. Such dressings need to be frequently applied, and in the end will soon get rid of them. These dressing will do no harm to plants or Grass; even coarse salt may be used with great advantage on footpaths and amongst vegetables—of course sparingly.—A. D.

1563.—**Manure for Potatoes.**—Potatoes need a manure that is quick of action, and calculated to supply the special need of phosphates, as without these the quality of the tubers will be poor. Good guano or superphosphate guano are good artificial manures; wood ashes supply phosphates, but lack ammonia and other important compounds. With really good stable manure scarcely any other kind of dressing is needed, as it is not possible for the plants to take up more than a certain amount of nutriment. Artificial manures are most valuable when employed with Potatoes that succeed some other crop which has been previously manured. Dissolved bones make a good permanent manure, but it is hardly active enough for Potatoes. It would be invidious to name any special manure where so many are good; but last year we found one manufactured at Deptford to be the best for Potatoes we have ever employed.—A. D.

1504.—**Double Pyrethrums and Potentillas.**—Both double Pyrethrums and Potentillas would mix admirably with Pentstemons and Delphiniums, the latter being kept into the centre and the Pyrethrums next. Such perennials as those stated would help to make a striking bed for a long time, and might be added to with some of the best perennial Phloxes, as these present some of the grandest of border plants. A few Liliums of various kinds would intermix well. The soil of such bed should be trenched 30 in. deep, and be well manured before planting.—A. D.

1505.—**Tritelia uniflora.**—Bulbs of this plant that are mouldy are, no doubt, practically dead. Perhaps they have been too long exposed to air and have lost generative power. The best place for them is in the ground, as they will come up in the open ground from year to year as freely as will Snowdrops and Crocuses.—D.

1506.—**Apple Stocks.**—Apple stocks raised from the seed or pips of the best fruits are, as a rule, little better than Crab Apples, although just a few may in time produce fruit, but these will show fruit much sooner if grafted on to other stocks, as all Apples are. The stocks would make the foundation for good trees if they were cut back to within 6 in. of the ground about the end of March, and all grafted with scions from good sorts of Apple trees. In three years they would probably begin to produce fruit, and would fast grow into value. Without being grafted the stocks are little better than weeds.—D.

1567.—**Worms in Gardens.**—Hot lime will have the effect of getting the worms out of the ground. It should be used at the rate of 1 lb. to the gallon of water. Give the ground or Grass a good soaking with the liquid, when the worms will come out in numbers. They must be gathered and destroyed.—J. S.

1562.—**Flowers for Bouquets in June.**—Few flowers make up better for coat flowers than those of Phlox Drummondi. Obtain a good packet of seed, sow at once in a greenhouse. Bottom-heat is not requisite. When large enough to handle fill a quantity of 6-in. pots with a mixture of loam, leaf-mould, rotten manure in equal proportions, adding a good sprinkle of sand; then put five of the seedlings into each pot. A slight fumigating will be required, they being a little subject to green fly. By so doing you will not fail to produce a brilliant display of bloom by June next. A few plants of the Maiden-hair Fern would supply you with a background to make your button-holes upon.—J. S.

1569.—**Cropping a River Bank.**—Parsnips would do well upon such soil. Sow at once the Hollow-crowned variety. You may try the Long Surrey Carrot at the top of the bank. I should recommend Champion Potatoes for such a situation.—J. S.

1569.—**Cropping a River Bank.**—The best kind of Potatoes to grow on a river bank where the soil is heavy are Champion and Magnum Bonum—to plant others may result in disease and failure. Parsnips would do very well, but Carrots need a light, deep soil. Onions, Broad-Beans, and Runner Beans may do very well in such soil, as they prefer it rich and holding. Winter Greens, such as Savoy Cabbages, Scotch and Cottagers' Kale, and Sprouting Broccoli, may be planted to succeed any early crops.—A. D.

1579.—**Variegated Mesembryanthemum from Cuttings.**—Cuttings of the variegated Mesembryanthemum should be permitted to lie for a few hours after being taken off before being inserted in the cutting pots. A free warmth promotes quick rooting, and damp does no harm; the chief danger lies in heat that is too moderate, and does not induce rapid rooting and growth. The soil in which the cuttings are put should be composed largely of sharp silver sand. Shallow pans should be used, and the cuttings not too thickly inserted.—A.

1588.—**The Chimney Campanula** (C. pyramidalis).—Campanula pyramidalis is a fine plant for pot culture, but ofttimes in the open air it does only indifferently well. The side shoots should be taken off if possible with a small portion of root attached, potted out singly in small pots, and when large enough re-potted into 9-in. pots in which to bloom. These plants should have the protection of a cold frame through the winter to keep the leading crown from injury by frost. Grown liberally in good sized pots such plants should flower finely.—D.

1573.—**Pelargoniums Failing.**—Your Pelargoniums have been wrongly treated. They should have been cut down after blooming and allowed to break well before being rmoved to smaller pots. I cannot understand your shifting them again at Christmas into larger pots, they not having broken into growth. The temperature has been quite sufficient. I would advise you to cut them down entirely and remove them into smaller pots, and try plunging in heat if convenient.—J. S.

1576.—**Camellias Failing.**—I am not surprised at your Camellias falling; the temperature submitted to them, as you say 50° to 55°, is too high for them at least by 10°. Take off all the shrivelled buds, and keep the plants in the temperature they are now in, and syringe them freely every day until they have made new growth. When finished growing, gradually harden them in a lower temperature, placing them out-of-doors in June, returning them to a cool house early in October.—J. S.

1525.—**Creepers for Low Walls.**—The spring blooming kinds of Clematis are most valuable decorative climbers for a north wall, as they practically bloom in summer in such a position, and for a longer period. The summer kinds really then bloom in autumn. Everlasting Peas are useful; and for blooming just now one of the best is Jasminium nudiflorum. For foliage the broad-leaved Aristolochia, Virginian Creeper, and variegated Ivies are good, but these latter prefer to climb the brickwork.—D.

1526.—**French Perennial Phlox.**—Although perennial Phloxes will seed at times freely, the seed does not germinate readily, and it is necessary to exercise considerable patience. Seed might be sown now in pots or pans in a frame or greenhouse, and be allowed to stand, only kept just moist, until the seed germinates. Seedlings should bloom next year if grown on in good rich garden soil, the plants needing only common garden culture.—A.

1527.—**Gladiolus Brenchleyensis.**—Single bulbs of Gladiolus Brenchleyensis will bloom well if grown in 7-in. pots; in a less size the spikes will be poor. The soil should be composed of good yellow loam, with one-third of well-rotted manure, and a sprinkling of silver sand in it. Bury the bulbs about 2 in. They may be potted at once, and kept under glass until all danger from frost is past. Weak manure water will be of use during the summer.—A. D.

1528.—**Hybridised Pelargoniums.**—Pelargonium seed of all kinds may be sown at once in a shallow pan. It is a good rule to dibble in the seeds with regularity all over the pan, leaving the long tail exposed. Fix the seed firmly, and water gently, keeping the pans shaded during strong sunshine. The seed should germinate within three weeks, but it is uncertain whether the plants will bloom the same season. Some may, others may not; probably the majority will bloom late in the autumn.—D.

QUERIES.

1605.—**Vitality of Seeds.**—I am informed that seeds kept over from last spring will not germinate. To what extent, if at all, is this true of flower and vegetable seeds?—H.

1606.—**Propagating Hyacinths.**—Is it possible to propagate Hyacinths and other Dutch bulbs in this country? If so, how is it done? and how long do they take to reach perfection?—H.

1607.—**Treatment of Rhododendrons.**—I have planted a number of Rhododendrons on the bank of a pond sloping to the north-west. The soil is heavy, and, not having any peat available, I put some coal ashes in with each plant. Was this right? and is there anything more that I can do? Is it well to dig the ground round the plants, or to lay it down in Grass? What about pruning? My shrubs are only about 4 ft. high, but are very scraggy, the only foliage being on the ends of the stems.—H.

1608.—**Potatoes.**—What weight of Potatoes am I to reckon (for seed) to the square yard? or how much ground will 1 lb. sow?—A. L. S.

1609.—**Camellia Losing its Leaves.**—I have a Camellia which stood close to a wall all the autumn, and appeared to be very healthy and growing well, and had several buds upon it. After it was taken into a sitting-room, just as the buds were breaking and the colour of the flower could be seen, they turned quite brown, and eventually fall off. The leaves all this time looked green and well until about a fortnight ago, when one by one they began to turn brown at the edges and dropped off: the plant is now almost bare. What can I do to prevent it dying off entirely?—J. W. G.

1610.—**Salting Vegetable Ground.**—Will some one give me a list of vegatables to which salt is beneficial and prejudicial? How much salt can I put on ground where Beet, Turnips, Cabbage, Broccoli, Onions, Carrots, Lettuces, &c., are to be grown? I am planting my Potatoes between my Cabbage plants, as I planted my Cabbage plants between my Potatoes. If I sow 2 tons of salt to the acre for the Potatoes will it kill the Cabbage plants as well as the slugs? For the other crops (not Potatoes) would it better to sow with the seed, or to dig the salt under and then sow the seed? How much for each vegetable?—T. C. V. B.

1611.—**Manuring Potatoes.**—In your issue of Feb. 21, "A. L.," in writing of seed Potatoes, and manuring the same, says that "for home consumption" good soil with a liberal dressing of manure may answer, but for all main crops manure should be avoided." May not this statement be qualified somewhat, as it puzzles an amateur who has never seen Potatoes planted without manure?—TUBER.

1612.—**Propagating Virginian Creepers.**—When is the best time to put in cuttings of Virginian Creepers? I want to cover by means of wirework an unsightly view. I also want the names of a few fine-foliaged plants, about 8 in. high, for border with south-east aspect.—DARCOM.

1613.—**Climbing Annuals for Summer.**—I wish to have a show of climbing annuals for next summer in a south aspect. Could any one name best varieties—stating time and mode of raising, treatment, &c.?—PARASITE.

1614.—**Floury Potatoes.**—The soil of my garden is a cold clay loam; can any one inform me what kind of Potato I ought to plant to get a good crop of floury and sound tubers?—SUBSCRIBER.

1615.—**Plants in Vineries.**—Many thanks to "H." for his answer in reference to this subject. Will he or someone else please to tell me what temperature by day, also by night, will be best for the Vines? Likewise air and ventilation, as the buds are beginning to break. They are Black Hamburgh and White Sweetwater planted outside in a border 3 ft. wide, which has not been covered up. The temperature inside has ranged from 35° to 40° by night, and from 45° to 50. by day, giving air top or side according to the weather.—W. L.

1616.—**Winter and Spring Flowering Plants.**—What plants flower best in winter and early spring in a greenhouse where the temperature is never much below 45° at night?—S. G. W.

1617.—**Manure for Pot Roses.**—What quantity of guano must I put to a gallon of water for watering pot Roses? also how often must it be given them? Will bones burned and then crushed answer the same as bone dust?—CONSTANT READER.

1618.—**Cropping Poor Land.**—I have a piece of land on which Wheat was grown last season; it was pretty well manured last autumn, but I find on digging it that one part is better than the other, the poorer part being badly infested with Coltsfoot. I wish to grow Potatoes, Cabbage, Peas, Beans, Onions, Carrots, Turnips, Parsnips, &c., and would like information as to which of the above would be best suited to the part in which the Coltsfoot abounds; and also how to get rid of the latter. I am told that manure will kill it. Is this so? Also what kinds of Potatoes can be recommended for such soil; it is a stiff clayey bottom. Situation high and open.—NOVICE.

1619.—**Making Hard Water Soft.**—Can any of your correspondents kindly advise as to the best method of rendering hard water soft, so that it may not be so injurious to plants, &c.?—T. F.

1620.—**Impressions of Fern Fronds.**—Can any one tell me how to take impressions of fronds on paper?—NEPTUNE.

1621.—**Sparrows Eating Lawn Seeds.**—Could any reader tell me of some plan for preventing sparrows, &c., from eating lawn seed? I have tried a scarecrow of string, paper, &c., but have not succeeded in frightening them away. The only other method I can think of is to raise a large net on poles over the ground, but this is costly and troublesome business. Last year the seeds were devoured wholesale as fast as I sowed them. I should like to know of a simpler and thoroughly efficacious preventive.—A LAWN LOVER.

1622.—**Renovating Holly Hedges.**—The Holly hedge surrounding my garden, although it was impossible to see through it in the summer of 1878, is now almost bare of leaves, especially under the forest trees which shade it here and there, owing in a great measure to the last two severe winters. Can I renovate it by any means?—HOLLY BANK.

1623.—**Roses for North Yorkshire.**—I have a square bed, one side of which is against a wall where there is some climbing Roses. I propose making a border of Grass, 2 ft. wide all round, and planting it with Hybrid Perpetual Roses, surrounded with a row of dwarf Bourbons, and edged with a row of dwarf China Roses. What kind would suit the north-west Riding of Yorkshire? and would they need protection in winter?—NOVICE.

1624.—**Plants for Window Decoration.**—Will any reader oblige by giving a list of some of the best plants to grow for the above purpose? I have a small greenhouse to forward the plants before they come into bloom. Also a list of the most suitable for carpet bedding and edging.—J. S.

1625.—**Moles in Garden.**—Can any reader kindly give advice on getting rid of these tyrants? I have tried spring and wood traps without success.—C. C. G.

1626.—**Small Gardens near Town.**—Will any reader kindly suggest the most effective way to plant a small garden near town with a south aspect laid out in beds about 9 ft. by 4 ft.? and state what kinds of plants to be used, and how to arrange them?—AMATEUR.

1627.—**Treatment of Gladioli.**—How should I treat a quantity of Gladioli bulbs I have just bought? They are no larger than a small Crocus.—F. H. B. [Prepare a bed of deep, rich, light soil in a sunny position and plant the bulbs. Should they show flower-spikes it would be well to pinch them out. Lift the bulbs in autumn, when the tops lie down, and plant again next spring, and they should flower well in summer.]

1628.—**Cropping Wet Land.**—I have five acres of land, which during winter is usually flooded, also in summers such as the last. It is at present in Grass, but I am never sure of a crop of hay. What would you advise to crop it with?—DELTA. [You could not do better than plant Osiers and Willows.]

1629.—**Cleaning Garden Pots.**—*T. B.*—Thoroughly cleanse them with scrubbing-brush and water. It is a bad plan to paint them, as the roots of the plants suffer thereby.

1630.—**Hyacinth Flower-stems Rotting.**—*Lewis W.*—Your system of treatment appears to be proper, but probably the rotting is the result of potting too deeply. There should always be one-third of the bulb free of the soil. Try this plan another season.

1631.—**Begonia Rotting.**—A yellow-flowering Begonia rotted off early in the last summer. I am afraid I gave it too much water. A fine crimson-flowering kind also got nipped by the frost. I placed both in the greenhouse and gave no water all the winter; will they spring up again?—WILLING TO LEARN. [The former is probably past recovery, the other will probably send up shoots soon if not too severely injured by frost. Withhold water until shoots appear.]

1632.—**Climber for Greenhouse.**—*C. J. W.*—Maréchal Niel, Gloire de Dijon, or Devoniensis Roses would suit your purpose well, or Clematis Jackmanni, Clianthus puniceus, Fuchsia virgata, Cobæa scandens and various others.

1633.—**Ashes in Gardens.**—How can I best utilise a quantity of fine ashes in my garden? to what vegetables will they prove most beneficial? R. C. B. [If the ashes are from wood, they are beneficial to the soil for growing all kinds of vegetables. Coal ashes are not so useful except to mix with stiff soils so as to render them more porous].

1634.—**Fumaria bulbosa and Arum Dracunculus.**—Can any one inform me as to the treatment of Fumaria bulbosa and Arum Dracunculus? I bought some at an auction. I have looked in vain for description of habit, &c., in gardening works.—BUYER. [The plants mentioned above are known more generally under other names, viz., the former as Corydalis bulbosa, the latter Dracunculus vulgaris. They both thrive in the open border, and are perfectly hardy in a dry light soil.]

1635.—**Cyclamen and Primulas not Flowering.**—They were re-potted last autumn in good soil, have been kept in a sitting-room all the winter, and look healthy; what can be the reason of their having no blooms?—TILLY SLOW-BOY.

1636.—**Re-potting Begonias.**—*Tilly Slow-Boy.*—Your plants had better be re-potted during the next month.

1637.—**Ferns in Case.**—*Mrs. R.*—Most of the common small greenhouse Ferns thrive well in a closed case. They should not be kept too wet, and it will be beneficial to admit air for an hour or two daily so as to dry up superfluous moisture.

1638.—**Tomtits in the Garden.**—Last year I constructed a box about 8 in. long by 5 in. in width and depth, after the shape of a salt box, with a sloping lid to throw off the rain, and a hole at one end of the box 1½ in. in diameter; this I fastened in the branches of a Pear tree; I also secured some wire netting 18 in. wide round the stem of the tree 4 ft from the ground, for the purpose of keeping off cats. In due course a couple of tomtits built their nest in the box and reared a family. Yesterday I noticed a number of tomtits in the garden, which leads me to think that my last year's visitors are coming back to their old quarters. Would it be advisable to remove the bird-nest from the box or allow it to remain untouched?—S. M.

1639.—**Ivy Screens.**—I want to form some screens of Ivy, from 3 ft. to 6 ft. high, for a terrace exposed to the east, south, and west. Could I plant roots in wooden boxes with success by giving plenty of liquid manure? If so, what width and depth ought the boxes to be? Would the boxes answer if placed on the terrace, or should they be sunk (in stones)? Possibly by keeping the Ivy roots in the boxes, I might grow creeping Roses in soil placed near the boxes; if so, what sort of a hole should be made for the soil for the Roses?—G. H. B. [You can establish Ivy in boxes by placing in them some well-rooted plants and some good soil, and keep moderately moist. The plants will be established better and quicker if kept in a sheltered place for some time after being planted. The size of the boxes is quite immaterial provided they are not too small. Liquid manure will do more harm than good in such a case; it is only needed when the soil becomes exhausted and the boxes full of roots. It will be better to sink the boxes, as by this means the soil will be kept more moist and cool in summer. If you grow Roses near the Ivy, the roots of the latter should not be allowed to feed on the soil intended for the Roses].

1640.—**Marechal Niel Rose.**—I re-potted a plant of this Rose in December, and at that time the sap had begun to rise and small buds were appearing. Soon afterwards the buds died and now only the stalk remains. What would you advise me to do with it?—AMATOR FLORUM. [Do not disturb the roots again, but keep the plant under glass, and do not keep the soil too moist, and wait and see what effect the genial weather which will shortly come will have upon the plant].

1641.—**Roses in Towns.**—I have a few Rose trees that at one time thrived well in my open garden, but in consequence of the extension of the town, the smoke has killed all the standards. The dwarfs are still living, but not doing well, although carefully attended to. Could I overcome the difficulty of the smoke, and induce them to thrive again were I to put them in a small greenhouse—say half pit, half greenhouse—and either pot and plunge them, or plant in beds?—QUERO. [The smoke nuisance would probably be greatly obviated by growing the plants under glass, but they will never thrive so well as in an atmosphere free from smoke, as, of necessity, the plants being hardy will require a large amount of ventilation. If placed under glass, the best way is to plant in a bed of good soil, as they then succeed better, and require less attention than when grown in pots.]

1642.—**Culture of the Bullace Damson.**—*Profit.*—The above fruit would no doubt be produced abundantly in favourable seasons in such a soil in your locality. It can be obtained at any of the large fruit tree nurseries. The Strawberries, Sir Joseph Paxton, Keen's Seedling, Sir Charles Napier, are all good kinds, and would suit your purpose well.

1643.—**Raising Seeds in Rooms.**—*F. S.*—The plan you intend to adopt will, we fear, be a failure. If the seeds do germinate the plants will be so weak and drawn that they will never make good plants when planted out. If you have no convenience to sow under glass in a gentle bottom heat, wait a little longer until the weather becomes warmer, and then you can raise strong seedlings which will be nearly as forward as an earlier sown batch.

1644.—**Orange Tree Culture.**—I shall be glad to know how to proceed in the cultivation of a dozen Orange trees raised last summer from seeds. They are now 3 in. or 4 in. high, with three or four leaves on them. They have been raised in pots in garden soil under inverted

tumblers; no growth has taken place for many weeks. How high, and when should these plants be grafted?—J. C. [The Orange tree requires a greenhouse temperature, but it may be grown successfully in a dwelling-room provided the leaves of the plants are kept quite clean from dust, &c. They require to be potted in a mixture of loam with a little sand and decayed manure. The pots should be not unproportionately large to the size of the plants, and they should at no time be kept too moist at the roots. Grafting Orange trees is a precarious operation unless practised by some one who thoroughly understands it and is an expert. Besides, if the plants in question have been raised from pips of ordinary Oranges, they do not require grafting.]

1645.—**Culture of Egg Plants.**—*R. D.*—The seeds of this plant should be sown in spring; they require to be grown in a mixture of turfy loam and a little sand and decayed manure.

1646.—**Spiræa japonica.**—*R. D.*—You may safely divide your plants for the purpose of propagation. It may be done any time before the summer.

1647.—**Magnum Bonum Potatoe.**—I have some very large sets of these Potatoes; is it best to cut them now, or wait till I plant them?—A. K. [You had better cut them into the necessary portions now, as they are less likely to rot.]

1648.—**Artificial Manures.**—What is the best kind of prepared manures to use for Roses, Geraniums, Fuchsias, Hydrangeas, and Lilies?—F. A. W.—[Try Amies' Manure or Clay's Fertiliser (see advertising columns).]

1649.—**Lobelias for Bedding.**—Which are the best dwarf Lobelias for bedding? I have L. erinus speciosa and Blue Beauty.—L. [Add to these Blue Stone, White Perfection, Brighton, Ebor, and Defiance.]

1650.—**The Culture of the Hoya.**—This plant requires the temperature of a stove or warm greenhouse, in order to induce it to flower freely. It requires similar treatment as that of ordinary pot plants, except that it does not need so much water, especially during winter.

1651.—**Treatment of Roses Under Glass.**—I have a small conservatory in which I want to grow Roses. Could you give me a few hints on their general management? [Plant them out or pot them in good soil (not too sandy), as near to the glass as possible. Give them copious waterings in the summer and frequent syringings. Keep them perfectly free from insect pests by fumigating, &c. Give plenty of ventilation in fine weather, especially during summer. Prune the shoots well back every autumn, and, if necessary, give a coating of compost on the stem, so as to eradicate scale, &c.]

1652.—**Stable Manure for Hotbeds.**—Will you inform me what condition stable manure should be in to form a hotbed? Last year I used that which had been at the bottom of the pit and was quite rotten and hot when put into the frame, but it became cold in a few days. Is it better to use it fresh from the stable? or is one cart-load too small in quantity to retain the heat?—*E. G., Hull.* [It is best to use fresh manure, *i.e.*, that in which the straw is not much decayed. The fermentation then goes on for some considerable time, and the heat is retained, whereas in old and too much decayed material the heat is soon dispelled. A waggon-load will make a fair-sized bed, and ample for ordinary purposes.

1653.—**Culture of Hardy Flowers.**—Spiræa filipendula and palmata, Veronica incana, and Tradescantia purpurea will all thrive well in any soil in the open border. The last named is more tender than the others, and should have the most protected spot.

1654.—**Happy Thought Geranium.**—I have one of these which I am afraid will die: it was cut down in the autumn, and since then it has only produced sickly yellow shoots, which grow about 2 in. and then damp or fade off. Can I do anything to save it?—GLADIOLUS. [Put it in a light airy position, and water sparingly.]

1655.—**Cucumbers on Old Hotbed.**—I have just made up a hotbed in a frame for raising various seeds; would a Cucumber grow on it during the summer after the seeds are taken out? I do not want to grow the hardy ridge, but a frame Cucumber. Is there any chance of success?—GLADIOLUS. [A frame Cucumber, such as Hedsor Prolific or Lord Kenyon's Favourite, would do well in such a position.]

1656.—**Transplanting Parsley.**—I have in my garden two rows of Parsley plants which have survived the winter. As I cannot let them remain where they are, could they be transplanted with any chance of success?—NOVICE. [They would succeed if transplanted, but would be liable to run to seed should dry weather set in.]

1657.—**Bottom-heat for Seeds.**—Having adopted one of the modes of starting seeds by means of a lamp and hot-water tin mentioned in GARDENING, I shall be glad to know whether I should take the seeds out of the heat as soon as they have started. I may mention the temperature of my greenhouse is about 45°.—MARK. [When well up reduce the heat by lowering the lamp; finally take them out altogether, and place on the greenhouse shelves. Something depends on what seeds they are.]

1658.—**Potato Planting in Town Garden.**—I am making a rockery across the lower end of my garden for Ferns, &c.; the slope at the back of it I think of planting with Potatoes; shall I do so with any chance of success, the space at disposal being 16 ft. by 8 ft., soil rather heavy and retentive, aspect south but partly shaded on south side by a 6-ft. wall? If advisable, what kind will be best? and when shall I plant?—J. G. S. [You might possibly get a fair crop, but it is rather doubtful. Try the Early Ashleaf. Plant early in April.]

1659.—**Leaves Falling off India-rubber Plant.**—What is the matter with an India-rubber plant, the leaves of which are the enclosed? It was taken from the greenhouse into a hall, where it was exposed to gas and draughts, and when it remained a couple of months or longer. Just before Christmas it was returned to the conservatory, and ever since has been growing worse. It is a large plant, but has now not a single healthy leaf. Should it be cut down? if so, how must it be treated? or what shall be done with it?—WYBORNE GATE, *Southport.* [The reason of the leaves falling off the India-rubber plant is its being exposed to gas by night and cold air by day. You had better cut the plant down and place it in a warm house, and it will soon push up new growth. If the stem be cut into segments and put into a hotbed, a stock of young plants may be got.]

1660.—**Cucumbers and Melons in Small Greenhouse.**—I have built a lean-to greenhouse, 8 ft. long by 6 ft. wide, against the end of my house, with a glass roof and front. It faces south, and will receive full force of sun from sunrise until about 6 p.m. during summer. Can I grow Cucumbers and Melons in such a house without the aid of fire-heat? If so, what are the most suitable sorts, the best time to plant, and with what materials should the bed be prepared for them? Also what fruit tree will do best against the back wall, the height of which is 9 ft.? Will the heat from a small stove with fire-box about 1 ft. square be beneficial to the plants during nighttime if placed inside the house?—P. F. J. [Cucumbers or Melons might be grown in summer in such a house separately, but together we fear you would not succeed very well. The Cucumbers would need a slight shade from direct sunshine; Melons could not have too much sun. The soil may be put in mounds on a platform of planks in front of the house, and the plants be trained under the roof on wires. The soil for Cucumbers should be light and rich, and that for Melons rather stiff and poor. The Telegraph is the best Cucumber, and Victory of Bath is an excellent Melon.]

1661.—**Treatment of Fine-foliaged Begonias.**—I have a Begonia which has been doing well in a room without fire during the whole of the winter. It is apparently growing out of the pot. Should it be divided? if so, how? what soil is required? and the best time for doing it? [If not convenient to give the plant a larger pot, cut it through the middle with a sharp knife, leaving strong stems on each piece, of course. Soil, peat or good sandy loam and leaf-mould.]

1662.—**Potting the India-rubber Plant.**—I have a large India-rubber plant; in what kind of soil shall I repot it? does it require much water? would liquid manure assist its growth?—B. G. F. [Almost any open soil will do. Chopped turf or peat with sand and leaf-mould or rotted manure added will grow it well. When the pot is full of roots, liquid manure will be an advantage. When in active growth the plant needs plenty of water.]

1663.—**Sowing Seakale.**—Which is the best time to sow Seakale seed? and will the roots be strong enough for forcing next spring?—J. M. [Sow at once in rich soil; thin out the plants if too thick. Keep the surface of the soil frequently stirred with the hoe during summer, and give liberal supplies of manure water during dry weather. Some of the largest roots might do for forcing in spring, but by rights they should have another year.]

Yearly Volume of "Gardening Illustrated."—*J. W. G.*—The bound yearly volume will shortly be ready.

Measurement of Flower-pots.—*J. S.*—The diameter is measured across the top of the pots.

Pomegranate.—*F. W.*—You can procure this plant from any of the large nurseries in London; the present is the best time to obtain it.

Botanical Names.—*F. A. M.*—The name of the Aaron's Beard is Spiræa aruncus, that of Stag's-horn Moss Lycopodium clavatum. The former will thrive in any soil in the open air. The latter, though a native plant, is somewhat difficult to manage under culture. The conditions under which it is found wild should be imitated as near as possible.

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REGISTERED FOR TRANSMISSION ABROAD.

GROWING ALPINE AND ROCK PLANTS.

THERE is no class of plants which affords the amateur cultivator more interest and pleasure than a good and well arranged selection of what are called alpine plants. Even in the smallest gardens they may be grown if care be taken at planting; yet we seldom see a rockwork planted with alpine flowers in either large or small gardens worthy of the name of a rockery. There are many places in which a sort of sloping stone or burr wall passes as "rockwork," a dust of soil being shaken in between the stones, and the whole so arranged that if you do cover it with suitable plants they perish speedily. In others, made upon a better plan as regards the base, the "rocks" are all stuck up on their ends, and so close that soil, or room for a plant to root, is out of the question. The best thing that usually happens to a structure of this sort is that its nakedness gets covered by a Cotoneaster, or some friendly climbing shrub, or some rampant weed, of course to the exclusion of true rock-plants; but in most cases the attempted rockwork is a standing eyesore.

A TUFT OF ALPINE AND ROCK PLANTS.

Although hundreds of brilliant alpine flowers may be grown without a particle of rock near them, yet the slight elevation given by rockwork is very congenial to numbers of the most valuable kinds. A tastefully disposed rock-garden furnishes a home for many pretty native and other interesting plants which may not safely be put elsewhere; and therefore it is important that the most essential principle to be borne in mind when making it should be generally known. The chief mistake generally made is that of not providing a feeding-place for the roots of the plants that are to embellish the rockwork. On ordinary rockwork even the coarsest British weeds cannot find a resting-place, simply because there is no body of soil or matter into which the descending roots can penetrate and find nourishment sufficient to keep the plant fresh and bright and well in all weathers.

The position selected for the rockery should never be near walls; never very near a house; never, if possible, within

view of formal surroundings of any kind. It should generally be in an open situation; and of course a diversified spot, or one with bold prominences should be selected, if available. No effort should be spared to make all the surroundings and every point visible from the rockwork as graceful, quiet, and natural as they can be made. The part of the gardens around the rockwork should be picturesque, and in any case display a careless wildness resulting from the naturalisation of beautiful hardy herbaceous plants, and the absence of formal walks, beds, &c. No tree should occur in or very near the rock-garden; hence a site should not be selected where it would be necessary to remove valuable or favourite specimens. The roots of trees would be almost sure to find their way into the masses of good soil provided for the choicer alpines, and thoroughly exhaust them. In small places, and in those where from unavoidable circumstances the rock-garden is made near a group of trees, the roots of which might rob it, it would be a good plan to cut them off by a narrow drain, descending as deep as, or somewhat deeper than, the roots of the trees; this should be filled with rough concrete, and it will form an effectual barrier.

Materials for a Rockery.

As regards the kinds of stone to be used, if one could choose, sandstone or millstone grit would perhaps be the best; but it is seldom that a choice can be made, and happily almost any kind of stone will do, from Kentish rag to limestone; soft, slaty, and other kinds liable to crumble

Corner of a ledge of Rock covered with Alpine Flowers.

away should be avoided, as also should magnesian limestone. It can hardly be necessary to add that the stone of the neighbourhood, if not very unsuitable, should be adopted for economy's sake, if for no other reason. No burrs, clinkers, portions of old arches and pillars, broken-nosed statues, &c., should ever obtain a place in a garden devoted to alpine flowers. Stumps and pieces of old trees are quite as objectionable as any of the foregoing materials; they are only fitted to form supports for rough climbers, and it is rarely worth while incurring any expense in removing or arranging them. Begin without attempting too much. Let your earliest attempts be confined to a few square yards of earth, with no protuberance more than a yard or so high. Be satisfied that you succeed perfectly with that before you try anything more ambitious. Never let any part of the rock-garden appear as if it had been shot out of a cart. The rocks should all have their bases buried in the ground, and the seams should not be visible: whenever a vertical or oblique seam of any kind occurs it should be crammed with earth, and the plants put in this will quickly hide the seams. Horizontal fissures should be avoided as much as possible; they are only likely to occur in vertical faces of rocks, and these should be avoided except where distant effect is sought. No vacuum should exist beneath the surface of the soil or surface-stones. In all cases where elevations of any kind are to be formed, the true way is to obtain them by means of a mass of soil suitable to the plants, putting a rock in here and there as the work proceeds; frequently it would be desirable to make these mounds of earth without any strata or "crags." The wrong and the usual way is to get the desired elevation by piling up masses of rock.

No formal walk—that is to say, no walk with regularly-trimmed edges of any kind—should ever be allowed to pass through, or even come near, the rock-garden. This need not prevent the presence of properly-made walks through or near it, as, by allowing the edges of the walk to be a little irregular and stony, and by permitting dwarf Sedums, Saxifrages, Linaria alpina, the

Alpine Plant on Border, surrounded by half-buried stones.

lawn Pearl-wort, etc., to crawl into the walk at will, a perfectly unobjectionable effect will be produced. In every case where gravel walks pass through ferneries or rockeries, and are fringed by stonework, a variety of little plants should be placed at the sides, and allowed to crawl into the walk in their own wild way. There is no surface whatever of this kind that may not be thus embellished with interesting subjects. Violets, Ferns, and the early Forget-me-not (Myosotis dissitiflora), &c., will answer best for the moister and shadier parts; while the Stonecrops, Saxifrages, Arenarias, and many others, will thrive in more arid parts and in the full sun. The whole of the surface of the Alpine garden should be covered with plants, except the projecting points or crags; and even these should be covered, as far as possible, without completely concealing them. In moist districts, such Alpines as Erinus alpinus and Arenaria balearica will grow wherever there is a resting-place for a seed on the face of the rocks; and even tall and vertical faces of rock may be embellished with a variety of plants; so that there is no reason whatever why any level surfaces of ground should be bare.

In no case should regular steps be permitted in or near the rock-garden. Steps may be made quite irregular, and not only not offensive to the eye, but very beautiful, with Violets and other small plants jutting from every crevice. No cement should be used in connection with the steps. The engraving on page 16 shows very imperfectly—no engraving could show it otherwise—the crowds of lovely plants that gather over it, except where worn bare by feet, thriving year by year as freely as they do on the most favoured spots in the Alps. In cases where the simplest type of rockwork only is attempted, and where there are no steps or rude walks in the rock-garden, the very fringes of the gravel walks may be gracefully enlivened by allowing such plants as the dwarfer Sedums to become established in them. The Alpine Linaria is never more beautiful than when self-sown in a gravel walk. It must not, however, be supposed that heaps of stones or small rocks are absolutely necessary for the health of alpine plants. The great majority will thrive without their aid if the soil be suitable; and though all are benefited by them, if properly used as described, it is important that it should be generally known how needless is the common system of inserting mountain plants among loose stones, burrs, &c. Half-burying rocks or stones in the earth round a rare species, which it is intended to save from excessive evaporation, and which has a deep body of soil to root into, is, however, quite a different and an excellent practice.

Soil.—The great majority of alpine plants thrive best in deep soil. In it they can root deeply, and when once they are so rooted they will not suffer from drought, from which they would quickly perish if planted in the usual way. Three feet deep is not too much for most species, and it is in nearly all cases a good plan to have plenty of broken sandstone or grit mixed with the soil. Any good free loam, with plenty of sand, broken grit, etc., will be found to suit the great majority of alpine and dwarf herbaceous plants. But peat is required by some, as, for example, various small and brilliant rock-plants like the Menziesias, the Wood Lily (Trillium), Lady's Slipper (Cypripedium), and a number of other mountain and bog plants. Hence, though the general mass may be of the soil above described, it will be desirable to have a few masses of peat here and there. This is better than forming all the ground of good loam and then digging holes in it for the reception of small masses of peat. The soil of one or more portions might also be chalky or calcareous, for the sake of plants that are known to thrive best on such formations, as the pretty Polygala calcarea, the Bee Orchis, Rhododendron Chamæcistus, etc. Any other varieties of soil specially required by individual kinds can be given as they are planted.

In the construction and planting of every kind of rockwork, it should be distinctly remembered that every surface may and should be embellished with beautiful plants. Not alone on rocks or slopes, or favourable ledges, or chinks, or miniature valleys, should we see this kind of exquisite plant life. Numbers of rare mountain species will thrive on the less trodden parts of footways; others, like the two-flowered Violet, seem to thrive best of all in the fissures between the rude steps of the rockwork; many dwarf succulents delight in gravel and the hardest soil, and numerous other plants will run wild in any wood or among low shrubs near the rock-garden.

Miniature Rock-gardens.

Hitherto we have considered the rock-garden on a somewhat extensive scale. As those who can afford this are less likely to want instruction than the much greater numbers who cannot, we now treat of successful modes of growing alpine flowers which may be carried out in the smallest gardens at a trifling expense. A well-arranged and well-planted alpine garden is somewhat costly, even where materials are easily obtained, and, moreover, requires much labour, skill, patience, and knowledge of plants to keep it in a perennially interesting condition. Local conditions, want of suitable materials, want of knowledge, and consequent want of interest in the plants, must, in many cases, prevent this most interesting phase of gardening from being enjoyed. I am therefore the more desirous to help the smaller and humbler attempts of those who cannot afford more than a very small patch of alpine garden, as well as to assist beginners of every class.

One of the simplest of all ways of cultivating alpine beds is in small rocky beds, arranged on the turf of some parts of the garden cut off by trees or shrubs from the ordinary flower-beds, without any of the pretensions of the ordinary rockwork; one of these will give much greater satisfaction than many a pretentious "rockwork," and by the exercise of a very little judgment is readily constructed so as not to offend the nicest taste. I once induced the owner of a garden in the northern suburbs of London to procure a small collection of alpines and try them in this way, and the result was so charming that a few words as to how it was attained may be useful.

A little bed was dug out in the clay soil to the depth of 2 ft., and a drain run from it to an

A large half-buried stone surrounded by Alpine Plants.

outlet near at hand; the bed was filled with fine sandy peat and a little loam and leaf-mould, and, when nearly full, worn stones of different sizes were placed around the margin, so as to raise the bed on an average 1 ft. or so above the turf. More soil was then put in, and a few rough slabs, arranged so as to crop out from the soil in the centre, completed the preparation for the neater Sedums and Sempervivums, such Saxifrages as S. cœsia and S. Rocheliana, such Dianthuses as D. alpinus and D. petræus, Mountain Forget-me-nots, Gentians, little spring bulbs, Hepatica angulosa, etc. They were planted, the finer and rarer things getting the best positions, and, when finished, the bed

looked a nest of small rocks and alpine flowers. In about eight weeks the plants had become established, and the bed looked quite gay from a dozen plants of Calandria umbellata that had been planted on the little prominences flowering profusely. This made the arrangement equal to one of bedding plants from the "effective" point of view. Another was made in the same manner, with more loam, however, and planted with subjects as different from those in the other bed as could be got, confining them, however, to the choicest alpines, except on the outer side of the largest stones of the margin, where such plants as Campanula carpatica bicolor were planted with the best results.

The only attention these beds required after planting was to keep a free-growing species from overrunning a subject like Gentiana verna, to water the beds well in hot weather—to keep them in fact thoroughly moist—and to remove even the smallest weeds. With the exception of the exquisite Gentiana bavarica, every alpine plant grew well, and the beds presented fresh floral interest every week from the dawn of spring till late in autumn.

The preceding plan can be carried out in the very smallest places. The following is quite as easily adopted on the fringe of any shrubbery. An open, slightly elevated, and, if possible, quite isolated spot should be chosen, and a small rock-garden so arranged as to appear as if naturally cropping out of the shrubbery. With a few cart-loads of stones and earth excellent effects may be produced in this way. The following illustration well explains my meaning; it represents an irregularly sloping border, with a few mossy bits of rock peeping from a swarming carpet of Sandworts, Mountain-pinks, Rock-cresses, Sedums and Saxifrages, Arabises and Aubrietias, with a little company of fern-fronds sheltered in the low fringe of shrub behind the mossy stones.

Having determined on the position of the bed, the next thing to do is to excavate the ground to a depth of 2 feet, or thereabouts, and to run a drain from it if very wet. If not, it is better let alone, as a good deal of the success depends upon the beds being continually moist; and in dry soils, instead of draining, it would be better to put in a substratum of spongy peat, so as to retain moisture for the stony matter that the cavity is to be filled with. As to soil, rock-plants are found in all sorts; but a good turfy loam, with plenty of silver or river sand added, will be found to suit a greater number of kinds than any other. The compost should be of a somewhat spongy character, and if not naturally so, it should be so made by the addition of well decomposed leaf-mould, cocoa-nut fibre, or, failing these, peat. If the trees of the shrubbery are of a nature likely to send their roots into the mass of good compost prepared for the rock-plants, it will be desirable to dig a narrow drain as deep as their lowest roots, and fill it with concrete to the surface; this will prevent the alpine plants from being starved by their more vigorous neighbours.

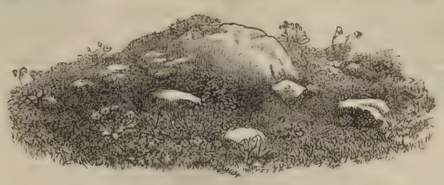
With the soil should be incorporated the smallest and least useful stones and débris among those collected for the work, so that the plants to adorn the surface may send down their roots through the mixture of earth and stone, and revel in it. When this is well and firmly done, the larger stones may be placed—half in the earth as a rule, and on their broadest side, so that the mass, when completed, may be perfectly firm. Have nothing to do with tree roots or stumps in work of this kind; they crumble away, and are at best a nuisance and a disfigurement to a garden. The intervening spaces may then be filled up, half with the compost and half with the stony matter, and the smaller blocks placed in position—the whole being made as tastefully diversified as may seem desirable, taking the size of the structure into consideration. When finished, it should look like a bit of rocky ground, stones of different shapes protruding—here a straight-sided one, under the lee of which a shade-loving plant may flourish; there two in juxtaposition, between which a cliff alpine may find a place. Two or three feet will as a rule be high enough for the highest points of rocky fringes of this sort, though the plan admits of considerable variation, and it may be tastefully made twice or thrice as high.

Alpine Plants on Window Sills.

We will next consider the case of the owners of those limited sites for gardens—window sills. On these numbers of diminutive and interesting alpine plants may be easily grown. My first proposal is to pick out some of the prettiest and most diverse of the Stonecrops, Sempervivums, silvery Saxifrages, etc., to plant them in a goodly sized box, and use a few rough stones by way of miniature rocks. I would place the box or boxes in the full sun, and give them plenty of water

Alpine Plants on level ground.

from a rose in warm spring and summer weather, and, indeed, at all times when they are dry, which is not likely to occur often during the dull months of winter. Among and between the alpine plants I would in autumn place here and there a diminutive spring-flowering bulb—say Bulbocodium vernum, Scilla sibirica, and S. bifolia, small Daffodils, Snowdrops, Snowflakes;



Small rocky bed of Alpine Flowers.

and, if the box be large, a few of the delicately coloured Crocuses. The boxes should never be taken indoors, except for re-arrangement. When the snow comes the plants are comfortable, as it is their natural protection in a wild state; frost or rain hurts them not, and even London smoke is not able to destroy their little lives if they are well attended to. The boxes most suitable for this purpose are wooden ones, with zinc troughs, decorated externally with chippings of Oak and Apple trees, Fir cones, etc.; or what may be called architectural boxes, of wood also, but painted stone-colour externally, and designed so as to suit buildings, which the rustic ones do not. Both these kinds of boxes are made in good form by various firms in London and elsewhere. No matter what pattern is adopted, it is desirable to allow some plants of a trailing habit to fall over its outer edge. If the outer margins of the boxes were well covered, it would matter little what form were used. The common Stonecrop, Sedum Sieboldi, Thymus lanuginosus, the woolly-leaved Cerastiums, and many other hardy plants will do this effectively.

A yet more satisfactory window rock-garden can be made outside of a window to which light has free access, by forming a miniature alpine garden on the sill. It is done by simply putting a few irregular stones along the front margin, and packing a few small bits of turfy peat or loam inside them to prevent the fine soil, afterwards to be added, from being washed out. Then fill in the hollow with sandy loam, mixed, if convenient, with morsels of broken sandstone. A few mossy or ancient-looking stones should be half-buried on the upper surface, and then the whole should be planted, the best time to do this being in April. It is not merely possible to keep alpine succulents in this way: it is easy to grow a multitude of the most interesting and beautiful kinds. I never in garden or wild saw these plants in better health, or looking more at home, than on the outside of a low sunny window in Mr. Peter Barr's house at Tooting. The accompanying figure shows a view of this from the interior; it was no less pretty seen from without. It is, however, impossible to show in an engraving the exquisite effect of the Liliputian succulents. The attention required is very trifling: some little taste in forming and planting, a judicious selection of plants, and thorough waterings through the dry season. I need hardly add that small and brilliant-flowering spring bulbs might be employed to light up this tiny garden in spring as well as that previously mentioned. It would also be desirable to plant subjects of a drooping character on the outer margin. The alpine succulents are all thoroughly hardy, and would remain in good condition during the winter, but a little changing and re-planting every spring would be very desirable.

Alpine Garden on window sill.

Planting.—There is a mischievous way of planting almost every kind of small plant, which is very injurious in the case of hardy Orchids (the roots of which are easily injured) and of all rare hardy plants. I refer to the practice of making a hole for the plant, and after a little soil has been shaken over the roots, pressing heavily with the fingers over the roots and near the neck of the unfortunate subject. What is meant will be understood from fig 2, if the reader assumes that there is a little soil between the fingers and the roots. Where the roots are not all broken off in this way, many of them are mutilated, or those near the collar of the plant are thrust deeper into the earth. Not unfrequently plants perish from this cause. The right way, after preparing the ground, is to make it firm and level, and then make a little cut or trench. The side of this trench should be firm and smooth, and the plant placed against

Planting Alpine and other Plants.

it, the roots spread out, and the neck of the plant set just at the proper level, as in fig. 1. Then a good deal of the fine earth of the little trench is to be thrown against the roots, and as much lateral pressure applied as may be necessary to make the whole quite firm. Once the subject is carefully planted, as much surface-pressure as you like may be given. In this way not a fibre of the most fragile plant will be injured. This, of course, only applies to subjects not planted with balls, and is the best way to plant them.

Selections of Alpine or Rock Plants for Various Purposes.

Dwarf Alpine or Rock-plants that will Thrive in Ordinary Soil on the Level Ground.

Acæna microphylla
Acantholimon glumaceum
Achillea tomentosa
  umbellata
Adonis vernalis
Æthionema cordifolium
Ajuga genevensis
Alyssum montanum
  saxitile
  spinosum
Anemone alba
  angulosa
  appennina
  blanda
  conoraria
  fulgens
  hepatica
  palmata
  pavonina
  Pulsatilla
  ranunculoides
  stellata
  sulphurea
  sylvestris
  trifolia
Antennaria dioica
Anthyllis montana
Antirrhinum rupestre
Aquilegia cærulea
  glandulosa
Arabis albida
  petræa
Arenaria laricifolia
  montana
  purpurascens
  verna
Armeria cephalotes
Artemisia frigida
Aster alpinus
  Reevesi
  versicolor
Astragalus hypoglottis
  monspessulanus
Aubrietias (all)
Bellium (dry soil), in variety
Bulbocodium vernum
Campanula alpina
  cæspitosa
  carpatica
  fragilis
  pulla
  Raineri
  turbinata, and nearly all the kinds
Cerastium, in variety
Convolvulus lineatus
  Soldanella
Cornus canadensis
Coronilla iberica
  minima
  montana
  varia
Corydalis lutea
  nobilis
  solida
Crocus Imperati
  nudiflorus
  Orphanidis
  reticulatus
  speciosus, and many other fine species and varieties
Cyclamen europæum
  hederæfolium
Daphne Cneorum
Dianthus alpinus
  cæsius
  deltoides
  dentosus
  neglectus
  petræus
  superbus, and many other species and varieties
Dielytra eximia
Diotis maritima
Dodecatheon integrifolium
  Jeffreyanum
  Meadia
Dracocephalum austriacum grandiflorum
  Ruyschianum
Dryas Drummondi
  octopetala
Erica carnea
Erodium macradenum
  Manescavi
  petræum
  romanum
Erysimum ochroleucum
Erythronium Dens-canis
Picaria grandiflora
Fumaria bulbosa
Galanthus plicatus
Gaultheria procumbens
Genista sagittalis
Gentiana acaulis
  Andrewsi
  asclepiadea
Geranium argenteum
  cinereum
  lancastriense
Globularia nudicaulis
  trichosantha
Gypsophila, in variety
Helianthemum, in variety
Helichrysum arenarium
Hippocrepis comosa
Hutchinsia alpina
Hyacinthus amethystinus
Iberis corifolia
  correæfolia
  gibraltarica
  sempervirens
Iberis Tenoreana
Iris cristata
  nudicaulis
  pumila
  reticulata
Isopyrum thalictroides
Jasione perennis
Jeffersonia diphylla
Leucojum vernum
Leiophyllum buxifolium
Linaria alpina
Linum alpinum
  arboreum
  campanulatum
  narbonnense
  perenne
Lithospermum prostratum and others
Lychnis Lagascæ
  Viscaria
Melittis Melissophyllum
Mertensia virginica
Muscaria, in variety
Myosotis alpestris
  dissitiflora
  sylvatica
Narcissus Bulbocodium
  juncifolius
  minor
  triandrus, and any other kinds
Nierembergia rivularis
Œnothera, all the dwarf kinds
Omphalodes Luciliæ
  verna
Ononis, in variety
Onosma taurica
Orobus cyaneus
  flaccidus
  variegatus
Orobus vernus, and many others
Oxalis Bowei
  floribunda, and various others
Papaver nudicaule
Paradisia liliastrum
Pelargonium Endlicherianum
Pentstemon glaber
  procerus
  Scouleri, and other dwarf kinds
Phlox divaricata
  reptans
  subulata, and any other dwarf varieties
Plumbago Larpentæ
Polygonum vaccinifolium
Potentilla alpestris
  nitida
  pyrenaica
  verna, and all choice dwarf kinds
Primula altaica
  Auricula, in variety
  cortusoides
  ,, amœna
  marginata
  Palinuri
  viscosa
  vulgaris, fl.-pl.
Prunella grandiflora
Puschkinia scilloides
Pyrethrum alpinum
Ranunculus aconitifolius
  amplexicaulis
  gramineus
  montanus
  parnassifolius
Sagina glabra
Sanguinaria canadensis
Santolina alpina
  incana
Saponaria cæspitosa
  ocymoides
Saxifraga, nearly all the kinds
Scabiosa graminifolia
  Parnassiæ
Scilla amœna
Scilla bifolia
  italica
  sibirica, and any hardy kinds
Scutellaria alpina
Sedum, any of the numerous kinds
Sempervivum, any of the numerous hardy kinds
Senecio argenteus
Silene acaulis
  alpestris
  Elisabethæ
  Pumilio
  Schafta
Sisyrinchium grandiflorum
Smilacina bifolia
Statice oleæfolia
  tatarica, and all dwarf kinds
Sternbergia lutea
Symphyandra pendula
Thalictrum anemonoides
Thlaspi latifolium
Thymus, in variety
Triteleia uniflora
Tunica saxifraga
Veronica candida
  prostrata
  saxitilis
  taurica, and any dwarf kinds
Vesicaria utriculata
Vicia argentea
Vinca herbacea
Viola altaica
  calcarata
  cornuta
  lutea
  odorata
  pedata
Viola tricolor, and many others
Vittadenia triloba (dry soil)
Waldsteinia trifolia
Zapania nodiflora
Zauschneria californica
Zephyrantes Atamasco
Zietenia lavandulæfolia

Rude steps mossed over with Alpine flowers.

Alpine Plants that will grow well in and near Cities.

Acantholimon glumaceum
Alyssum saxatile
Anemone apennina
  blanda
  fulgens
Anthyllis montana
Aquilegia alpina
  cærulea
Arabis albida
Armeria vulgaris-rosea
  cephalotes
Aster versicolor
Aubretia deltoidea, and varieties
Calandrinia umbellata
Campanula cæspitosa
  fragilis
  garganica
  turbinata
Cerastium Biebersteini
  grandiflorum
Dianthus cæsius (on walls)
  deltoides
  neglectus
Dryas octopetala
Erinus alpinus (on walls)
Erysimum ochroleucum
Gaultheria procumbens
Gentiana acaulis
  Andrewsi
Gypsophila prostrata
Helianthemum, many kinds
Hepatica angulosa
  triloba
Iberis corifolia
  correæfolia
  sempervirens
Lithospermum prostratum
Onosma taurica
Phlox reptans
  subulata
Plumbago Larpentæ
Polygonum vaccinifolnm
Ranunculus amplexicaulis
  montanus
Saponaria ocymoides
Saxifraga Andrewsi
  capillaris
  ceratophylla
  coriophylla
  cristata
  crustata
  hypnoides
  incurvifolia
  juniperina
  lævis
  longifelia
  muscoides
  oppositifolia
  pectinata
  pyramidalis
  recta
  Rocheliana
Sedum Ewersi
  hispanicum
  kamtschaticum
  monstrosum
  pulchellum
  reflexum
  rupestre
  Sieboldi
  spectabile
  spurium
Sempervivem calcareum
  glaucum
  globiferum
  hirtum
  montanum
  soboliferum
Silene alpestris
Tunica Saxifraga
Veronica candida
  saxatilis

Alpine and Herbaceous Plants suitable as Flowering Edgings for Beds or Borders.

Achillea tomentosa
Ajuga genevensis
Alyssum saxatile
Anemone apennina
  coronaria
Arabis albida
Armeria vulgaris-rosea
Aster versicolor
Aubrietia deltoidea
Bellis hortensis aucubæfolia, and double varieties
Calandrinia umbellata
Campanula carpatica
  alba
  cæspitosa
  alba
  fragilis
  garganica
Cerastium Biebersteini
  grandiflorum
  tomentosum
Convolvulus mauritanicus
Dianthus alpinus
Dianthus deltoides
  petræus
Dodecatheon Meadia
Dryas octopetala
Erodium Reichardi
Gentiana acaulis
Gypsophila repens
Helianthemum, in variety
Iberis sempervirens
  corifolia
  Tenoreana
Linaria alpina
Lithospermum prostrata
Myosotis dissitiflora
  sylvatica
Nierembergia rivularis
Œnothera marginata
  taraxacifolia
Omphalodes verna
Oxalis, all hardy species
Phlox reptans
  subulata
Pentstemon procerus
Plumbago Larpentæ
Polygonum vaccinifolium
Primula Auricula, in var.
  vulgaris, in variety
Saponaria ocymoides
Saxifraga hypnoides, and most of the Mossy section
Sedum kamtschaticum
  pulchellum
  Sieboldi
  spectabile, for large beds
  spurium
Silene alpestris
  Schaftæ
Spergula pilifera
Statice oleæfolia
Veronica fruticulosa
  saxatilis
  taurica
Viola cornuta, in variety
  lutea

List of Ferns that may be Grown in the Rock-garden.

Adiantum pedatum
Asplenium Adiantum nigrum
  Filix-fœmina and varieties
  fontanum
  germanicum
  Halleri
  lanceolatum
  monanthemum
  Ruta-muraria
  septentrionale
  Trichomanes
  viride
Ceterach officinarum
Cystopteris alpina
  fragilis
Cheilanthes odora
Cyrtomium caryotideum
  falcatum
Dennstædtia punctilobula
Diplazium thelypteroides
Lastrea Filix-mas and varieties
  Goldieana
  assurgens
  intermedia
  marginalis
  novæboracensis
  atrata
  erythrosora
  opaca
Lastrea Standishi
Lomaria magellanica (in warm districts)
Onoclea sensibilis
Osmunda cinnamomea
  Claytoniana
  gracilis
  regalis
  cristata
  spectabilis
Platyloma atropurpurea
Polypodium hexagonopterum
  Phegopteris
  vulgare
Polystichum acrostichoides
  aculeatum
  angulare
  vestitum venustum
Pteris aquilina
Scolopendrium vulgare and varieties
Struthiopteris germanica
  pennsylvanica
Woodsia hyperborea
  ilvensis
  polystichoides
Woodwardia areolata
  aspera
  japonica
  orientalis
  radicans

Alpine and Rock Plants for Growing on Old Walls, Ruins, Stony Banks, &c. (The most suitable kinds are marked *.)

*Corydalis lutea
*Cheiranthus Cheiri
  pleno, in variety
*Arabis arenosa
  lucida variegata
  petræa (old mossy walls)
  blepharophylla (do.)
Aubrietia, all the varieties
Hutchinsia petræa
Vesicaria utriculata
Schivereckia podolica
*Alyssum montanum
  saxatile
  spinosum
Koniga maritima
Petrocallis pyrenaica
  (mossy and moist old walls)
*Draba aizoides
  bœotica
Ionopsidium acaule (north side of old walls)
Thlaspi alpestre
Iberis, in variety
*Reseda odorata (sown in chinks in walls this sometimes becomes perennial)
Helianthemums (many of the varieties might be grown upon old ruins, stony banks, &c.)
*Gypsophila muralis
  prostrata
*Tunica Saxifraga
*Dianthus cæsius
  deltoides
  monspessulanus
  petræus
Saponaria ocymoides
Silene acaulis (moist walls, to be first carefully planted in a chink)
  alpestris
  rupestris
  Schaftæ
*Lychnis alpina
  lapponica
Sagiga procumbens pleno
*Arenaria balearica
  cæspitosa
  ciliata
  graminifolia
  montana
  verna
Linum alpinum
Malva campanulata (ruins)
Erodium romanum (old walls)
  Reichardi
Ononis alba
Astragalus monspessulanus
Coronilla minima
  varia
Acæna Novæ Zealandiæ (moist mossy walls)
*Cotyledon Umbilicus
Umbilicus chrysanthus
*Sedum acre
  *acre variegatum
  Aizoon
  *album
  anglicum
  brevifolium
  cæruleum
  *dasyphyllum
  elegans
  *Ewersi
  farinosum
  hispanicum
  *kamtschaticum
  multiceps
  pulchellum
  *sempervivoides
  sexangulare
  sexfidum
  *spurium
*Sempervivum arachnoideum
  arenarium
  *calcareum
  globiferum
  *Heuffelli
  hirtum
  *montanum
  piliferum

*Sempervivum soboliferum
*tectorum
Saxifraga bryoides
casia
crustata
cuscutæformis
diapensioides
*Hosti
intacta
*ligulata
*longifolia
pectinata
pulchella
retusa
*rosularis
Rocheliana
*Rhei
sarmentosa
Cesperula cynanchica
*Antranthus ruber
albus
coccineus
Antennaria dioica minima (mossy chinks, with a little soil)
Bellium bellidioides
crassifolium
minutum
Santolina incana
Achillea tomentosa
Symphyandra pendula
Campanula Barrelieri
*fragilis
*garganica
cæspitosa
alba
rotundifolia
*Antirrhinum rupestre
*majus
Orontium
*Linaria Cymbalaria
alba
vulgaris
*Erinus alpinus
Veronica fruticulosa
saxatilis
Thymus citriodorus (earthy chinks)
Iris germanica and varieties
pumila
Polypodium vulgare
Adiantum Capillus-Veneris (on moist warm walls)
Asplenium Adiantum nigrum
fontanum
*septentrionale
*Ruta-muraria
*germanicum
*lanceolatum
*Trichomanes and varieties
*viride
*Ceterach officinarum
*Matthiola tristis

R.

Carpet Beds of Flowering Plants.—Not having seen in GARDENING a description of centre beds similar to those I had last year and intend having again this year, I wish to describe them to you, as they were very much admired, and perhaps some of your readers would like to try them. In the first place, the beds were made in the Italian style, with Box edgings, star-shaped, having in the centre of each a standard Rose 4 ft. high, with, of course, a strong stake to prevent it from swaying with the wind. Round the butt of each Rose I had carmine Candytuft; then a circle of white Candytuft; next a double circle of dark purple Pansies; then a double circle of yellow-ground Odier Pansies, and so on with Pansies. the colours contrasting, until the bed was filled nearly to the Box, inside of which was sown a row of Mignonette. At each point of the star short hooked stakes were driven firmly into the ground, and a line of oiled twine was then strained tightly from each short stake to the summit of the Rose-prop and tied firmly, thereby preventing any possibility of the Rose tree being stirred by strong winds. Close to the hooked stakes I sowed Convolvulus major, which I trained along the cords until they reached the Rose tree, where they (the Convolvulus) were nipped—the whole, when in bloom, presenting a beautiful sight, the Convolvulus hanging gracefully in festoons, partly shading the Pansies from what they do not like, the strong sun. The Pansies were kept blooming for a long time by nipping back long shoots and keeping decayed flowers and seed-pods well cleared away. Should any of your readers desire to try the experiment, they could, of course, vary the plants and colours according to taste, but I am sure the idea, if tried, would please many.—G. DOWNIE C. ELLIS, *Ivy Cottage, Churchtown, Co. Dublin.*

The Royal Fern.—I remember years ago being at Beddulth Grange grounds and gardens. I then saw Osmonda regalis in perfection. Nowhere else, indeed, have I seen this Royal Fern so fine as it was there, but not growing, as Mr. S. Piran recommended lately in GARDENING, with its crown under water, but on the side; and every instance when I have seen it—that is, doing well—it has been in similar situations. Perhaps, under the circumstances, Mr. Piran will excuse my calling attention to his recommendation. I myself should be glad to have the experience of one who has tried Mr. Piran's plan before I should venture on it myself.—JAS. CARR.

Substitute for Bedding Plants.—Having been unfortunate last season in losing all my Geraniums through the severity of the winter, it may interest those of your readers who may be so situated this year to know what an excellent and inexpensive substitute they may find in the large-flowering, common Ten-week Stock. They should purchase, at a cost of two shillings, one of the German collections imported from Erfurt, containing 800 seeds in eight varieties. Every seed can be relied on to germinate, and fully two-thirds to come double. Sow them in the ordinary way, in flat wooden boxes or seed pans, and place them in a cool frame. As soon as they will bear handling, carefully prick them out, without disturbing the mould adhering to them, placing in 3 in. pots filled with a mixture of wet rotten manure from an old cucumber frame, and good loam. Open the lights on every favourable opportunity, to prevent the plants becoming drawn. The Stock, like Mignonette, is a spare-rooted plant, and does not bear transplanting well, and I think is even better sown in the pots in which it is to remain, though the former plan is much more convenient, and if carefully done the removal is attended with a minimum of injury. By the usual bedding-time the plants will be ready, and may be set out about 12 in. apart, taking great care not to disturb the ball. The ground needs no special preparation; the only thing I do is to make the holes a little deeper than they are wanted, and deposit at the bottom some good rotten manure. Take care to reserve a few plants to replace any that may fail or come single. A good soaking of guano just before coming into bloom will greatly benefit them, and as soon as the main flowering stem is done, carefully remove it, and another application or two of some fertilising compound will cause lateral branches to shoot forth nearly equalling the main stem in size and beauty, and so carry on the display until the close of summer. My plants grown in this way were the admiration of every one; and this lovely flower, if properly cultivated, for proportion of flower to leaf, duration of bloom, and variety of colour, will challenge comparison with any of the well-known bedding plants, and for fragrance stand *facile princeps*. The wonder is that it is not more generally grown, and I can promise that any of your readers who will follow these few simple directions will find themselves amply repaid.—LEWIS W.

Rockery of Alpine plants in front of a Shrubbery.

HOW TO GROW DAHLIAS.

DAHLIAS may be propagated by means of cuttings, layers, root-divisions, or seeds; the latter being only used where new varieties are a desideratum. Cuttings are, undoubtedly, the best means by which Dahlias may be increased, and by these they may be multiplied to any extent; division of the roots is very commonly practised, but cuttings are, as I have said, best. When propagated by division, the tuber or tubers left, if they survive the summer, generally decay when stored, and communicate disease to the young plants. When cuttings are used, each has its own self-formed tubers, and they are on that account less liable to rot during the winter. If started in February or March, in a temperature of 65° to 70°, each crown will produce three or four cuttings every two or three days; which may be taken off even as early as March, removing them close to the crown, but taking care not to injure it, as others will come up at the base of those removed. It is also necessary for the growth of good plants not to let the cuttings become too long before taking them off the tubers, as they are more apt to flag, need more room, and are not so convenient to plant out as short cuttings. When the crowns have supplied all the cuttings that can be got from them, they may then be divided, if required; consequently nothing is lost.

To propagate from layers the lowest branches of the plant must be taken as early as possible, and should be pegged down in the soil, in which, if of a sandy nature, they will root freely; in the absence of sandy soil, a quantity of leaf-mould, with a good admixture of sand, may be laid down for them to root in. Pure white sand alone I find to be best suited for striking them in, and a mixture of leaf-mould and sand is very good for starting the crowns in. Cuttings may be successfully struck during the summer months; but this is seldom done except in the case of choice varieties. Three-inch pots are well adapted for putting the cuttings into, six cuttings being put in each pot, which should be plunged in a brisk bottom-heat, covered with hand-glasses, and shaded from bright sunshine; in less than a fortnight they will all be rooted, and may be potted off singly into large 3-in. pots, which may be put into lower temperatures gradually until, say May 1, when they may be put out-of-doors until required for planting.

It is necessary for Dahlias, as well as for other tender bedding plants, to have them in a situation where they may be easily protected in case of frost, as, in the event of the thermometer getting as low as the freezing point, they would be greatly injured, if not killed outright. Dahlias are seen to most advantage when planted in masses in large beds. For this purpose the tallest should be collected for the centre or background, as it may be, mixing the colours as well as possible. They should be planted 3 ft. or 4 ft. apart, and as they advance in growth all the lower branches cut off about 1 ft. from the ground. When a shrubbery is in any way unsightly, and has a border in front, a row of Dahlias often sets it off to advantage; and I have also seen a ribbon border backed by Dahlias with good effect. Staking and tying out the shoots must be particularly attended to, as the stems are very brittle, and break under the least wind-pressnre.

Earwigs are great enemies to Dahlias, but they may be trapped by using small round troughs, which may be procured at any pottery. They may also be caught in pieces of Hemlock stems, 6 inches long, leaving a joint on one end, and sticking the pieces here and there through the Dahlias. Small pots, with a little bit of dry Sphagnum Moss inside, inverted on the tops of stakes, likewise form good traps. As regards stimulants, manure-water of the strongest character may be safely used after the plants show flower, provided it be administered in the evening. Some Dahlias will produce all their flowers, or nearly so, perfect; others require their shoots to be well thinned, and all blooms except three or four to be cut off, in order to be eligible for show purposes; but, as a general rule, all may be more or less thinned. Dahlia roots have kept well and flowered for years in succession, in dry soils especially, when the plants have been cut down to the ground, and covered with some material to protect them from frost.—J. M.

Phlox Drummondii.—In some old-fashioned gardens, this is never absent during the summer months, and it is always a welcome guest in the floral circle. The seed should be sown about the first week in March in shallow pans or boxes, using a light rich soil, and placing the seeds in a nice warm and rather moist temperature. As soon as the plants can be

handled without injury, it is a good plan to prick them off into boxes, or on a bed in a warm house, in a temperature of from 50° to 60°. They soon make growth, and as the weather gets warm out of doors the boxes should be placed out in the shade to harden the plants. Those growing in a bed should be again transplanted to a prepared bed in a cold frame, and kept covered for a few days, and hardened gradually. When the plants are from 3 to 4 inches high they should have the main shoot pinched out; this induces them to make a lateral and bushy growth, and greatly assists the prolongation of the period of flowering. The soil in which the plants are to grow should be rich; an abundance of decayed leaves suits the Phlox well. The bed should be in a position fully exposed to the sun; as long as there is a good moist soil at the roots they will not be injured in the hottest bright weather.—Q.

VEGETABLES.

EARLY POTATOES WITHOUT GLASS.

IN any out-of-the-way part of the garden, where the ground is level and well exposed to the south and west sun, take out a pit, running east or west, in length according to your means and accommodation, in width 7½ f., and in depth 2 ft. at the front and 1 ft. at the back, which will leave the bottom with a good slope to the south. This done, procure a sufficient number of stout Larch or other posts 9 ft. long; char their bottom ends about 3 ft. up, and sink them that depth, including the excavated foot, along the back of the pit, about 8 ft. apart, taking care to have the tops level and in a line. This will leave them standing 6 ft. above the ground. Then nail a stout rail along on the tops of the posts, allowing it to project 1 in. over towards the pit; nail another rail along the bottom of the posts on the same side, about 6 in. above the ground line, and upon those nail, vertically, rough boards 6 ft. long, keeping their top ends flush with the top rail, which will allow the bottom ends to touch the ground or thereabout; for, as the pit has to be filled up above the ground line at the back, it is needless to allow the boards to project below that line. Boards about ¾ in. thick will do, and in nailing them on see that the edges meet closely. The back finished, sink a corresponding number of posts similarly prepared, and about 3½ ft. long, along the front of the pit, each opposite its neighbour at the back, allowing their tops to stand 15 in. above the ground; nail another rail on the top of these, and lastly nail slight rails across the pit on every pair of posts, at the angle formed by the back and front lines, and the framework is completed. It is not needful to board up the 15-in. space between the ground and the rail on the top of the front posts, for such would only shade the Potatoes from the sun. It is a good plan to pitch the woodwork over to preserve it; and this having been done, proceed to form the Potato bed as follows.

If the situation is a wet one, put at least 6 inches of drainage in the bottom of the pit, and lay a row of 2-inch drain tiles along the front, just inside the posts, to carry off any water that may collect to the nearest drain or outlet. If, however, the situation is dry and the subsoil porous, no drainage will be necessary; but whenever there is the slightest doubt of the water stagnating for the shortest period drain well, for on this hinges much of the success in keeping up a high root temperature. This is an all-important matter where the sole dependence is upon sun heat; for we know that the capability of any soil to absorb and retain heat is just in proportion to its dryness. The drainage materials may consist of rough stones or cinders for the bottom, and smaller stones for the top. If sods to cover the drainage before putting the soil in cannot be procured, more care must be taken in completing the drainage by filling up the crevices, so that the soil may not eventually work down among the stones and choke it up. Loam that has been laid in a heap until the fibre is dead should form the staple of the soil; and if this cannot be got conveniently, ordinary good garden soil will do. In either case it should be lightened with plenty of leaf-mould and peat, or either of these alone; but we recommend peat, and also a good proportion of charcoal or charcoal dust, in order to give the compost as dark a colour as possible, so as to increase its heat-absorbing power to the utmost. In this respect charcoal is a powerful agent, not to speak of its lasting manurial qualities.

The compost may be prepared any time during the winter, as opportunity offers; but the pit need not be filled with it in the first instance, at least until planting time. Afterwards it will not be needful to change the soil every year, but only add a dressing of fresh loam or manure. Eighteen inches of soil will be ample, and this, with the 6 inches of drainage, will raise the bed up to the ordinary ground level in front, and 1 foot above it at the back against the boards, which may be buttressed behind to the same depth by the soil which is taken out in excavating the pit. If these directions are carried out, the bed will slope well to the sun when finished, when we must turn our attention to the covering for the pit. Many kinds of sheeting are recommended for horticultural purposes; but nothing equals "frigi domo" as a frost protector. For a pit of the width stated, it should be 3 yards wide, which will be sufficient to cover the pit from the top of the paling at the back down to the ground in front. It should be tacked on to stout wooden rollers for rolling it off and on morning and evening; and if it is, Pentstemons, Carnations, Calceolarias, &c., can be struck successfully, and the same can be sheltered effectually under the frigi domo during winter. In fact, such a pit is easily made, cheap, durable, and need never be idle all the year round.—J. S.

Early Vegetable Culture.—In front of our plant-houses are several very warm early borders; they are not large, but the soil in them has been specially prepared for early cropping to the depth of 3 ft. or so. In preparing sites for early crops this labour is of the most profitable kind; as when once thoroughly done annual top-dressings afterwards will sufficiently maintain fertility, with, of course, deep stirring of the soil. These warm borders are devoted early in the season to such crops as Potatoes, Cauliflowers, Lettuce, Horn Carrots, and Radishes, making a sort of rotation with each other annually. We usually commence digging Potatoes from these borders in the open air by the middle of May. Such borders are very easily protected, which in the case of Potatoes with us is accomplished in this way: stout Ash or Hazel rods have their thick ends planted firmly in the front of the border; they are then bent over and the other ends secured under the wall-plate of the house. A sufficient number of mats is sewn together, so that two pieces will cover all up; they can easily be covered or uncovered in a few minutes, and in windy weather a tie or two makes all secure.—E.

Jerusalem Artichokes.—For ten or twelve years I have had very good crops of artichokes from a piece of ground on which nothing else will grow, it being so much sheltered by high palings and my neighbour's trees. The soil is good, light and deep; the only manure I have used is garden refuse. This year all the artichokes, instead of being round, have run very long, thin and stalked. In one spot, however, I dug up some of the largest I ever saw, 9 in. long and 2 in. diameter, weighing 10¼ oz.—J. H. D.

Sowing Parsnips.—These require a deep well-pulverised soil, in which the manure has been deeply buried, or one that has been so highly manured for a previous crop as to require none. If freshly manured, the roots will be coarse and much forked. The Hollow Crowned and Student are the best varieties, and of these seed should be sown in drills 1½ in. deep early in March; the drills should be 15 in. apart, and the young plants, when large enough, should be thinned out to 6 in. asunder. For this, as well as for all other growing crops, frequent stirrings of the surface of the soil between the rows are exceedingly beneficial.

Sowing Carrots.—The early French Horn should be sown at once on a warm border in drills 1 in. deep and 9 in. apart. It is not necessary to thin this crop much, as the moment the young plants are as large as one's finger the largest may be drawn for use. The main crop of James's Intermediate and Altrincham may be sown early in April on land that has undergone thorough cultivation. If manure had been used it should have been of the lightest possible description and dug in some distance below the surface. In places subject to the maggot, dress the land in winter with salt, lime, and soot. The two latter may be employed liberally, but salt must be used more cautiously—½ lb. to the square yard will in most cases be sufficient. I have occasionally used much heavier dressings, but we ought to know something of the character of the soil on which we are operating before applying it in excessive quantities. On heavy land, where there is a difficulty in obtaining good Carrots, after the ground has been got into good condition in April set the rows from 13 in. to 15 in. apart, then make holes with a crowbar 6 in. asunder along the rows; let the holes be 15 in. deep and 3 in. in diameter at the top; fill them up with any light, rich compost (two or three barrowsful will go a long way), drop three or four seeds in the centre, and cover lightly. When large enough to select the strongest, thin out the young plants to one in each hole. This is an excellent way to secure a good crop of clean, well-shaped roots, and the work is not so formidable as it looks.

Salsafy.—This root has, when cooked, a strong flavour of oysters, so much so as to have acquired the name of the Oyster plant. It is not much grown in small gardens, but a row or two of it will not occupy much space, and will furnish a desirable change occasionally in the way of vegetables. The roots are very apt to grow forked unless the manure be buried deeply. The best way is to open a trench 18 in. deep, place the manure at the bottom, return the soil, and sow the seeds in a drill 1½ in. deep, exactly over the manure, so as to tempt the roots to run straight down to it. The drills may be 1 ft. apart, and the plants should be thinned out to 6 in. asunder. The first week in April is the best time to sow Salsafy, which if sown too early is apt to run to seed. The roots keep best in the ground in the same way as Parsnips; and, if a little dry litter be placed along the rows on the approach of frost, they may be lifted as required.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

March 15.—Sowing Balsams, German and Ten-week Stocks. Putting in cuttings of Coleus, Fuchsias, and Verbenas. Potting off spring-struck Verbenas and Heliotropes. Levelling down Celery trenches, and getting the ground ready for Peas. Re-making Mint beds. Thinning out and cutting back Ivy on walls. Sticking early Peas, and giving them a little earthing up. Mending Box edgings.

March 16.—Sowing Long Pod and Windsor Broad Beans. Potting off Cucumbers and Melons. Putting in cuttings of Alternantheras and Mesembryanthemums. Turning over manure for Celery, having previously mixed it with salt and soot. Giving the surface of the Carrot and Beet ground a dressing of soot, and preparing it for drilling.

March 17.—Sowing Snow's Winter White Broccoli, Brussels Sprouts, and Wallflowers. Shifting Tomatoes and Capsicums. Pricking out Celery and All the Year Round Lettuce. Planting the main crops of the following sorts of Potatoes: Snowflake, Breadfruit, Main Crop, Giant King, Model, Schoolmaster, Porter's Excelsior, Paterson's Victoria, King of Potatoes, and Perfection Kidney.

March 18.—Sowing Cucumbers and Melons. Planting out autumn-sown Cauliflower; also a few Brown Cos Lettuces. Preparing ground for new Seakale beds, and also for Globe Artichokes. Earthing up Potatoes in frames. Forking over the ground amongst Cabbage plants.

March 19.—Thinning Grapes and tying down young shoots in early Vineries. Looking over Cucumbers. Getting netting and other coverings over Peach trees for protection. Looking over fruit room, and removing any fruits that are decaying. Renovating linings round manure frames. Weeding Box edgings and gravel walks. Dividing and re-making Herb beds

March 20.—Cleaning up the pleasure grounds, and rolling down all gravel walks that require it. Covering up Seakale beds. Looking over Pelargoniums; picking off all dead leaves and stopping the shoots where required. Clearing off borders, giving them a dressing of soot, and forking them up ready for seeds.—W. G., *Dorset.*

Glasshouses.

Borders in which plants are growing should be lightly forked up, and if the soil is exhausted a dressing of loam, leaf-mould, rotten manure, or good peat may be added, according to requirements. Some plants need more water than others, and in such cases neatly-formed basins of soil should be made around them, so as to retain sufficient for their wants without overflowing. This is an excellent time for transferring plants from pots to conservatory borders,

and in doing so disentangle and spread out the roots as much as possible. This may check growth for a time, but eventually, other circumstances being favourable, plants so treated will succeed better than such as are planted with the roots coiled up in a ball. Camellias, Rhododendrons, Acacias, &c., when grown in pots are more under control than such as are planted out; but the latter are generally the most satisfactory, both as regards growth and bloom. Clianthus puniceus, if too thick, should have its shoots thinned out a little, so as to give sufficient light to the flowers. Passion-flowers should be pruned well in, and the soil in which they are growing should be thoroughly saturated with water, so as to induce them to start freely into growth. Cut in the branches of Habrothamnuses. Several of the free-growing Fuchsias are well suited for conservatory roof decoration or that of pillars, especially when planted out in borders. If trained to the rafters from the middle of April until they are completely denuded of side branches in the end of October or November, or for the purpose of resting them and admitting light to the other inmates of the house, they form objects of interest, being richly laden during all that time with both flowers and foliage. Cuttings of Coleus struck early should be potted as they require it, pinched at the third joint, and the plants be kept near the light. Iresines form attractive summer objects in conservatories; therefore, treat them like Coleuses. The general stock of Begonias should now be potted and started into growth. Caladiums started in small pots should be shifted into larger ones before their roots become entangled. Continue to force Lily of the Valley; place the plants that have been forced under the stages of the greenhouse for a time, and after that plant them out, where, if they be well cared for, they will in two years make good plants for forcing again. Some plants of Lilium auratum should be introduced into the greenhouse for blooming in May. In making up baskets for suspending in the conservatory, keep them in a warm house until they are in active growth, when they may be gradually hardened off, so as to withstand the cooler temperature to which they are to be subjected. Keep up a young and healthy stock of Fuchsias, Heliotropes, Petunias, and other plants for early blooming; those treated more hardily flower later.

Chrysanthemum cuttings struck at the end of the year will by this time be well rooted and hardened off; they should be at once moved into 6-in. pots, using ordinary loam made rich with one-third rotten manure and leaf-mould in equal proportions, to which a little sand has been added. There is no grosser feeding plant in cultivation than the Chrysanthemum. To grow it successfully the soil must be rich, and in its early stages it must never be allowed to become pot-bound, for if this occurs, no after-treatment will ever impart to the plants their wonted vigour, as the stunted condition the roots get into when confined in little pots has the effect of prematurely hardening the shoots. It will be necessary to decide upon the desired state of the plants. In most cases it is advisable to adopt two or three forms, but the flat, Mushroom-headed fashion should never be followed. The most generally useful for decorative purposes are plants with a dozen or more shoots, ultimately trained with just as many sticks as will support them. All plants intended to be grown thus should, at the time of potting, have the points pinched out to induce them to break several shoots. This shape will be found the most suitable for the medium-sized, freest-flowering of the large varieties, and also for the Pompones. Many of the large kinds that produce the finest individual blooms are not capable of being seen in their best form if many flowers be allowed to each plant; for ordinary purposes six or eight will be enough on each; for growing in this way the plants must be also stopped now to cause them to form three or four shoots. Those who are disposed to attempt the production of a few of the finest flowers may do so by only allowing each plant in a 9-in. or 10-in. pot to carry from one to three flowers. These will be found very effective when in bloom if arranged in the greenhouse amongst the dwarfer growers, relieving the even surface, which is justly held objectionable in a stage filled with Chrysanthemums of nearly the same height. To grow them in this way the young plants now potted should not be stopped at all, but simply trained to a single stem all through the season, allowing it to branch out in summer near the top to as many shoots as it is destined to carry flowers. Chrysanthemums are frequently seen but mere shadows of what they are capable of being produced; yet they are easily managed, and well repay a little extra attention.

Herbaceous Calceolarias that have now filled their pots with roots and are pushing up their flower-stems will have their blooming capabilities much increased by the continuous use of liquid manure; these should be in a warmer place than the Cinerarias, and a vigilant look-out kept to see that insects do not get established upon either of them.

Pelargoniums.—The earliest-blooming, large-flowered, and fancy Pelargoniums will now be showing their flowers; and as the roots by this time will have taken full possession of the soil, they should be supplied with manure water once or twice a week. If attention in this matter be not paid to these plants, there is a difficulty in keeping the foliage of that dark green healthy hue which so much enhances their appearance when in flower.

Flower Garden.

Auriculas.—These are now making rapid growth. The trusses are showing up freely through the varied and beautifully powdered foliage. It is an anxious time, especially for the exhibitor, who has to get his flowers in perfection by a certain date—about the end of April; and, unless he is well acquainted with the character of the different varieties, a mistake may easily be made. Not only do some varieties take much longer to perfect their trusses than others, but a great deal depends upon how the trusses come. Sometimes they can be seen deep in the centre of the plants in autumn. These take a long time to come to perfection; the flowers will probably not open until April. Another plant will have a large centre which will not show any signs of a truss until March, when, as if by magic, a leaf or two is unfolded, and lo! a fine truss is exposed to view, with the flowers almost expanded, and probably in advance of that formed in autumn. As a rule, the earliest-formed trusses produce the finest flowers. The plants must not now be allowed to suffer from want of water, but it must be applied without wetting the leaves; the fine mealed foliage is easily injured; a shower of rain is most disastrous. The lights may be removed altogether in fine weather, but no rains or cold winds should have access to the plants. The small offsets potted in the autumn should now be shifted into larger-sized pots; the little plants will make rapid growth, and form fine plants by the next blooming time.

Herbaceous Phloxes.—The Phlox is a gross feeder, and never succeeds well unless the ground is deeply trenched and well manured; this ought to be done in the autumn, so that the frosts of winter may pulverise the soil, and it ought to be turned over two or three times. If all the cuttings have not yet been put in, see that they are inserted at once, as previously recommended. Cuttings put in early, and rooted in a gentle bottom-heat, are very useful for flowering in pots in the autumn. The plants must be potted on and carefully attended to, else they will not flower until the second year.

Tulips.—These are now above ground, and the surface of the beds has been covered over with some rotten frame manure. Nearly all sorts of plants succeed better in light soil when the surface of the ground is mulched; in that case water can be applied without causing a crust to form on the surface, and when water is applied it does not evaporate rapidly. Of course, it is not necessary to apply any water to the Tulip beds at present. It used to be the practice of the old growers to cover their beds early in the spring, and it may be necessary to do so in cold wet districts; but the plants do not sustain any injury from the weather in dry, well-drained districts.

Pansies in Beds.—The surface of the ground should now be stirred with a pointed stick, and all weeds should be carefully removed with the fingers. If there be sufficient space between the plants, it will be as well to run the Dutch hoe through amongst them. Mulch the surface of the beds with rotten manure.

Pinks.—These require treatment very similar to that given to Pansies. Blank spaces should be filled in with plants that have been saved in pots and wintered in a cold frame. There are a few varieties that will not do well in the open ground during the winter, and if they should be scarce it is better to save them all in pots, as in the case of Carnations.

Gladioli.—These should now be planted out for the main bloom. Those planted out about the middle of March or towards the end of that month generally succeed the best.

Dahlias and Hollyhocks that have been re-potted into 5-in. or 6-in. pots should be placed in frames and have plenty of ventilation, removing the lights altogether in fine weather. Hollyhocks will not suffer from frost, but the Dahlia is exceedingly susceptible to it. Dahlias are not often injured by insect pests, but thrips and red spider injure the Hollyhocks. Syringing and fumigating with Tobacco-smoke is the best way to destroy them. Those who grow these useful autumnal flowers for exhibition will have by this time the ground in good condition. It ought to have been trenched and well manured in the autumn, and in fine weather the surface may be forked over to the depth of 3 in. or 4 in. Hollyhocks may be planted out in the course of a week or two.

Sweep and roll lawns and walks as soon as the weather becomes favourable. Judiciously prune evergreen shrubs such as Aucubas, Hollies, Bays, Box, Yews, Portugal and common Laurels, Junipers, Thujas, Cypresses, Ivies, &c., which may be outgrowing the spaces allotted to them, keeping symmetry and gracefulness of form as much as possible in view. The knife is better than shears for such an operation, the latter being apt to mutilate the leaves.

Herbaceous Borders.—Most of the plants will be aboveground and the mulching material put on early in the winter ought to be dug in. For this work use a fork in preference to the spade. Should the grass need edging it can be done at the same time, thereby imparting to the whole a neat appearance. Be very careful not to disturb the roots of any kind of Lilies, as they, more than most subjects, are impatient of any interference at this season. Summer and autumn-blooming herbaceous plants, such as Phloxes, Asters, or any flowers that exist in large masses when the season is considerably advanced, it will be well to divide at the present time, as by this means their roots will be placed within reach of fresh soil, which will strengthen them and enable them to bloom better. It is necessary to keep well back in the border tall-growing plants of this description; but as far as possible avoid planting them where the ground is occupied with deciduous tress, as herbaceous plants have but a very poor chance of success under these circumstances; yet, as in such situations it does not look well to have the ground bare, there is nothing better suited than the strongest tall-growing varieties of Michaelmas Daisies and Golden Rods, to assist which in such positions an extra liberal dressing of manure should be given every spring, digging the ground with the spade a full spit in depth, which will cut off obtruding roots, and for a considerable portion of the summer spare the plants being affected by them. Any choice plants that are subject to the attacks of slugs will be benefited by 1 in. of coal-ashes being placed round the collars of the plants, which, though it will not altogether prevent the slugs from attacking them, will, in a great measure, hinder them from harbouring under the plants.

Vegetables.

A continuous supply of good vegetables through the season much depends upon the attention during the next few weeks in putting into the ground the numerous seeds that require it. The whole of the Potato planting should be brought to a close before the end of the month. If the seed has been prepared as advised it will be in good order. In planting the general crop there are two courses to follow: either place the rows sufficiently far apart to admit the winter Broccoli, Cabbage, Brussels Sprouts, &c., being afterwards planted between the rows, or put the Potatoes far enough apart to ensure their well-being without anything else between them. In the former case the rows will require to be 3 ft. asunder; in the latter 2 ft. to 2 ft. 3 in. will be sufficient. The single-cropping system is preferable, as when double-

cropping is resorted to the winter vegetables never do so well, and in many cases are too far apart when the Potatoes are removed. On the score of economising space, this double-cropping is evidently more loss than gain.

Sowing Seeds.—Sowings should now be made of Cocoa-nut and Enfield market Cabbage, green Curled Savoy, Walcheren and Early Snowflake Cauliflower, and Autumnal Giant Cauliflower. Cover the seeds with red lead, to protect them from birds. Successional Broad Beans and Peas will now require putting in. Excepting where the vegetable ground is limited, and there is a difficulty in procuring Pea-sticks, there is nothing to equal the tall Marrow kinds for furnishing a large and continuous supply, which does not come in altogether as the dwarfer-growing varieties do. Where the tall sorts of Peas are grown, and the ground is rich and in good condition, they will require 5 ft. 6 in. space between the rows; this will be sufficient, and better than sowing farther apart with Broccoli or Celery between, as is sometimes done; such double-cropping being here again no advantage, for the Celery, Broccoli, &c., so grown never has the necessary strength and vigour to withstand the winter that they have when grown by themselves. A row of Spinach can always be grown without any disadvantage between Peas so planted. Amongst winter vegetables there is nothing that is of more real use than Brussels Sprouts. To grow them well, the seed must be sown not later than the third week in March, so as to get the plants a good size early, planting them out where they are ultimately intended to grow as soon as they are large enough.

Aralia japonica.—This is a fine-leaved plant, perfectly hardy in the south, but requiring shelter in northern districts. When grown in groups on lawns or in shrubberies it has a noble appearance. It also makes an excellent window plant; its leaves being smooth and glossy, they can easily be kept clear of dust. It requires rich soil and plenty of water to grow it well, and when in active growth a little soot-water or liquid manure greatly improves the appearance of its leaves by rendering them large and thick, and of a dark glossy green colour.

Aralia japonica, a hardy plant for the garden or window.

Caladiums for Rooms.—The beautifully-diversified markings of the leaves of Caladiums, combined with their being plants of the easiest possible culture, renders them general favourites. Plants of them in small, say 6-in. pots, grown in not too much heat and near the light, without more shade than is absolutely necessary to keep them from scorching, may be used with advantage for table or indoor-vase decoration. Yet even when thus especially prepared for indoor work they must not be kept too long out of heat, or they will suffer. For this purpose loam is preferable to peat to grow them in, as it induces a more robust habit of growth. Start the plants into growth any time after Christmas, giving them a good light position in a house or pit where they can receive 60° or 65° night temperature, with 10° more by day, ; attend to them well with water, and when they have filled their pots with roots they will be benefited by an occasional application of manure water; syringe them every evening overhead, in order to keep them clear of red spider, which is their worst enemy. As the season advances, gradually inure them to a fair amount of air on all favourable occasions. This will render them less likely to sustain injury when removed from their growing quarters. Towards autumn, when they show signs of going to rest, gradually withhold water, and keep the soil almost dry during their season of rest; but the roots should never remain long in a lower temperature than 60°, or they are liable to rot. Caladiums are increased freely by means of cuttings taken off with a heel, or by bits of the roots containing buds.

ANSWERS TO QUERIES.

1578.—**Flower Shows for Children.**—In the City of London the plants most commonly grown by the denizens of narrow streets and courts for exhibition at the City Show are such as Fuchsias, Pelargoniums (or better known as Scarlet Geraniums), Onion plant, Creeping Jenny, common Musk and Harrison's Musk, Ferns of hardy kinds, the Green Coleus, better known as the Nettle plant, Mignonette, a few common annuals, Houseleeks, Carpet Sedums, Balsams, Petunias, and a few other common things that are fairly hardy and will do well with a moderate amount of sunshine. Assuming that it is proposed to promote a flower-show in a town for children, the first regulation should be for the purpose of ensuring that the plants and flowers are the property of and grown by the children. Thus a rule should be made that all plants exhibited should have been in the possession of the exhibitor for a period of at least two months, and this rule should be backed up by visitation of the children's homes to see that they have the plants in their possession. Some limit might well be put upon the size of the pots in which the plants are grown. If wild flowers are shown, they should be in bunches of sorts as far as possible correctly named, so as to make their collection of an educational character. The chief regulations for the guidance of the promoters will be found in fixing the hours for the receipt of plants, for the regulation of the judging, for the opening of the show to the public, for the number of tickets to be given to each exhibitor, the time of closing the show, the prices of admission to be paid, and so on. All these are most simple and general, and will readily occur to any intelligent person. Much good may be done by the distribution amongst deserving children of suitable plants in pots, also some common annual seeds, and, not least, of a small quantity to each of some fair potting-soil, as the obtaining of this in a crowded city becomes almost an impossibility. —A. D.

1532.—**Annuals and Perennials for Bouquets.**—*Perennials*—American Cowslip, Dog's Tooth Violet, *Pyrethrums, Pinks, *Carnations, of all varieties, *Aquilegias, Larkspurs, Lilium candidum, Lilium chalcedonicum, Martagon Lilies, Anemone japonica, *Chrysanthemums, *Pompones, *Phloxes, Polyanthus Narcissus, *Pheasant's Eye Narcissus, *Tulips, *Hoteia japonica, *Spiræa filipendula, *Spiræa palmata. For small bouquets—*Snowdrops, *Lily of the Valley, *Scilla nutans, London Pride, *Primrose, single and double, *Pansies, *Sweet Violets, Border Violas, *Alpine Auriculas, *Wallflowers. In addition to these the smaller side flowering shoots of the following are useful:—Yellow Antirrhinums, Canterbury Bells, single and double, White Foxgloves, and Sweet Williams. *Flowering Shrubs*—*Jasmine, white and yellow, Jasminium nudiflorum, Daphne in variety, Double-flowering Cherry, *Roses, *Persian Lilac, Laburnum, *Hawthorn in variety, *Honeysuckles of all kinds, *Clematis, *common Broom. *Hardy Annuals*—*Nasturtiums, *Coreopsis, all kinds, Lupins, Mignonette, Eschscholtzia crocea flora-pleno, *Sweet Peas. The annual Chrysanthemums are also very showy, but many people object to the smell of them. *Half-hardy Annuals*—*Phlox Drummondi grandiflora in variety, *Zinnia elegans in variety, *Indian Pinks, *Dianthus Heddewigi, single and double. Those marked (*) are the most useful.—J. D.

1566—**Propagating Tacsonias.**—Tacsonia Van Volxemi can be propagated either by means of seeds or cuttings. To raise it from seed, select a well-ripened fruit in the autumn; cut it open, take the seeds out and mix them with sand, and well rub them together to clear them of the pulp. Lay the seeds thinly on paper until quite dry, when they can be stored away in a dry place until required for sowing. In February or March sow the seeds in pots of light sandy soil and place them in a warm greenhouse or gentle hot-bed; they will germinate in about four or five weeks. When the plants are large enough to handle, pot them into 3-inch pots, using any light rich soil. As soon as the roots fill the pots shift them into 6-inch pots. They will make good plants suitable for planting out the following spring. To grow the Tacsonia from cuttings, select half-ripened shoots of moderate growth, such as are firm and not hollow; cut into cuttings about 3 inches long, insert them into well-drained pots of sandy soil made moderately firm. Plunge the pots into gentle bottom-heat and cover them with a bell-glass. As soon as rooted treat them the same as the seedlings. Plants grown from cuttings will come into flower quicker than those grown from seeds.—WESTON-SUPER-MARE.

1503—**Cost of Greenhouse.**—It is very difficult to give even the probable cost of a greenhouse with such an indifferent knowledge of the circumstances; and the simplest way would be to get some local carpenter to give an estimate, as cost of labour and material differs greatly in various localities. Taking a general basis of prices, it is probable that the cost would not be less than £10. As the house is needed only for Ferns, it might be of less height than is needed for plants; and the pathway somewhat sunken inside will render height less necessary. Shade should suit the Ferns very well, and it would be a good arrangement to build up the front portion inside in the fashion of rockwork, and plant it with moderate growing Ferns and Lycopods, whilst the stage over the flue may be reserved for Ferns in pots.—A.

1536.—**Birds and Seeds.**—A roadway about 20 ft. wide divides my garden from a farmyard where there are always three or four haystacks, besides which the house and premises have all thatched roofs. Nothing could well be more favourable for harbouring sparrows, yet I find, after trying several remedies, nothing so effective and simple as a single line of black thread for keeping birds from seeds. Place a somewhat stout stick at one end of the row (say for Peas), and a similar stick at the other, with one or two in between, as you may think fit; then stretch a single black thread along from one end to the other about 2 in. or 3 in. above the ground. For a row of Peas you would want two rows of thread, about 6 in. apart. For beds of seeds the rows of thread should be 9 in. apart over the whole bed. The thread being so fine, birds seem to have a horror of getting entangled; whereas with string or netting they will often sit on it or fly through.—F. X.

1583.—**Orange Trees in Boxes.**—If wooden boxes are preferred, there is nothing better than the best red deal. The inside might be charred by smearing some Stockholm tar over it, and setting fire to it, and the outside well painted. Boxes are sometimes made with movable sides, to facilitate replanting should it be necessary. The best time to transfer the plants to new boxes is in April, as then, by keeping the house close and moist, new roots will be made immediately. The best soil is turfy loam two-thirds, old manure one-third; and a few crushed bones might be added, say about a peck to four or five bushels of soil. The boxes must be well drained, and the soil rammed in firm. See that the old balls are in a moist condition when replanted.—E. H.

1533.—**Trailers for Window Boxes.**—Of plants to form a drooping edging for a window box the best raised from seed are Convulvulus minor and dwarf Tropæolums, both of which will fall over the front and droop if planted near the edge. Also Mignonette, Nemophilas, Silene pendula, and Eschscholtzia crocea. Of hardy perennials, the Creeping Jenny, Musk, and Campanula Barralieri, and the half-hardy drooping Grass, Isolepis gracilis, one of the most pleasing of all plants for the formation of drooping edging.—A.

1560.—**Management of a Window Case.**—It is scarcely probable that a Passiflora, which is a strong rank grower, would do in a window case, but such moderate creepers as Thunbergias, Tropæolum, Lobbianum, in pots, also Lophospermum scandens, may. The Thunbergias are charming plants to suspend in pots from the top of the case, whilst the more robust climbers should be trained around it. One of the most fitting climbers for a Fern case is the climbing Fern, Lygodium scandens, which forms a pleasing framework for other Ferns if it be neatly twined round twigs or stout string.—A. D.

1561.—**Steam in Forcing Frame.**—Probably the best plan to exclude superabundant steam from a frame would be to put over the slates at the bottom a thin layer of turf, with the Grass downwards It is a common practice to do this on a hotbed beneath newly-planted Cucumbers when there is danger from strong bottom-heat. A thin layer of turf on the slates, and on that 1 in. of Cocoa-nut fibre refuse, on which the pots should be placed, will doubtless exclude all injurious steam, and yet admit the needful heat.—D.

1531.—**Roses for Lancashire.**—Baronne Prevost, Captain Christy, Dupuy Jamin, Charles Lefebvre, General Jacqueminot, John Hopper, Jules Margottin, La France, Madame Bole, Mons. Paul Neron, Souvenir de la Malmaison, Gloire de Dijon.—E. H.

1523.—**Manuring Lawns.**—If ordinary manure is objectionable give a good dressing of soot; 1 bushel to the square rod will not be too much. Nitrate of soda is a very stimulating application in moderate quantities, but it is not lasting enough for a lawn; and the same must be said of all artificial manures. Bone-dust ground small is an excellent top-dressing. If the roller is used frequently it will press the small particles of bone into the turf, out of the way of the mowing machine.—H.

1537.—**Cherry and Pear Trees not Fruiting.**—The buds probably do not ripen well; the soil is too stiff and rich for Cherries. Work in some lime rubbish or old mortar from old buildings among the roots towards their feeding extremities. Leave the Pear tree unpruned for a year or two, merely thinning the branches, not shortening them; probably this will have the desired effect. The new life or force imported by extension will make it fruitful.—E.

1580.—**Fruit Trees for Yorkshire.**—I should recommend either a good Pear, such as Marie Louise or Duchesse d'Angoulême, or else a good Plum—say the Golden Drop or Transparent Gage.—E. H.

1565.—**May Flower.**—Epigda repens, heath soil under bushes; 6 in. to 12 in. high; flowers in April.—M. M.

1577.—**Staging for Small Greenhouses.**—Nothing makes a better stage for greenhouse than slates. My house is 20 ft. by 9 ft., a stage on each side 3 ft. wide, with 3-ft. path; each slate is 3 ft. by 2 ft., which cost 1s. each, upon which I put 3 in. or 4 in. of Cocoa-nut fibre, and I can say with confidence that any greenhouse plant will grow on it. In summer it gives moisture; in winter it prevents the too rapid evaporation when the fire is burning. Geraniums and Fuchsias grow remarkably well—in fact, they make roots 2 yards long—on the slates. —AMATEUR OF TWENTY YEARS.

1529.—**Hunt's Sweet William.**—Sow now in very slight heat, and prick out the plants into a box when they have made three pairs of leaves: Plant out where they are to flower in April, after being hardened off. Or sow in August in the open ground, and put the plants out where they are to flower in September. Sweet Williams are extremely hardy. I have had some out-of-doors in a pot through the severe frosts of last December; and some of them planted in the first week in January in an exposed border are just starting into growth. A light, rich soil suits them best. Old hotbed manure or leaf-mould is the most suitable dressing for the soil.—J. D.

—— Seed of Hunt's or indeed any kind of Sweet William may be sown in the open air through March and April in light soil thinly; the young plants pricked out into good free working soil about 12 in. apart, when large enough to be so treated. Such plants will develope into large bushes, carrying the next season several heads of bloom. Any good garden soil will bring flowers of fine quality and of good size.—A.

1567.—**Worms in Garden.**—Get a shovelful of air-slaked lime, put it into a bucket with four or six gallons of water, stir well, and let it settle. Use the clear water only. Do this on three or four consecutive nights, and you will soon clear the worms. The lime will not harm lawns or plants in the beds. A little soot mixed in it would be an advantage.—BRADFORD.

—— Turn a brood of young ducks into the garden they will soon thin down the worms. Ducks will not injure plants until they are about a third grown; and up to that time they are invaluable for destroying worms. If the garden is enclosed, buy a couple of peewits; clip one wing, and turn them into the garden. They are even better than ducks for getting rid of worms.—G. A. PASSINGHAM, *Cambridge*.

—— I should advise using the refuse charcoal employed in making steel. It has been employed with success on croquet lawns by spreading it about November, and it disappeared by spring. I believe it can be obtained in Sheffield at a cost little beyond the carriage.—A YORKSHIREMAN.

1516.—**Weedy Lawns.**—I was troubled with a weedy lawn, and I got 2d. worth of sulphuric acid, and with a glass out of a broken thermometer dipped in the acid I just touched the centre of each weed, no matter whether Dock, Dandelion, or Plantain, and it withered in a few minutes, and could be picked off and taken away never to appear. After going over a lawn in that way two or three times you will completely clear it. Care should be taken not to use too much, or the lawn Grass will be also destroyed.—BRADFORD.

—— Coltsfoot is a very coarse-growing, large-leaved perennial and should be killed outright by constant mowing. Probably it is Crowfoot or the dwarf Buttercup (Ranunculus bulbosa) that is meant, as that is a great pest to lawns, and mowing does not kill it. There is no other cure but pulling out by the roots, and persisting in the work until the weeds are extirpated. Watson's Lawn Grass has a good reputation for killing weeds if sown over lawns and well brushed into the ground.—A.

1582.—**White Flowered Chrysanthemums.**—Mrs. George Rundle, Mrs. Forsyth, Beverley, White Venus, Mrs. Heale, Princess of Teck, Elaine, Ethel, Fair Maid of Guernsey, Lady Margaret, Miss Margaret, Fleur de Marie. *Pompones.*—Reine de Anemones, Mademoiselle Marthe, White Trevenna.—J. D.

—— For ordinary greenhouse culture the following are equal to any:—Mrs. George Rundle, White Venus, White Eve, Beverley, and Virgin Queen (Incurved); Fair Maid of Guernsey, Elaine, and Ethel (Japanese); White Christine (Reflexed); Fleur de Marie or Lady Margaret (Anemone); Madam Marthe and White Trevenna (Pompons). If individual show blooms are required, the last five must give way to Empress of India, White Globe, Mrs. Heales, Princess of Teck, and Mrs. Halliburton: These latter require high culture, and must be established early.—N. D.

Caladium.

—— Of Japanese or tasselled kinds some of the purest white flowers are Elaine, Fair Maid of Guernsey, and Jane Salter; of large-flowered kinds, White Queen of England, Mrs. George Rundle, White Globe, and Princess of Teck; Anemone-flowered, Virginale; and of the smaller-flowered sections, Marabout, White Trevenna Mdlle. Marthe, and Madame Domage. All these come very pure under glass.—D.

1492.—**Maiden-hair Ferns not Growing.**—I have beautiful and luxuriant Maiden-hair Ferns growing in pots in an ordinary living-room with a bay window. I never let them get quite dry. Perhaps "A. E. C." has gas in her rooms; if so, of course glass is necessary.—M. L. B.

1496.—**Gardening in Towns.**—I grew Carnations for many years in a town garden very successfully. Auriculas will also thrive very well in a confined space, and enjoy being mulched with tea-leaves occasionally.—M. L. B.

1517.—**Durability of Cyclamens.**—With good culture Cyclamen roots have been kept to bloom freely, even at twelve years of age, but so easily are fresh roots raised from seed that the old ones are hardly worth the trouble. When the plants have done blooming they should be placed in a frame not exposed to the full rays of the sun, kept cool and moderately moist, and not allowed to lose their leaves nor to go entirely to rest. They should flower freely in any ordinary greenhouse now.—A.

1518.—**Hotbed Frame.**—A useful size for a single light frame for a hotbed is 6 ft. in length and 4 ft. in width; the sides and ends alike made of 1½-in. boards; the back end 20 in. in height, and the front end 12 in. high, the top edges being bevelled off to match the slope of the sides, which should, of course, be the same height behind as the back is, and in front as the front end is. On the outside upper edge of the sides should be nailed a stout strip of wood, the depth of the thickness of the light, to keep it in its place and prevent the wind from getting beneath it. In each of the four corners there should be fixed a triangular-shaped piece of quartering, as this nailed to the frame gives the corners much additional strength.—A. D.

1568.—**Manure for Potatoes.**—Leopoldshal kainit and superphosphate is recommended in equal quantities as a manure for Potatoes (5 cwt. of the mixture to the acre), but I cannot say where the Kainit may be obtained. Perhaps some reader will kindly inform me. Kainit contains a large percentage of potash salts, and would therefore be an excellent substitute for wood ashes.

1508.—**Treatment of Dracænas.**—The tops of lanky Dracænas taken off and put in now as cuttings in rich turfy sandy soil, and in a strong bottom heat, should strike freely. The bottoms will then, if put into warmth, break and throw out side shoots, and these again may be taken off and converted into cuttings. Young plants are even better coloured and more handsome than old ones.—D.

1509.—**The Cape Pond-weed.**—The Cape Pond-weed, although classed as a greenhouse plant, and even doing well under certain favourable conditions in this country in the open air, yet really needs more warmth than is just now perhaps afforded in an ordinary greenhouse. As the sun heat increases the plant will probably improve, but much depends upon the peculiar conditions under which it is being grown.—A.

1527.—**Gladiolus Brenchleyensis.**—This will succeed well in pots. Plant one bulb in a 6½ in. pot or three bulbs in an 8-in. pot. Pot them about 2 in. deep in light rich soil, two parts loam, one part rotten manure or leaf-mould, with a sprinkling of silver sand. Place the pots out-of-doors, and cover them with Cocoa-nut refuse or ashes until the plants appear above ground, when they may be removed to a frame or greenhouse, where they should have plenty of air to prevent them becoming drawn. As soon as the flower-spikes appear water the plants twice a week with weak guano water.—WESTON-SUPER-MARE.

1514.—**Moss in Cool Fernery.**—Mosses will much more freely attach themselves to damp unwashed brickwork than to a lime-washed wall. The simplest way to secure a Moss covering is to build into the wall a quantity of projecting pieces of tile, and on these projections place suitable soil, and into it dibble pieces of such as Selaginella denticulata, keeping it well syringed through the summer season.—D.

1515.—**Mildew in Fern Cases.**—Probably the best thing to do with mildewed Ferns in a Fern case would be to take them out, free them from the soil, dust freely with sulphur, and then remove all the soil in the case; wash and cleanse the case, put in fresh peaty soil and replant. This may extirpate the mildew.—A.

1530.—**Lobelia speciosa.**—Lobelia speciosa seed may be sown at once in shallow pans in fine sandy soil, and be placed in a sunny part of a greenhouse. The seedling plants, when large enough to handle, must be pricked out thinly into other pans or into boxes, and in these grown on and presently hardened off by placing them in the open air ready for planting out about the first or second week in June.—D.

1531.—**Yellow Calceolarias.**—Seed of yellow bedding Calceolarias may be sown at once in pans, the soil being first gently damped; and when the seed is sown a large piece of glass should be placed over the pan to induce quick germination. Such plants may be expected to bloom at the end of the summer and through the autumn.—D.

1532.—**Annuals and Perennials for Bouquets.**—Achillea Ptarmica flora-plena, Lathyrus latifolius, Carnations, Picotees and Pinks, double Pyrethrums, Scabious, Aquilegias, Anemones of Dutch and Japan kinds are a few perennials; and of biennials and annuals, Wallflowers, Indian Pinks, Asters, Stocks, Mignonette, Globe Amarantus, Helichrysums, double Zinnias, Phlox Drummondi, annual Chrysanthemums, and Prince's Feather, a few ornamental Grasses, &c., are but a small number of things useful for bouquets.—A. D.

1502.—**Planting a Rockwork.**—A few flowers mixed with Ferns make a prettier rockery than Ferns alone, unless they are very rare or fine specimens, when, of course, they do not require any setting off to advantage. Any little creeping plants—such as Creeping Jenny, Ivy-leaved Toadflax, and different kinds of small Ivy, look better between them than the dry soil. Tufts of Wood Sorrel and wild Anemone dotted here and there ook very charming. Clusters of Snowdrops, Primroses, and Violets, with the blue and white Periwinkles, will make the rockwork still prettier.—TILLY SLOWBOY.

1605.—**Vitality of Seeds.**—I have found that genuine seeds will retain their vitality for more than one or two seasons. Looking over my seed-drawer, I came across two packets dated three seasons back, containing Petunias and Lobelias (very small seeds); and doubtful of their goodness, I sowed them in two pots, and put in slight bottom-heat, with the result that more than one half have come up and are doing well.—G. E.

1523.—**Manuring Lawns.**—I find a dressing of Amies' Chemical Manure (4 oz. to the square yard) an excellent stimulant. It should be applied immediately before rain. If "J. S." gives this a trial I think he will find his lawn greatly improved in a short space of time.—B.

1530.—**Lobelia Speciosa.**—Lobelia speciosa seed should be sown at once in pans or pots of finely sifted soil, covered with a sprinkling of fine silver sand. As soon as the seedlings are large enough to handle, they should be pricked off singly and they will then be ready to plant out in June.—B.

1515.—**Mildew in Fern Cases.**—Open the case daily for about a couple of hours to admit air, and take that opportunity to pick out carefully every piece of mildew. Should the Ferns be of the proper variety for a case they will soon recover their usual health. Should the varieties, however, be unsuitable they will damp off notwithstanding every precaution and care.—HARRY BRIGHTON.

Sowing Vegetable Marrows.—*W. D.*—The middle or end of April will be time enough to sow in a frame. Sow in pots, and get the plants well established and hardened by the end of May; then plant out.]

White Saxifrage.—*Phœbe, Frome.*—Kindly end us some blooms and a leaf.

1664.—**Soil for Araucarias.**—What is the best soil for the Araucaria imbricata?—H. O. [Good rotten turf in which there is plenty of fibre, and sand.]

1665.—**Liquid Manure.**—Will the overflow from a cesspool (house drainage) promote the growth of and be a desirable manure for all plants, more especially Roses?—HOPBLOOM. [If not applied too strong, and it be given to the plants only when they require it. Gross feeding plants will be benefited by it.]

1666.—**Calceolarias in Frames.**—I have some Calceolarias which have been kept in a cold frame during the winter; should they now be potted off and placed in a greenhouse to promote growth? or are they best left where they are?—ANNITA. [If you require them for bedding out the best way would be to transplant them into another bed further apart than at present; or pot them off, whichever is most convenient; do not give them any heat.]

1667.—**Pennyroyal from Seed.**—Can this be raised from seed?—J. A. A. [No; it is always supplied by seedsmen in the shape of plants, which are very cheap.]

1668.—**Giving Air to Frames.**—I have a frame about 5 ft. by 4 ft., and I want to place the back to the wall; ought the top to be loose? or does it matter whether it is hinged, as this will be more convenient to use? Will it make any difference whether the air passes through the high end or under the front?—L. [Hooks and staples are best, as then the light can be removed when necessary.]

1669.—**Ants in Peach House.**—We are unfortunately troubled with myriads of ants in our Peach house, which are devouring the blossom as it opens, as many as three being found busy at work in most of the blooms, and large numbers of these are in consequence strewing the border. We have tried flour of sulphur, tarred twine tied round stems, bird-lime, and dusting with powered hellebore; but none seems to succeed for more than a day or so, and the mischief continues. Can you help us, and that promptly?—J. B. W.

[The following methods of destroying these troublesome pests have been gathered from various sources:—

Bones.—An effectual way of destroying ants in places where boiling water cannot be used is to lay half-picked bones about. These will soon be covered with ants, and can then be thrown into a vessel of boiling water, after which they should be again laid down to attract a fresh batch of victims. By persisting in the use of this trap a house will be completely cleared of ants in a short time; the sooner, of course, in proportion to the number of bones employed.

Carbolic Soap, Brook's Liquid.—Mix a very small thumb-potful of this liquid with a gallon of water, and sprinkle the ants with it. It kills them instantly; it mixes with the water at once without any trouble.

Flower-pot Trap.—Suppose a colony of ants to be commencing operations on a lawn, it is an easy matter to trap them all by placing a large empty flower-pot, with the hole stopped, over it. The ants will build up into the pot, and in a short time it may be lifted with a shovel and carried away and dropped into a vessel of water, which will make an end of them.

Gas Tar.—When ants make a run up the stem of a fruit tree, a line of gas tar all round will put a stop to their progress, and do no harm to the tree.

Guano.—It is not generally known that fresh Peruvian guano will drive ants from any spot, however firm a hold they may have obtained on it.

Putty.—Mr. E. Whitehead, of Blackburn, strongly recommends putty as a cure for ants. His plan is to put five or six lumps of putty in different parts of the house, when they almost immediately become covered with these little pests. He then takes another piece of putty about the size of a teacup, in a rather soft state, and dabs it on the lumps previously laid down, a plan by which thousands may be trapped in a few minutes.

Raw Meat.—A very effectual plan of getting rid of ants is to place raw meat in dishes or vessels of any kind about places which they infest, and, as they prefer that kind of food to any other, they surround it in thousands. Boiling water is then poured upon them, and this, if persistently applied, with the bait above recommended, will in time effect a good riddance.

Treacled Sponge.—In houses and other places where hot water cannot be poured on the soil without danger to the plants, pieces of coarse sponge dipped in diluted treacle will form a most effectual trap. The ants will crowd into the sponges, which should be taken up from time to time and thrown into a vessel of boiling water. Thick treacle spread on pieces of brown paper is also very effective; they get entangled in the mass when sucking it, and their bodies may be swept off the edges at different times till the nests are much thinned of them.

1670.—**Rose Trees on Grass Plot.**—I have a few standard Rose trees on a small grass plot; should I remove the turf a short distance from the bottom of the Brier? or would they grow better with the Grass close to the Brier?—F. W. B. [If you remove the turf you can put a coat of manure round the trees, but if you let the Grass grow close to the trees you must manure them with liquid manure.]

Gooseberry Caterpillar. — *Constant Reader.*—Much information on this subject has lately appeared in our columns.]

1671.—**Briers for Budding.**—I want to bud some Roses this year myself; is it too late to have Briers in now? How should they be planted? and what age should they be? I want to have dwarf or half-standards. Can you tell me a fair price to pay for them, as I wish particularly to try my hand at growing my own Roses. Also, when should the budding take place? On a light, porous soil which Brier would be most suitable?—W. B. [The Briers should have been planted in autumn. If you can get them you might try. They should cost about 3s. per hundred. Choose clean young stems about as thick as your finger, and see that they have nice young roots attached. Bud from July to end of August.]

1672.—**Currants on Wire Fences.**—If black, red, or white Currant bushes are tied horizontally to wires strained along a north wall, 4 ft. high, will they bear good fruit prolifically?—G. DOWNIE C. ELLIS.—[Red and white Currants would do well so situated, but black Currants are best treated as bushes, as they bear fruit only on the young wood.]

1673.—**Sawdust for Starting Plants in.**—Is this good for the above purpose in summer? and does it injure the plants?—J. S. J. [It will do to plunge the pots in, but ashes or Cocoa-nut fibre would be much better or even sand.]

1674.—**Sowing Asters.**—I have purchased some Aster and ten-week Stock seed. I have only a cold frame; when must I sow?—W. D. [Sow a little now, and the remainder early in April; you will then get a succession of bloom.]

1675.—**Growing Cucumbers.**—What is the best soil to start Cucumbers in, and the best heat to maintain (bottom-heat) when growing them from seed? Do they require much water or liquid manure from the first? (I know they do later on.)—J. D. [A bottom heat of 70° to 75° top heat; 5° lower will answer at this season. Water freely, but not with manure water till fairly established. The best soil is that composed of light turfy loam, and well rotted stable manure.]

1676.—**Cuttings of Tomatoes.**—I see cuttings of Tomatoes mentioned on page 791, Vol. I., of GARDENING. Can they be grown from cuttings? Is there any advantage in so doing?—A. L. S. [Cuttings are generally used for early crops grown in pots. They do not grow so rank as seedlings, and come into fruit quicker.]

1677.—**Propagating Gasterias.**—When is the right time to take shoots from a plant of Gasteria lenque? There are now five shoots ready.—T. C. [Turn the plant out of the pot, and tear off the shoots or suckers. Then pot them in sandy loam and old brick rubbish. Do not water them until the soil is thoroughly dry.]

1678.—**Planting Lapagerias.**—I have a lean-to greenhouse, the roof of which is about 11 ft. high, and apt to draw up the plants; I am obliged to cover with some canvas blinds. I wish to try a Lapageria rosea, and should be glad to know whether it will be necessary for me to remove the blinds when it grows up and is trained on the rafters.—T. SWINBURNE. [The Lapageria likes shade in the summer; therefore, the blind could be left on the roof; but why use a blind now—the very thing that makes the plants "draw"?]

1679.—**Keeping Back Dahlias.**—I have some Dahlias which I started 3 weeks ago. The shoots are now 2 in. long. How can I keep them back, as they will want putting out long before they are safe from the frost?—A SUBSCRIBER. [Take off the cuttings and put them in small pots filled with fine sandy soil; plunge them in a gentle hotbed or put them in a warm frame under a bell-glass or hand-light.]

1680.—**Artificial Manure for Grass Land.**—*F. A. L.*—Try Amies' Manure; you will get directions as to quantity to use from the manufacturer.

1681.—**Propagating Lapagerias and Habrothamnus.**—Can I propagate the Lapageria rosea and the Habrothamnus elegans?—J. P. [Lapagerias are best propagated by means of layers or seeds. Habrothamnus elegans may be easily struck from cuttings put in from May to September.]

1682.—**Ivy-leaved Geraniums.**—I have three of these; how should they be grown—against a wall, or in baskets? and ought the tops to be pinched out?—A. L. [They answer well for both purposes. The points may be pinched back to make them grow bushy.]

1683.—**Tradescantias.**—What soil will suit these? also what kind of flowers do they bear?—A. L. [Some of the Tradescantias are hardy, and bear blue and white flowers. Others are greenhouse creepers, and are grown for their foliage; and there are some upright-growing kinds like Draceenas. The former require sandy soil in an open border; the latter, loam or peat and leaf-mould, and a temperature of 50° to 60°.]

1684.—**Varieties of Potatoes.**—I have bought some Magnum Bonum Potatoes and I always thought it was a white kind; but these are red, and I think it is a mistake, as I ordered some Redskinned Flour-ball at the same time, but they are more like white ones; so I thought the papers might have got changed?—NOVICE. [Magnum Bonum is a white kidney-shaped Potato; Redskinned Flour-ball a red-skinned round variety.]

1685.—**Peas for July.**—I want the names of two good Peas ready for use in July. They must be moderately dwarf, good croppers, with well-filled pods of nice-flavoured Peas.—W. B. [G. F. Wilson, Advance Marrow, James' Prolific, and Veitch's Perfection.]

1686.—**Pumpkins Out-of-doors.**—Is there a hardy Pumpkin that will grow and fruit well out-of-doors? Should Marrow and Cucumber blossoms be fertilised? I do not want to grow them for seed, but for the table. Also is the Italian Bush Marrow as profitable as the Old Long White?—W. B. [There is no hardy Pumpkin, but all the kinds will succeed under the same conditions as Vegetable Marrows. It is not necessary to fertilise the blooms of Vegetable Marrows or Cucumbers, except in the case of seed-saving or very early crops.]

Violet Belle de Chatenay. — *Miss W.* — You can procure this Violet from either of the large nurseries in your neighbourhood.

1687.—**Heating Melon Pit.**—Sawdust is not a good substitute for bark, as it is devoid of any fermenting property. Heating by hot-water pipes is the best suited for Melon pits, or if these are not practicable flues would answer well, and stable manure and leaves mixed make excellent material.

1688.—**Fruit Trees for Sunless Wall.**—*Fauna.*—The Morello Cherry is the most satisfactory fruit for growing in such a position, though some kinds of Plum, such as Reine Claude de Bavay, Kirke's Purple Gage, succeed tolerably well, as also do Red and White Currants for late use.

1689.—**Growing Tomatoes in Frames.**—(*Holly Bank*).—A fresh supply of manure is not necessary for growing Tomatoes. Raise some plants from seed sown in a week or so, and grow them on into as fine plants as possible. Then plant them out in good soil in the frame about the end of April.

1690.—**Standard Roses on Grass Plots.**—I have some standard Rose trees on a small Grass plot. Is it necessary to remove the Grass a certain distance round the Briers in order to better promote their growth?—F. W. B. [Not if the Roses are in good health. Give plenty of manure water when they commence to grow.]

1691.—**Sowing Dactylis and Violets.**—If Dactylis glomerata elegantissima and Viola Admiration be shown now, should the plants be large enough for bedding out in May or June next? [Yes, if they receive liberal treatment.]

1692.—**Growing Caladiums.**—I have a few bulbs of Caladiums. When and how am I to plant them, in what soil, and what treatment do they require hereafter?—T. SPART. [Pot them in a mixture of peat and leaf-mould, with a little silver sand added, or light loam will do instead of peat. Put them in a temperature of 60° or 65°, and do not water too freely until growth commences. Put into larger pots as desirable.]

1693.—**Sowing Sweet Williams.**—These may be sown this month out in the common garden soil.

1694.—**Sowing Lobelias.**—Sow in a pan at once; put it in a frame or small house with a little heat. Prick out in small pots when large enough.

1695.—**Growing Potatoes.**—I have a garden in a sloping position which has the sun on it all the morning. It is about 60 ft. long by 18 ft. wide, soil of a brown colour, about 2 ft. deep, after which comes sand. I am desirous of growing Potatoes, but as I have had no experience I want assistance. If I make drills do I put the sets in the crevices or on the top? how deep? the eyes to be put up or down? what quantity of seed should it take? what sort? and when to plant them so as to have them early?—NOVICE. [Well dig the ground, then draw drills about 6 in. deep, and 2½ ft. apart. Then procure some early Ashleaf Potatoes, and plant them 2 ft. apart, eyes upward, of course. Cover them over, and leave the ground smooth. If the soil is very poor, a little thoroughly decayed manure might be worked in the drills with a fork with advantage, or a little artificial manure might be employed.]

1696.—**Sawdust as Manure.**—What is the value of sawdust as a manure? Will it benefit heavy sand?—F. X. [Yes; if it has been under horses and is decomposed.]

1697.—**Sweet Rhubarb.**—Which is the best and sweetest kinds of Rhubarb? Mine are very acid.—ANDERSTON. [Myatt's Victoria and Prince of Wales are both excellent kinds, the seeds or roots of which may be had from any good nursery.]

1698.—**Best Parsnips.**—*Anderston.*—The Hollow-crowned is an excellent Parsnip where the ground is not deep, and the Student is good for deep soils.

1699.—**The Alum Plant.**—Will some reader kindly give me the proper botanical name of the plant commonly called the Alum plant? the proper soil for it, how propagated, and the general treatment it should receive, especially in winter? Do the plants require watering often, and what heat?—LEARNER. [What is called the Alum root is Heuchera americana, a hardy plant, which grows best in peat soil.]

1700.—**Book on Gardening.**—*Apis.*—Get Hobday's "Cottage Gardening," post free from our office, 1s. 9d.

1701.—**Growing Lettuces.**—Could any one give me a few hints on growing White Cos Lettuces? I have a small handlight, 16 in. square; would it do to sow them in?—YANKEE. [Sow at once under the handlight. When up prick out the plants into a bed, finally planting them out in rich ground, where they are to remain. Later on it will be best to sow where the plants are to remain, thinning them out to the proper distance apart.]

1702.—**Treatment of Hardy Ferns.**—What is the treatment required to keep Daryopteria palmata and Asplenium bulbiferum in good health?—J. W. G. [A compost of sandy loam, leaf-mould, and old mortar rubbish; plenty of water, light, air, and shade.]

1703.—**Old Seed of French Beans.**—I have some Canadian Wonder Dwarf French Beans bought last year, but not sown. Will they do for this year?—F. X. [Yes; perfectly.]

1704.—**Soil for Fuchsias.**—Is it advisable to mix a fair quantity of peat with the soil for repotting Fuchsias? or what is the best soil for this purpose?—W. F. B. [If the soil is heavy a little peat would improve it. The best soil for Fuchsias is turfy-loam, leaf-mould, or decayed cow-manure and silver sand.]

1705.—**Transplanting Czar Violets and Carnations.**—Can these be transplanted now?—VERITAS. [Yes.]

1706.—**Transplanting Seakale.**—I have some Seakale just coming in; will the roots bear transplanting, as I want to move them away? What treatment should they have?—G. P. [Cut the Seakale first, then plant the fleshy roots where you want any future Seakale bed.]

Heating Greenhouse.—*W. H. C.*—We have given columns of information on this subject lately in GARDENING.

Gas Heating.—*J. M. C.*—We cannot recommend tradesmen.

An Amateur's Troubles.—*Herbert.*—See page 508, October 18, and p. 530, November 1, of GARDENING ILLUSTRATED.

Names of Plants.—*Isle of Man.*—Rhodanthe maculata and R. Manglesi (everlasting flowers). Sow in pots or boxes at once under glass. Put five or six plants in a 5-in. pot when large enough, and they will flower in summer.——*G. M. R.*—The winter Heliotrope (Tussilago fragrans); Moss; Selaginella denticulata.——*A. L.*—Santolina incana, sometimes called French Lavender.

QUERIES.

To Querists.—*It would help us greatly now that the number of queries asked each week is so great if correspondents would write all their questions on separate pieces of paper. We get many letters with five or six queries all mixed up on one small sheet of paper. This gives us much unnecessary trouble, and in some cases is likely to be a waste of time and paper to the writer.*

1707.—**Phalænopsis in a Stove.**—I have a stove of mixed plants which is kept at 60° in winter and 70° to 80° in summer; would the Phalænopsis amabilis and P. Schilleriana do well in it? They are expensive to buy, and if they would not grow there I will not try.—J. J.

1708.—**Making a Lawn.**—I am about to make a lawn, and have any quantity of moderately good turf close at hand, only rather foul with Daisy roots, &c. Would "J. P." explain exactly what he means by "pull it to pieces and lay it down bit by bit?" and does he think on a sandy soil near the sea I should do better with his plan than sowing with best lawn Grass seeds?—HOYLAKE.

1709.—**Growing Mushrooms.**—I have a corner in my garden 8 ft. by 3 ft., covered in on three sides and the top, in which I have tried to grow Mushrooms for the last two years unsuccessfully, either from want of sufficient heat or bad spawn. I shall be glad to know how I can hope to succeed.—HORTUS.

1710.—**Worms on Lawns.**—Can any reader tell me what quantity of water, hot or cold, is proper to mix with say ½ oz. of corrosive sublimate to destroy the worms on a grass-plat?—H.

1711.—**Pruning the Arbutus.**—Some of our Arbutus shrubs are bare and straggling, with large stems, and foliage only at the top; would it be safe to cut them right down to the ground to produce a good bush? Or what other treatment should they receive, and when should the operation be performed? The shrubs are near 20 years old.—W. CLIFFORD.

1712.—**Artificial Manure.**—Can any of your readers recommend from experience a good artificial manure for the garden? I have found much difficulty in obtaining rotten horse-manure and want something to fill its place. My soil is partly clay and somewhat stiff.—E. M. H.

1713.—**Cyclamens, Cinerarias, and Primulas from Seed.**—I want to raise some of these plants from seed. Will some friend give me instructions how to rear them?—A. H. J.

1714.—**Worms in Fern Cases.**—My Fern case is greatly infested by worms. Would soot or lime water kill the Ferns, which are just beginning to grow? There is a Maiden-hair in the case.—W GROCOTT.

1715.—**How to Make a Garden Pay.**—I have an acre of garden ground which has been used for a market garden, and which I want to turn to the most profitable use possible. There is no glass, and the ground is poor, with a chalky subsoil. I have carefully read "Multum in Parvo Gardening," or how to make £620 annual profit from one acre, but the reasoning is bad, and the facts no better. If the author would say where he got his bricks at 30s. per 1000 to stand the weather, and his bricklayer at 4s. and a boy labourer who could do the work at 1s. per day, we might be able to realise the happy fact of the cheapness of the walls; but any unfortunate amateur who is led away to make the trial will to his sorrow find the walls cost about double. "Our Farm of Four Acres" is, I find, about the same; the books are written to sell. What we want in books are dates and places given where the several things are obtainable at the prices stated in them, and the markets where they may be sold; so that we can verify the facts, and compare with our own counties. We can then see if it will pay to incur the first outlay of hard-earned savings, and so realise what to many enthusiasts would be like a retiring pension. Can any of the readers of GARDENING give me their experience in this direction?—WANDERER.

1716.—**Packing Trees for a Voyage.**—As I have the intention of emigrating in the course of a year or two, can any reader inform me whether it would be possible to pack fruit trees, such as Apples, Plums, and Pears, also a Vine or two, and a few favourite dwarf Rose trees, so that they would stand a voyage of about four months' duration, say, to the Island of Vancouver, on the north-west coast of America? Also what would be the most favourable time to start so as to ensure the trees growing on their arrival?—EMIGRANT.

1717.—**Rhododendron Leaves Going Brown.**—I planted several Rhododendrons last October, and they seemed to be all right till the frost appeared, when most of the top leaves went brown. Should they be cut back, or can I do anything to them to make them look more agreeable?—T. W.

1718.—**Nitrate for Plants.**—A friend having given me some of this, will some one inform me if it will be beneficial to Roses, and in the flower garden generally? Also what quantity to be used?—NICOLI.

1719.—**New Zealand Flax** (Phormium tenax).—How is this raised from seed?—C. P.

1720.—**Growing the Potato Onion.**—When must I plant, and what treatment must I give to this Onion?—W. D.

1721.—**Culture of Lilium longiflorum.**—I have tried to grow this in pots; I have also planted some bulbs in the open ground, but I cannot get it to succeed with me. Does it require any particular treatment? L. lancifolium and L. auratum do well with me in pots.—M. M.

1722.—**Plants for Unheated Greenhouse.**—I have an unheated lean-to greenhouse, 9 ft. by 7 ft., facing east. What would be the best plants to stock it with? The stage for the plants is waterproof, 4 ft. in front and 4 ft. 6 in. at the back of the floor. What would be the best use I could put the space to underneath? There is plenty of light under. Would a Mushroom bed do? or would it do to keep fowls under?—T. W.

1723.—**Sowing Malope grandiflora.**—What time is best to sow seed of this plant; and what soil do the plants thrive in best, and do they require heat? or will they grow quick in a frame without any? Also as to planting out, appearance when grown, colour, &c.—J. R.

1724.—**Smooth *versus* Prickly Cucumbers.**—I should like to be informed which of these would be the best, *i.e.*, most profitable, to grow in frames without heat during the summer. Would Telegraph give a larger and better crop than the Duke of Edinburgh?—W. B.

1725.—**Blood for Vines.**—I have been told that blood from the slaughter-houses is an excellent manure for Vines. I have been afraid to try it, being ignorant as to the time of year it should be applied, and how.—W. B.

1726.—**Cucumbers in Frames.**—Would some one give me a few hints relative to the management of Cucumbers in a frame? I have the frame and bed ready for planting. What are the best plants to grow?—FRAMEWORK.

1727.—**Cats in Gardens.**—What is a cheap method for making strong bird-lime? or could any one suggest something better to keep cats out of a garden which is walled all round?—ANTI-CAT.

1728.—**Forcing Tulips.**—Will any reader tell me the best mode of forcing Tulip (Duc Van Thol)? I have treated some in every way like Hyacinths. The leaf-spike has run up to the height of 4 in. or 5 in., but there is no sign of flower.—O. T.

1729.—**Cucumbers in Pits.**—I have just built a pit for Cucumbers. Will some reader tell me when I should have it heated with manure, and give me some instructions as to management?—P. L. R.

1730.—**Pruning Roses.**—When and how should such Roses as Baroness Rothschild, Duke of Edinburgh, Annie Wood, &c., be pruned to get them to produce flowers at the end of August for a flower show?—VERITAS.

1731.—**Sweet-scented Plants for Greenhouse.**—Can any one tell me the names of some sweet-scented plants suitable for an amateur's unheated greenhouse? The house is in a sunny position, and opening into a dwelling-room.—A. V. F.

1732.—**Plants for a Shady Landing.**—What plants or flowers would do well on a large, light, airy landing, the window facing north-east? Also what creeper would thrive best there? The sun only shines on the window for an hour in the day in the height of summer.—WOKINGHAM.

1733.—**American Blackberries.**—I have a few plants of the Parsley-leaved Bramble; how should I grow them?—W. B.

1734.—**Effects of the Weather.**—I very much want to know how to treat some Aucubas that have been terribly affected by the frost—in fact, I have to cut them down to about 1 ft. from the ground to get to any sound wood at all; and such is the condition of them all over Notts, and perhaps most of the Midland Counties. Are Deodars ever killed by frost? I have a magnificent specimen that looks as if all the life was gone out of it, with the exception of some branches at the bottom. Can anything be done to help it towards restoration? There is a layer of dead matter, 3 in. thick, all round the trunk, and more is constantly falling. Should this be left?—J. J.

1735.—**Plants for Bees.**—Would quantities of Mignonette planted near a beehive be advisable? I ask this as I have seen it stated that bees never gather honey near their own hives.—W. B.

1736.—**Potatoes for Exhibition.**—I have a garden the soil of which is very heavy. At the annual exhibition of vegetables near here a neighbour of mine invariably wins the prize for Potatoes by putting in the drills with the sets some mixture of the nature of which he refuses to inform me. Can any reader kindly tell me what I can cover the sets with to grow fine clear Potatoes?—AN AMATEUR.

1737.—**Starting Bee Keeping.**—I have been offered a stock or swarm of bees in the spring; would any reader of GARDENING kindly tell me when I ought to have them in? I want to get as much honey as I can the first year. I should like a few directions as to the best kinds of hives, the aspect for them, whether the bees would require feeding, how they should be packed to come 100 miles by rail, the implements, &c., I should require, and any information of interest to a novice in bee keeping; also the probable amount of honey a fairly strong stock, in an average year, should produce. Would it be cheaper to take all the honey, and feed them with sugar and beer in the winter?—W. B.

1738.—**Annuals and Biennials, &c.**—I should like a list of easily-grown and good annuals arranged in two classes, viz., those that admit or are the better for being transplanted, and those that do not bear transplanting; likewise a list of perennials and biennials which could be got to flower this year if sown in March.—EILDON.

1739.—**Sawdust as Manure.**—In GARDENING, Jan 17, 1880, sawdust manure is referred to as being useful for the cultivation of Celery and other garden purposes; will the writer say the method of using it for Celery, as this manure can be got as easily in London as in Manchester? Sawdust is used for the bedding of horses very largely by the London Omnibus Company and other large firms, and the material can be had in quantity by any market gardener or other person desirous of giving it a trial in London.—ONE PREPOSSESSED IN ITS FAVOUR.

1740.—**Treatment of Dracænas.**—How should one of these be treated which has looked very well all the winter in a sitting-room window, but now seems to be going off? It is a broad green-leaved kind, and is in a pot of 6 in. in diameter.—GLADIOLUS.

1741.—**Last Year's Seeds.**—I have a quantity of seeds purchased last season from one of the best seed growers. Will these seeds, if sown during the present season, germinate and grow this year as well as new seed? They are as follows: Lobelia erinus speciosa, Convolvulus major, Portulacca, Pyrethrum aureum, Sweet Pea, Tropæolum Lobbianum, Nasturtium, Ten-week Stocks, Lupinus, aloo-coccineus, Godetia Lady Albemarle, Candytuft, Tropæolum canariense, Virginian Stocks, Parsley, Lettuce, Turnip, and Vegetable Marrow.—FLORA.

1742.—**Fern Cases.**—Does any one know of a good plant suitable for hanging in a small Fern case? Also one or two suitable for climbing round a Fern case, fine-foliaged or otherwise?—ANON.

1743.—**Culture of Kalosanthes.**—Will some one kindly tell me the proper treatment for the above-mentioned flower? I have some last year's cuttings. Former attempts to make them blossom have failed.—F. A. S.

1744.—**Manuring Crops.**—Is a mixture of stable manure and Peruvian guano suitable for placing at roots of Gooseberry and Currant bushes, and would it also be suitable for Potatoes and other root crops? and in what proportions should it be mixed? Is salt a suitable manure to spread on the land, to be dug in and afterwards the above-named manure applied when dug a second time for Cabbages, Peas, Beans, Broccoli, Radishes, &c?—BONES.

1745.—**Cucumber Growing in Warm Greenhouses.**—Will some one kindly give plain and simple directions as to soil, pruning, and the application of manure water to Cucumbers in a warm greenhouse? Also, is sheep's manure good for them? and at what temperature should the house be kept?—W. H. R.

1746.—**Books on Flowers and Forced Fruit.**—I intend entering Covent Garden trade; can any reader give me titles of useful works on fruit and floriculture under glass likely to benefit me, with author's name if possible?—KEIVE. [There is a book on London market gardens just being published at our office which will be of advantage to you.]

1747.—**Shrubs for Various Positions.**—In planting a new garden the great difficulty one finds is the proper positions to set the trees in; to an amateur the high-sounding names fill him with fear and distrust lest the wrong sort should be bought. I have been greatly assisted by the advice given in GARDENING, but am entirely in the dark as to the positions the shrubs should be set in so as to have the tallest behind. Can any one assist me?—WANDERER.

1748.—**Soil for Potting.**—The soil in my garden is a heavy loam, and will not break up. When squeezed in

the hand it oozes through between the fingers. I read that in such cases the addition of sand would render it suitable for flowers in pots; accordingly I dried some of the soil and pounded it up finely, mixing a large quantity of sand with it. Upon drying when in the pots I found it got as hard as mortar, and required as much pounding to get it to pieces as before the addition of the sand. Will any one tell me what to do with it?—J. W. G.

1749.—**How to Make a Herb Bed.**—What aspect should it have? the best time to make it? What are the most useful herbs for a large household? Is it better to put in plants of each kind or to sow seed?—F. G. S. P., *Westbar*.

1750.—**Leather Dust in the Garden.**—Of what value is the above in the garden, and what plants may it be applied to? It is leather which in the finishing of boots by machinery is reduced to dust. I have also a quantity of ashes of leather. Having used waste leather for fuel this winter, I have saved it; there is no coal in it, but a good deal of wood has been burned with the leather. It is very light and powdery. Would this be useful also?—H. N.

1751.—**Mice in Garden.**—All seeds and bulbs in my garden are eaten by mice; and, although I use guards and have soaked Peas in diluted paraffin, nothing stops their depredations. What can I do to prevent such wholesale destruction?—H. A. S.

1752.—**Clematises for Bedding.**—Will someone describe the method of planting Clematises in a round bed? Are the plants to be placed alternate round the outer circle? What are the names of the best kinds for mixture of colour? What distance should there be between each plant? and could Clematises be safely planted at this season?—M. L., *Dublin*.

1753.—**Climbers for Walls.**—I have a Magnolia planted eighteen years ago, very vigorous-looking, and about 16 ft. high. It has never blossomed. I think of taking it out, and should be glad to know of some pretty compact-growing climber to put in its place. East aspect; about 20 ft. in height of wall surface. I have already round different parts of the house Yellow Banksian Rose, Wistaria, Pyrus japonica, Ivy (three sorts), Maréchal Niel Rose, White Jasmine, evergreen Honeysuckle, Monthly Rose, Virginian Creeper. I have had two Virginian Creepers die, but cannot discover the cause. A neighbour has also lost one; they gradually wither downwards.—M. L. B.

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NOTICE.—The frontispiece of "Gardening" for Vol. I, a coloured plate of Rose Marechal Niel and La France, is now ready, and may be had through all newsagents and at the bookstalls, price 3d. with complete index. Readers should request that it be delivered flat and unfolded, to avoid injury to the plate.

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GARDENING ILLUSTRATED.

VOL. II.—No. 54. *SATURDAY, MARCH* 20, 1880. PRICE ONE PENNY. REGISTERED FOR TRANSMISSION ABROAD.

DAFFODILS.

THESE, the hardiest and showiest of spring flowers, are now making a display in garden, field, and meadow; and, though often looked upon as common flowers, there are no plants more worthy of being well planted and cared for in our gardens than the various species of Daffodils, of which there are now a host of most beautiful varieties. They vary so much in size, colour, and form, that a most attractive garden may easily be made with Daffodils alone. Many of the Daffodils are used extensively for culture in pots, and they may be seen in our markets in quantity as early as February. There are but few species or varieties of Daffodils that will not succeed under ordinary circumstances in the open border. A few kinds—principally from Algiers, Spain, and the islands in the Mediterranean—flower mostly during the autumn and winter, and consequently are not adapted for outdoor cultivation, except in very favourable situations. Fortunately, however, there are, as we have said, but few of this character; the great bulk are not only perfectly hardy, but will grow in almost any soil or situation, and increase in numbers rapidly. By means of hybridisation, too, it is possible to obtain varieties much superior to any yet in cultivation; and the process is so simple that any one may practise it with a fair chance of success. Indeed, by this method many very beautiful kinds have been raised within the last few years. Most of the Narcissi, as the Daffodils are called, prefer a good rich, friable loam, annually enriched by a top-dressing of manure; but care must be taken to keep the manure away from the bulbs while in a fresh state. The small early-flowering kinds should be planted in sandy loam, and in rather drier positions than the more vigorous forms. All this family require replanting every three or four years, some even in two; but this depends a great deal upon the conditions under which the bulbs are placed. The best criterion as to when they require replanting is the production of small, weak foliage and a scanty proportion of flowers. When that occurs one may make sure that the bulbs have exhausted the soil, and that they have not sufficient room and strength to fully develop themselves. When this lifting process takes place, before replanting, the whole of the soil should be well dressed with old manure and be thoroughly dug or trenched: if the latter, let the ground be moderately well trodden over to firm it, as the roots of all plants—and more especially of our Daffodils—like to fight their way against a pretty solid resistence; and remember that the popular notion of lightness in the texture of the soil being beneficial to root development does not always prove true. Rarely do we find the roots of the Narcissi inclined to branch; and as a result, when the growing point becomes injured the root really ceases to be of any value towards the sustentation of the plant, as decay sets in and the entire root soon disappears. When, therefore, in removal more than one-half of these delicate feeding processes are virtually destroyed—which is sure to be the case if they are developed to the length of half an inch—it will not be at all surprising that the plants receive such a severe shock as to cause blind and imperfect flowers. These may also originate from another source. The beautiful old-fashioned double Pheasant's-eye Narcissus, a favourite with every one, alike for its purity and its perfume, is one especially liable to this when it has been grown for many years in the same locality. This arises from sheer exhaustion of the soil, and may easily be guarded against by a winter's dressing of nice short rich manure, or by a few copious waterings with diluted liquid manure during the spring growth. The former is preferable, as it answers in the double capa-

GROUP OF CYCLAMEN-FLOWERED DAFFODILS (NARCISSI).

city of protector and stimulant. The roots of all these plants are in a vigorously active state during the entire winter. Hence it is advisable that they should have their stimulating dose early, and that it should be gentle and constant. There is no place where the Daffodil does better or looks more lovely than when springing from the Grass: there, if he nods his head beneath the weight of the accumulated moisture of a succession of spring showers, no taint of Mother Earth tarnishes his purity—nay, rather, he rises again with returning sunshine, fresher and brighter for his bath. On trim-kept lawns, where the very first growth of the green sward calls into existence the noisy rattle of the mowing machine, groups of Narcissi are not by any means happy; but let us ramble beyond the precincts of culture and cast a glance at a group in the open field, or adjacent to some shrubbery where the scythe but once a year steps in to Nature's assistance, and what do we find? The leaves rise green to the tip, from a mass of mingled Moss and Grass, interspersed with the bright brown foliage of the Beech or the paler Oak, whose various tints lend a contrast to the fresh glaucous hue of the Daffodils. But, besides adding to the beauty and harmony of the picture, these adjuncts, combined, have fulfilled the purpose of admirably protecting the buds in their early growth, and now combine to support the slender leaves against the mutilating influence of the wind, and, further, in the decay of the withered Grass and leaves below are assisting to restore the elements of fertilisation to the soil.

The margins of shrubberies are amongst the best places in the garden for the Daffodil; there are always little indentations—natural irregularities arising from the difference in growth of adjacent shrubs—where the mowing-machine does not come; corners, we may say, still sacred to the scythe. In these, with admirable effect, may groups of Narcissi be placed, where respect can be paid to their leafage, so that it be not cut over before it naturally fades away. Do not obtrude them on the lawn in scattered patches, where they but mar the quite repose of the green sward. Whether it be a rootery or a rockery, or a combination of all together, our Narcissi will also be found quite at home. There will be presented all the elements of successful culture, and there they will find happy associates in the wood Forget-me-nots, the variegated Dead Nettle, the Wall Cresses, the Aubrietias, and a host of similar plants, not to mention the bright Moss-covered nooks and crannies rich in the verdant colour of their delicate tracery. Here then may a collection of Narcissi be maintained in a natural condition, each sort grouped by itself, with an unobtrusive number, by which, on reference to your note-book, the name and history of each variety may be obtained.

The woodcut on our front page represents some of what are called Cyclamen-flowered Narcissi, and, though too delicate to be planted generally, they are well worth culture in warm sheltered districts; and they also make excellent plants when grown in pots for the greenhouse. The names of those represented are N. calathinus pulchellus, the creamy white N. calathinus, and N. triandus. Daffodils are now largely cultivated in nurseries, among which we may mention those of Messrs. Dickson & Sons, of Chester; the Lawson Nursery Company, Edinburgh; Mr. Smith, Newry; Messrs. Backhouse & Sons, York; Messrs. Barr & Sugden, Covent Garden; Mr. Ware, Tottenham; and Mr. Parker, Tooting; and as this is the time the Daffodils are at their best, those wishing to make a selection could not do better than visit the nearest nursery to them, and choose for themselves; or any nurseryman who makes them a speciality will send a varied and good collection for any stated purpose at a cheap rate on application.

The Dog's-tooth Violet (Erythronium Dens canis).—The flowers of this droop somewhat like the Cyclamen; and, though a very small plant, it has a flower of a lovely rosy-lilac, so large as to remind one of those tropical climbers more than of a true Alpine flower, which it is. The foliage, also, is singularly unlike any other Alpine flower, being deeply spotted with brown, so as to resemble some of the fine-foliaged plants popular in our stoves. This flower is the Dog's-tooth Violet, long known as an inhabitant of our gardens, but which, with many other flowers, has been for some years so neglected, that it was only in a botanic garden, or curious collection here and there, that one ever caught a glimpse of it. There is no flower known more worthy of a place in our gardens. It has several beautiful relations, mostly natives of America, but as yet scarce in our gardens. They will probably not be long so, as the fine E. grandiflora is abundant in the Rocky Mountain and Utah region; while the yellow Dog's-tooth Violet is as common among the wild herbage in many parts of the Eastern States as the Daisy is in our lawns. In our gardens the Dog's-tooth Violets thrive best in warm sandy soils; indeed, the beautiful European kind, the finest of all, is only seen in perfection in warm soils. It will grow in any kind of soil, but on cold clays one must frequently be content with the beauty of the leaf only, as the blossoms are not formed. Where clay soil occurs naturally, it is best to grow the plant in prepared soil, in a raised position, in the lower parts of the rock garden or hardy Fernery. Where sandy peat or free loam admits of its thriving perfectly, the Dog's-tooth Violet should be abundantly grown among the

Dog's-tooth Violet (Erythronium Dens canis).

bulbous flowers that bloom in early spring, and it will look well either in clumps or small beds, or as a carpet beneath choice American shrubs in peat soil. The leaves die down more rapidly than those of most bulbs, and care should be taken that it is not injured by accidental disturbance. As a carpeting plant to small beds of choice growing shrubs, it would probably be as little liable to accidental destruction as in any other position. The roots of this plant suffer from being kept dry; and therefore they should, when taken up for any purpose, and not replanted soon, be stored in Cocoa-fibre or wet sand. We have never seen this plant in such good condition as in Messrs. Barr & Sugden's trial ground at Tooting, where large beds of it are studded over with its showy blooms. Mr. Barr cultivates the following varieties:—E. Dens canis album, majus (red-purple), majus roseum (rose-purple), majus album (white, bottom of flower brown), and passiflora (light purple, shading to blue).

Daisies in Towns.—In densely inhabited districts where other spring flowers do not flourish these will grow and yield a continuous round of blossoms for a lengthened period. As regards colour they combine every shade from the purest white to the deepest crimson; they are plain and quilled, and often singular as regards growth, as, for instance, Hen and Chicken Daisies. Hyacinths and Tulips are beautiful, but short-lived, a remark which also applies to many other spring flowers. Aubrietias, Arabis, Pansies, and many others often damp off under the dull smoky atmosphere of London; therefore when we possess such a staunch friend as the Daisy we should make as much use of it as we can. During ordinary winters Daisies are

Double Daisy.

seldom without flowers, and they will continue to bloom until removed to make room for summer bedding plants. A packet of seed costing a mere trifle will produce hundreds of plants. The seed should be sown in shallow boxes in light sandy soil any time during June, and the boxes should be placed in cool shady frames after a good soaking of water has been given them. The young plants soon make their appearance, and when sufficiently large to be handled they should be pricked out in the open ground 2 in. apart, giving them at the same time a thorough watering. Daisies love water, and are very tenacious of life. They rarely die even if thrown on the surface of the soil, provided there is an abundance of moisture. They grow rapidly and soon become a solid mass, when they can be taken up like turf. They should then be divided and planted in the beds where it is desired they should bloom from 4 in. to 6 in. apart. In February they commence to grow, and by the first week in March they are in full flower; and, as already mentioned, continue so incessantly until removed in May to make room for bedding plants. It will thus be seen that our beds might be carpeted with flowers at a season when blossoms are extremely scarce, and that at little trouble or expense.

Hardy Flowers for Profit (1589).—Those who lay themselves out to grow hardy flowers for sale should restrict themselves to a limited number of kinds, choosing only those which are always more or less in demand, and which are distinguished for their exceptional beauty. This remark especially applies to those who, living at a distance from thickly-populated places, would have to depend upon customers coming to or sending to them from a distance. There is, for instance, the Christmas Rose, which may be raised with ease from seed if sown as soon as ripe. This beautiful winter-flowering subject is always in demand, and fair remunerative prices may be obtained for it. Its variety Maximus should also be secured. Then there is the Pansy, of which, if a choice selection be secured, the young seedlings or cuttings may be

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disposed of. The great point is to grow only the very best varieties, so that the seedlings may be recommended as of superior quality. Bedding Violets, too, are in great request, and are of easy propagation. Spiræa japonica and Lily of the Valley are favourite plants for forcing, and if grown liberally will increase rapidly. I would, however, advise as a speciality the culture of the many beautiful forms of Primrose. Those who can get a stock of them will find no difficulty in disposing of them. A large nurseryman lately informed me that he found it impossible to procure enough of the better kinds. The finest varieties being kept true to name and propagated by division, the seed may be saved, and a quantity of young plants raised which would find a ready sale. In the neighbourhood of a market town the bright-flowered, free-growing kinds of Polyanthus would be easily disposed of, as would also nice little tufts of Myosotis dissitiflora, Aubrietia purpurea, Daisies of kinds, Campanulas carpatica, turbinata, and garganica, Gentiana acaulis, &c. Anemone japonica and its white varieties should also be included in the list which may be disposed of in the trade. There are other good things besides those enumerated, but none better or more likely to command a sale.—J.

Neapolitan Violets to Bloom in Winter.—Divide the old plants after blooming in spring, and plant the runners on a cool border in rich light soil. Plant in lines a foot apart, and 10 in. from plant to plant in the row. Keep the surface stirred, and give copious waterings in dry weather. In September, take the plants up with good balls, and plant them in a frame near the glass in a sunny and sheltered situation. Give plenty of air when the weather is severe, and keep off the lights altogether in mild autumn weather.—O.

French Lavender (Santolina incana).—This is one of the most useful of plants for forming edgings or divisional lines, and, being of a whitish-grey tint, it may be employed in many varying combinations. Its habit of growth is neat and compact, and, being hardy, it especially commends itself to those who have but a limited amount of glass structures. I put some cuttings of it in under hand-glasses or lights in September which will make excellent little bushy plants for furnishing beds this spring. By having a good supply of this, and such plants as Violas, Polemonium cœruleum, Golden Thyme, and similar plants, bedding-out, as it is called, becomes a more reasonable affair than when all the subjects employed are tender.—J.

Sowing Sweet Peas.—Sowing these where they are to bloom is much to be preferred to sowing them in pots or boxes; and if I were asked to name a time at which to sow them, I should say the middle of March, if a good long season of bloom be wanted. Last year I sowed at the time just named in the open ground, and also a few in pots, for the sake of experiment, in soil well prepared. Those in pots I put under glass, and when up hardened them off in a cold box pit, afterwards planting them out beside the others. Those sown in the open ground commenced blooming as soon as those from pots, were much stronger, yielded much the largest quantity of bloom, and continued longer in that condition; in fact, they bloomed till the flowers were killed by frost. I find that if one wants them to bloom for a long time continuously, it is a good plan to cut off any pods that may form on them as soon as they are visible, as the pods if left on the plants exhaust them, and they soon cease blooming profusely.—C. F.

Spring Bulbs in Rose Beds.—For several seasons, after having flowered our bulbs in pots, we have planted them out in beds, and banks of Roses, and the two certainly appear to advantage together, as the bulbs give a bright cheerful appearance to beds which at this season would be nearly bare. As the Roses are pegged down, only the strongest young wood of the preceding year's growth is retained at pruning time, and the Roses may be set at tolerably wide distances apart, which allows ample space for a few clumps of Hyacinths Narcissi, or Tulips, while a good margin may be allowed for an edging of Crocuses, Snowdrops, or Squills. We annually top-dress but never dig the beds, and the bulbs are nearly ripened off before the shade from the Roses becomes dense enough to injuriously affect them.—J. H.

VEGETABLES.

HOW TO GROW ENDIVE.

Endive is not much grown in small gardens, but it is an excellent salad and quite as easy to grow as Lettuce during summer. In order to have Endive in its highest state of perfection liberal treatment is necessary, both as regards soil, manure, water, and timely attention to blanching. The first crop to be grown in the open air should not be sown earlier than the end of May, as early-sown plants run to seed; other sowings may be made at intervals of a fortnight up to the end of August. The seeds should at all times be sown on fine, rich, moist soil, and they may be either put in broadcast or in drills. Many adopt the latter method, and thin out the plants to the required distances apart, instead of transplanting them, as is generally done; and in the case of early crops a decided advantage is thereby gained, inasmuch as thus treated the plants are not so liable to run to seed as when subjected to transplantation. In any case the soil containing the plants should be kept in a moist state by means of frequent waterings through a fine rose if the weather be dry; weeds should be promptly eradicated as soon as they appear. Thin out the plants as they advance in growth until they are 3 in. or 4 in. apart, after which they should be allowed to remain until several leaves are made, when they may be carefully lifted from the seed-bed and transplanted where they are intended to remain. Early and late crops do not require so much room as those

The Batavian or Lettuce-leaved Endive.

that are fit for use in the middle of summer, but the average distance will be found to be about from 12 in. to 15 in. each way from plant to plant. It must, however, be remembered that the Batavian Endive always requires more room than the curled-leaved varieties. Previous to planting the ground should be deeply dug, and well enriched with good rotten manure. In very dry seasons copious waterings will be necessary, in order to keep the leaves in a quick-growing and consequently crisp and brittle state, which latter is most essential to flavour and general excellence. Weak manure-water occasionally applied to the roots, without wetting the foliage, will be found to greatly assist their growth.

Blanching is generally done two or three weeks previous to the heads being required for use, but if, as should be the case, the plants be allowed to attain nearly their full size before blanching takes place, eight or ten weeks must elapse from the time of sowing before blanching is attempted. Many ways and means of blanching are resorted to, the most common being that of laying the leaves together in the same way as in that of Lettuces; if tied in two places instead of one, as is often the case, *i.e.*, one in the middle and one at the top, the blanching will be more complete than it otherwise would be. Some invert flower-pots or Seakale pans over the plants, which is, perhaps, the least troublesome method of any. Others cover the heads entirely with dry soil. Straw hurdles, too, put over the plants in such a manner as to exclude light from them, is a very easy and effectual way of blanching; and by continually moving these onward, as the heads are cut, a successional supply of well-blanched Endive may be secured. No more than is likely to be used should be blanched at a time, inasmuch as after a certain period flavour and crispness gradually decline. Flat tiles or slates are also sometimes used for blanching, first pressing down the hearts of the plants with the hand, and then applying the tile or slate, afterwards covering the whole with earth or dry straw. Whatever process of blanching may be preferred, it should at all times be done when the foliage is dry, otherwise discoloured or rotten hearts will be the result. Taking all things into consideration, there is perhaps nothing better for blanching Endive than the common flower-pot, or seed-pans without holes in the bottom.

There are two distinct types of Endive—one with narrow curled leaves, the other with broad leaves like those of a Lettuce. The curled-leaved varieties are the handsomest looking, and are more easily blanched than the broad-leaved kind. The leaves of the latter are, however, more crisp and better flavoured than those of the former. Amongst the best of the curled-leaved kinds may be mentioned Digswell Prize, Gloria Mundi, large Green-curled, and French small Green-curled. The last-named is only fit for early and late sowings. The best of the Batavian kinds are green Batavian, Round-leaved Batavian, and the white Lettuce-leaved Batavian.

Sprouting Potato Sets.—Though this is a common enough practice, it is not so frequently observed as it ought to be. Sprouting the sets is of the greatest importance in unfavourable seasons, when planting cannot be proceeded with, and also in late and cold situations. Sets sprouted about this season and planted out in April or even in May, will produce a crop weeks before those planted without sprouting, though the eyes may be moving. Sprouting, however, requires to be done in an intelligent manner. It is a bad plan to start the tubers in strong heat, as in that case the shoots come weakly, and after they are put out, even if hardened off previously they often go off by canker or damping. A cellar is as good a place as any in which to start seed Potatoes, if a little light can be admitted to it, as the temperature is usually high enough to cause the sprouts to move gently, and if the Potatoes be spread out thinly upon the floor the sprouts will not be weak and drawn.—S.

Dwarf Peas for Small Gardens.—Inquiries as to what are the best sorts of Peas for small gardens, kinds that want no sticks, are so often addressed to me that I have no doubt there are others beside my correspondents to whom the information would be welcome. Advancer is the best early dwarf Marrow. For a middle crop use Maclean's Wonderful, and for the latest, Laxton's Omega. These are the dwarfest of their class. Another good selection, rather taller, but still classed as Dwarf Peas, are Princess Royal, Premier, and Veitch's Perfection. All of these produce Peas of the very best quality.—A.

Onion Seed.—A Bedfordshire grower of seeds has land in this locality, and grows here a considerable crop of Onion seed annually. He plants the bulbs at this season, or earlier, in rows running from east to west, about 6 ft. apart, and utilises the intervening spaces for the growth of ridge Cucumbers or Gherkins, but the latter chiefly. The Onion bulbs are planted in the rows as close together as is consistent with good growth, and when the stalks are fully grown they form shelters both from hot sun and wind for the Cucumber plants. When the centre pods are ripe the heads of the Onion seed are cut and dried off in the sun, the stalks being allowed to stand until the Cucumber season is over.—Hounslow.

Vegetable Marrows on Refuse Heaps.—This useful vegetable may be grown in the greatest abundance on ground that could scarcely be utilised for any other crop. Our plan is to collect all refuse, such as sweepings of lawns, walks, &c., in pits during the year, and wheel it into one large heap during frosty weather in winter. The most decayed portion, "like leaf mould," is placed on the top, and a good covering of old potting soil is spread over the whole. On this heap plants of either the Long Green or Custard Marrow, raised in heat in March, and hardened off, are planted under hand-lights, which they quickly fill, when they are raised on bricks, and the shoots trained out regularly over the bed. The only attention which they require is watering during periods

of drought, thinning the foliage and shoots when crowded, and cutting all fruits as soon as they are large enough for use. Thus treated, they never fail to produce abundance of fruit until the early frost cuts them off. The whole heap is by this time in good condition for trenching into any stiff fresh broken land, which is greatly improved by additions of this sort of compost. —D.

Transplanting Onions.—If not already done, no time should be lost in getting a good breadth of autumn-sown Onions planted in good rich soil, 9 in. apart each way, for summer and autumn consumption. In lifting the plants care must be taken to get the roots up as perfect as possible by loosening the soil with a fork as deep as their extremities, and holes also should be made deep enough to drop them into full length. Thus treated, they will start at once into active growth. The most popular sorts for autumn sowing are the Giant Rocca and Globe and Flat Tripoli, but the mild flavour for which they are esteemed depends very much on their culture. —H.

Hints on Turnips.—On some soils, raising very early Turnips is a difficult matter, as, when the young plants have passed through the vicissitudes attending their early existence, unless carefully managed they may run to seed at the very time when they ought to be ready for use. Under these circumstances, unless the land be peculiarly well suited for Turnip growing, April will be early enough to make the first sowing. A sprinkling of superphosphate applied at the time when the seeds are sown will also make its presence known by pushing on the crop, and should never be omitted where the fly is troublesome. Sow in drills 1 in. deep, 1 ft. apart, and thin the plants out to 1 ft. asunder in the rows. During hot weather, for the successional sowings, the drills should be drawn a little deeper, and they should be thoroughly soaked with water before the seeds are sown. If the latter lie too long in the land, the plants always come patchy and weakly. As regards varieties, there is no better all-round Turnip, for either large or small gardens, than Red Globe, and especially for an unfavourable soil in a dry season. Silver Ball is a very handsome Turnip for early sowing, and the Chirk Castle Black Stone is very hardy, and may be sown towards the end of July or beginning of August for standing the winter. Where a succession is required, it is better to sow a small bed every three weeks than to sow a large one at long intervals. When the early Potatoes are lifted, Turnips may be sown immediately on the land so cleared without much preparation of the soil, beyond levelling it and giving it a sprinkling of some artificial manure.

French Beans.—These are fond of well-pulverised, sweet, rich soil. They should not be planted till the middle of April in the open garden (as on account of the damp, cold state of the soil they are liable to rot), and then only on warm, sheltered borders, or in places where they may be sheltered and protected from the cold wind and morning frost. My own plan to obtain an early, even, and prolific first crop out of doors, was to sow in a frame, or under a hand-glass, or in a box or pan placed indoors, or under shelter; harden off and transplant on a warm border or quarter, well prepared, in trenches or on the flat, with a ridge of earth cast up for shelter on each side, and protect them by night and in cold windy weather with light straw mats, evergreen boughs, Fern, Pea haulm, or any similar materials. This shelters and forwards the crop very considerably. The following have been proved to be good varieties:— Light Dun or Cream-coloured, Mohawk, Dark-speckled, Negro long-pod, Sion House, Osborne forcing, Newington Wonder, Dark Dun, Fulmer's, Robin's Egg, Early White, and Wilmot's Early forcing.—B.

Prizes for Vegetables.—Messrs. Webb & Sons, of Wordsley, Stourbridge, offer prizes for competition at the principal horticultural and agricultural shows to be held in 1880. At the Royal Horticultural Society's meeting at South Kensington on June 29, a prize is offered for a collection of six distinct kinds of vegetables; at the International Potato Show for specimens of Schoolmaster Potato; and at the Royal Oxfordshire Horticultural Society's Show at Oxford on July 21 for a collection of six distinct kinds of vegetables.

ROSES.

Work to be done to Roses now.—Roses in most gardens are now in so forward a state as to necessitate immediate pruning in order to have dormant eyes to prune back to. The present time is considered, I believe, by amateurs early for the operation; but, from considerable experience on a very large scale, I think pruning should be done earlier in the season than it is in general. The season will somewhat modify the pruning. One must prune back closer than ordinary to have a good unshot eye to start with. Thin the shoots well out, leaving no wood in the head that is not healthy and fairly vigorous. Study the individual habits of the Roses, the catalogue descriptions of vigorous, robust, and moderate being in some sense guides. For instance, Maréchal Vaillant, a vigorous kind, does not bloom if cut in close. Its shoots require to be left at least 1 ft. to 1 ft. 6 in. in length. Robust Roses, as Madame Vidot or Baroness Rothschild, with short stumpy wood, should be pruned to a prominent bold eye—the best on the shoot, high or low. The small wood of these sorts never yields blooms worth having, and must be cut clean out. Moderate Roses, as Mdlle. Bonnaire or Xavier Olibo, need close pruning. They may be cut in almost to the old wood—quite so when the shoots are weak. The eye to which the shoot is pruned should, if possible, look outwards. If this rule is followed, a hollow head will be formed, allowing air to

The Damask Rose.

circulate well amongst the foliage and flowers. Prune, if possible, after a day's drying weather, as if the ground is in good order Roses do not bleed badly. Choose likewise fine weather to dig the ground, turning in some manure, unless this has been already done, when a mulching of some short horse manure (road droppings, fermented by having been in a heap, are good for them) may be applied early in April. Make good all vacancies in borders where the kinds to be planted are Hybrid Perpetuals, Noisettes, and standards of the Teas, and reserve places for dwarfs of Tea Roses, which are better planted from pots in May. In the forcing houses a few kinds started in November will be just opening. Souvenir d'un Ami, Madame Falcot, and the white Hybrid Perpetual Marquise de Montemart, are amongst the first. Where plants are just breaking syringe twice a day, which will also supply almost sufficient moisture to the plants; 55° to 60° is a good day temperature, which may fall to about 50° at night. All pot Roses should now be pruned, as after May, grown under glass, they do not compare favourably with the early flowers from out of doors. It is well, therefore, to get all pot Roses over by the end of that month. Pot Roses should always be pruned some days before being started, however slowly, into growth.

Rose Insects.—There is one difficulty inseparable from the cultivation of Roses, and that is their liability to insects; the three principal with which the grower has to contend are aphides, the Rose maggot, and red spider. As these, like all other insects, are much more easily kept down when attacked as soon as their presence is detected, no time should be lost in washing the trees. A good syringing with Quassia water will kill them; but, for its effects in destroying both the mature insects and their eggs, and also in rendering the newly-expanded leaves distasteful to them, none of the many remedies prescribed are equal to Tobacco-water to which has been added 2 oz. or 5 oz. to the gallon of Gishurst compound. The influence of this is such as to correct the oily nature of Tobacco-water in a way that makes it stick to the affected buds and leaves much better. From the insect-destroying properties of the Gishurst itself, the Tobacco-water when used with it may be employed much weaker than when applied alone. A dry day should be chosen for the work, which will enable the wash to adhere to the leaves better. A timely application of this sort will be found of considerable use in preserving Roses from the maggot, rendering the young leaves which are first preyed upon distasteful to the grub. The advantages of syringing and dipping the shoots of Roses affected in this way over dusting them with any powder disagreeable to the insects, is that it reaches all parts much more effectually with less waste.

Banksian Roses.—Our Banksian Roses are always exceedingly floriferous, so much so as to be literally white with blossoms every year, unless they get cut off by frost. We prune them hard in as soon as the flowering is over, and then during the summer we cut out all the strong growth and thin that of medium size, so as to let in plenty of sun and air to thoroughly ripen it. The young shoots made under this treatment vary from 1 ft. to 1½ ft., and bloom at every bud, thus forming perfect wreaths of a length most serviceable for cutting. I ought to add that the plants referred to are on a south wall, where they cover a large space. Anyone having their plants in similarly favoured situations may, by managing them in the same manner, have any quantity of flowers; and the same holds good with such Roses as Maréchal Niel, Gloire de Dijon, Climbing Devoniensis, and most others of that class.—S.

Mulching Roses.—Covering the surface of Rose beds with rotten manure is of the greatest importance to secure a satisfactory crop of flowers during the current season, and equally necessary to the production of strong growth for the ensuing year's bloom. This is especially the case in dry situations, where the soil becomes parched during the summer season, and is much more effectual than the application of even an unlimited quantity of water alone, and is quite independent of the body of soil in which the plants are grown having been previously well enriched. The applying of manure in this way to standards, half-standards, and such as are grown bush fashion may be delayed some weeks; but with those that are grown on their own roots to be pegged down, the mulching should be put on directly the pruning is completed before the shoots are pegged in the positions they are to occupy, or it cannot be conveniently done afterwards. Previous to this, as soon as pruned, the beds should be forked over, pointing in at the same time any manure that may be needed to incorporate with the soil.

London Market Gardens.—Mr. Shaw's book on London Market Gardens will be ready next week and is published at our Office. He tells the facts respecting the culture of vegetables, flowers, fruits, and plants for the London market as they have not been told before. The author is familiar with the subject about which he writes, and is well acquainted with practical gardening. His book will, we feel, be sure to meet a want. The following article on the culture of Moss Roses will convey some idea of the kind of information the book contains:—

"In July, Moss Roses form a most attractive feature in our flower markets, large piles, baskets, and bunches being found at every turn. The white kind, though not common, is used for bouquets, and two or three red and pink sorts are supplied in enormous quantities; indeed, there is always a great demand for Moss Roses in our markets. The old Provence Roses, too, are, during summer very plentiful and in great

demand, and buds of the White Provence are very beautiful. The common Moss Rose, so well known in our cottage gardens, is not very largely cultivated by market gardeners, the reason being that it is neither robust nor floriferous enough for market purposes. The variety most preferred is a deep red kind, which, though less mossy than the common sort, produces blooms in much greater abundance, strong shoots bearing from eight to ten buds, all of which open well, at one time; but they are never allowed to be too much expanded before they are cut, as in that case the mossy portion would be less noticeable and the value thereby reduced. To supply the great demand for Moss Roses, many market gardeners round London devote several acres of land to their culture. They are, however, seldom all grown on one spot, but are distributed about in patches, some being in a warm border sheltered on the north by a wall, hedge, or row of fruit trees, others growing right under orchard trees, and the main crop is usually found in open quarters. This arrangement is admirable, inasmuch as it affords a lengthened season of cutting. The border plants furnish the earliest blooms. These are succeeded by those under the fruit trees; and the late blooms are furnished from plants unprotected. Moss Roses are cultivated much after the same fashion as the Raspberry, with this difference that the old wood of the Roses bears a crop two or three years in succession before it is cut away, whilst that of the Raspberry is cut away yearly. Well established plants are, however, so productive of young growths at their bases, that it is found necessary to keep the bushes well thinned of the old wood as well as of the weakest of the young shoots. Moss Roses in market gardens are grown on their own roots, and it is probable that no form of budding or grafting on any kind of stock would give the fine results obtained from these plants. They thrive well under orchard trees and form one of the most renumerative of under crops; for, with the shelter which the overhanging boughs afford them, frost does them but little damage, whilst those growing in open quarters often suffer severely from late spring frosts. The plan by which the plants are sometimes increased is to lift the old stools and strip off the outside shoots, which are freely produced, and plant them in rows 2 ft. apart each way in good soil. During the first two years after planting dwarf-growing vegetable crops are sometimes taken from between the rows, but after that time, if the Roses have done well, they require all the space. During winter, as already stated, a portion of the old wood and the weakest of the young growths are removed. Robust shoots, too, are shortened back, the soil is lightly forked over, and a good mulching of rotten manure applied. In this state the plants remain until the buds are ready for cutting, when they are gathered every alternate morning for market, the whole truss being removed at the same time with a few leaves attached. Some growers plant Moss Roses between bush fruit trees, but it is not a good practice, inasmuch as in a short time they form a complete thicket, much to the injury of both crops. Where no fruit bushes exist the rows are intercropped with Brussels Sprouts, Shallots, Broccoli, or some similar crop. The strongest shoots of Rose trees after blooming are sometimes layered on both sides of the row and firmly pegged down; and during the summer these layers, which will have rooted, are lifted, and after being trimmed are planted in rows, as before described. By this method healthy young plants are obtained without in any way destroying the existing plantations. Moss Roses and Pheasant's-eye Narcissus are sometimes grown in rows alternately. The Narcissi are generally over before the Roses are in leaf, and thus neither crop is in any way injured. In the middle of July at nearly every corner of the streets of London may be found vendors of Moss Roses which have been surrounded by a little Fern or their own leaves, and wired ready for the coat. The sale is immense, and good profits are gained by the vendors. The usual price is 1d. each, or a bunch of from eight to ten may be bought early in the morning for 6d. in the height of the Rose season."

A Garden in the Desert.—A gentleman owning large mills in a smoky part of one of our manufacturing cities has converted his premises (as unpicturesque in themselves as such premises usually are) into something resembling a fair garden. The sides of the mills are planted with Virginian Creepers, which stand the smoke admirably, having one advantage over Ivy—that they renew their leaves every year. All the spare corners of the yard are turned into beds or rockeries and planted with flowers suitable to the climate. The "hands" are also encouraged to grow plants in the windows, where they flourish as well as in private sitting-rooms. I wish that other masters would adopt the same idea, so that the ugliness and barrenness of our large towns, as well as the monotony of factory life, might be cheered even in a small degree by the introduction of a little natural beauty.—E. R.

THE SHRUBBERY.

The Cyprus Gum Cistus (Cistus cyprius).—This forms a hardy sub-evergreen shrub from 4 ft. to 5 ft. high, and produces flowers profusely in succession during the months of June and July. It is a native of the Island of Cyprus, where it grows on hills; it will, however, succeed in any good garden soil that is rather dry, and is easily increased either by means of seeds or cuttings. The upper surface of the

Gum Cistus (Cytisus cyprius).

leaves is smooth and deep green, and the under one clothed with hoary down. The branches are long, slender, and rather spreading, and the young shoots smooth. The flowers, which are produced in great abundance, are from 2½ in. to 3 in. across; they are five-petalled, pure white, with a dark rich brownish crimson blotch near the base of each petal, and orange-coloured at the base. The blossoms, in fact, resemble a large single Rose, but are of short duration, only lasting, in general, a single day. The fruit is a dry five-celled capsule, more or less covered by the calyx, and ripens in September. The Cyprian Gum Cistus forms a splendid plant for ornamenting rockwork or dry banks, but it requires to be fully exposed to the sun, as the flowers only expand under the influence of bright light. This species, which may be had from most good hardy plant nurseries, is known under the name of Cistus ladaniferus, C. l. planifolius, C. l. maculatus, and C. salicifolius.

Pruning Euonymuses.—There are few shrubs that are better adapted for edging beds or planting on sloping banks or margins of shrubberies than Euonymuses; but the beautifully variegated gold and silver-leaved varieties need constant watchfulness in regard to pruning away the green-leaved portions, or the latter quickly monopolise the strength of the plant, and the variegated shoots languish and eventually become overpowered. As, however, they may be looked over in a short time and the plain-leaved shoots removed, neglect in reference to this matter is inexcusable. As Euonymuses are easily raised from cuttings inserted under hand or bell glasses, I need scarcely say that it is important that the best coloured shoots should be selected for cuttings. Few plants are better adapted for pot culture than Euonymuses, and in districts where this beautiful shrub suffers from exposure a portion at least of the stock should be grown in pots so as to receive some protection in winter. A rather poor soil is the best for bringing out the leaf-colouring of the variegated varieties. —J. G.

Cutting Ivy and other Shrubs.—If cut or clipped before new growth commences, Ivy will present a very different aspect throughout the season from what it will do if deferred till new growth has commenced; therefore let it be cut at once. Hedges, screens, lines, or belts of shrubs that have to be kept clipped in a formal manner should now be operated on. Many common Laurels, Bays, and Laurustinus have been terribly injured by the severe weather; hence the pruning of these had better be deferred for a few weeks longer, till it can be seen as to whether or not they should be cut right down and allowed to break from the bottom. Any that now seem dead had better be headed back at once.—C.

Making Lawns.—If the weather be favourable, Grass seed should now be sown where it is desired to form new turf or renew old. The first condition necessary to ensure success is that the ground should be efficiently drained, and the whole surface broken up to a sufficient depth to allow of its being levelled, great care being taken that, should any portions require a considerable amount of filling up, the soil be well rammed in thin layers. This would occur in filling up trenches where drain-pipes have been laid. Where the surface is composed of gravel or poor soil, it is desirable to give a dressing of good soil, at the rate of twenty cartloads per acre, or more where it is easily obtainable. Having spread this evenly over the whole area, it should be harrowed and rolled until thoroughly pulverised, and any large stones or other rubbish should be gathered off before the seed is sown. Although in favourable situations three bushels of seed is considered ample to sow per acre, I am of opinion that not less than four bushels should be the quantity sown. Care should also be taken that the seed is of good quality. From 1 lb. to 5 lb. in weight of white Dutch Clover, mixed with the quantity of Grass seed recommended to be sown per acre, will be found an improvement on dry soils. After the ground has been prepared in the manner described above, the seed should be sown evenly over the surface. To do this a calm day must be chosen; this done, the best way, without exception, with which I am acquainted, to bury the seed is to use steel forks, drawing them backwards and forwards until the seed is properly covered. This any ordinary workman will do; neither harrowing nor raking will bear comparison with forks for this purpose. A light bush harrow or a flat bundle of sprayey Pea-sticks may then be drawn over the surface, and all stones, sticks, or other rubbish that may have turned up picked off, and, lastly, the whole area thoroughly rolled; in fact, the surface cannot be too much consolidated, unless it be of a clayey nature. Lawns treated in the above manner are sure to succeed, and, with favourable weather, may be fairly green in about a month.—C. D.

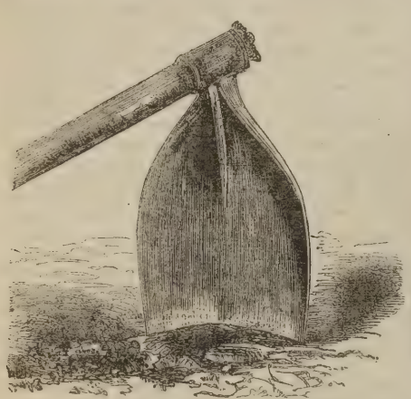
FRUIT.

UNPRODUCTIVE FRUIT TREES.

My fruit trees for years disappointed me in not bearing any fruit. I accidentally discovered the cause and the cure—at least in my own case, and I am disposed to think it is everywhere alike. When I planted, about thirty years ago, a young orchard, and laid it down in Grass, I planted between two of the rows of Apple trees a row of Black Currants. Not wishing to disturb the young turf, I put manure on the surface in autumn and spring without digging it in, and put it on fresh from the stable without the straw, in quantity not sufficient to smother the grass. From these trees I gathered prodigious crops of fruit for three or four years, till I removed them because they were out of place and unsightly. My other trees in garden and

orchard—Apples, Pears, and Plums—blossomed profusely, but set very little fruit. Indeed, of Pears I scarcely had a dishful a year for ten or twelve years. I then recollected my Currant bushes, and tried the same plan with my Pyramid Pears, covering with fresh stable manure the surface commensurate to the diameter of the bush, without digging in, early in the autumn, leaving the rainy weather to wash in and decompose it. My success was complete, and now all my fruit trees are served alike. I never fail to have a crop, whatever be the season. Of course, proper pruning must be applied as well, and judicious thinning of fruit early, to prevent alternate bearing. I am situated in a dry district, where artificial feeding must be resorted to in any case; but even in strong soils I am disposed to think the same plan would succeed equally well, and supersede the necessity of root-pruning, which is very troublesome. If the surface-soil remains undisturbed and well-manured, a fibrous mass will be formed on the surface naturally, which root-pruning aims at doing artificially, and the rich surface will have a tendency to draw the root growth upwards to the surface, which is very desirable. The cause of the shedding of blossom, I take it, is the want of strength on the part of the tree to set its fruit, resulting from the surface-digging, which destroys the most valuable of its feeding organs. It is only very rich soils that will enable a tree to bear well; it wants artificial nutriment of some kind, and by digging it in you at the same time take away in a great measure its means for taking it up. I used to manure in autumn and spring the surface soil about the trees, but the soil is now so much improved that I am not careful about more than an autumn dressing. In applying it, keep clear of the stem, and take care that there is nothing like piling manure about the tree; a thin dressing of 2 in. or so is enough. Care must always be taken to prune out all wood that gets decrepid and bark-bound. Manure will kill all Coniferous trees that I have ever cultivated unless applied very sparingly, as I have learnt to my cost.—H. W.

A Useful Garden Implement.—In gardens such an implement as the one here illustrated—which any blacksmith could soon



A Spade Hoe.

make—would be of great practical use in clearing shrubberies and plantations, as well as for earthing-up operations of all kinds. It must be well steeled along the cutting edge, and should be made strong and heavy enough to sever roots as thick as the wrist at a blow. It will then be found a really useful and practicable implement; a combination of the awkward old grub-axe with the hoe and spade, and invaluable for cultivating land near hedges and trees where roots are plentiful, and where the use of the common spade is, to say the least, extremely inconvenient. This implement pretty nearly represents a very useful tool in daily use in Kentish gardens; they call it a mattock-hoe, as it answers the purpose of hoeing, grubbing up roots, and digging at the same time; although a rude and simple-looking implement, it is surprising the variety of uses to which it may be put. In some parts of Kent the land is stiff, and orchard and garden crops necessitating a good deal of traffic on the soil, light tools, so useful on light sandy land, are comparatively useless; therefore tools of great strength have to be provided, and the spade or mattock-hoe is invaluable, as it cuts up the softest weeds or the stoutest suckers with equal facility. Another Kentish tool for breaking up or trenching land, or digging Hop gardens or orchards, is the "spud," or three-tined fork, the size and weight of which would alarm those accustomed to use light steel forks, but which the labourers in Kent prefer to a spade.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

March 22.—Top-dressing pot Vines. Grafting Gros Colman Grape on other stocks; looking over Apples in fruit room; disbudding Peaches in second house; sowing batch of Melons; potting and plunging Lilacs that have been forced; potting off Balm, and boxing Calceolarias; sowing Carnations, Picotees, Asters, Tagates, Love-lies-bleeding, and Prince's Feather; also Peas, Spinach, and a bed of Carrots. Planting Shallots and Garlic, first-sown Cauliflower plants, Lapstone Kidney and Early Handsworth Potatoes. Pricking out Onions; putting in more Coleus, Alternanthera, and Iresine cuttings; moving Artemisias, Oxalis, and Veronicas into cold frames, and annuals into cool Vineries; putting Cauliflower and Lettuce plants into cold pits; digging vacant land; forking among Gooseberry and Currant bushes; wheeling manure on Asparagus-beds; making a pit ready for Cucumbers; earthing up Cabbage plants; cleaning autumn-sown Onion-bed. Keeping orchard-houses in which the blooms are expanding at from 45° to 50° at night, leaving a little air on constantly; sowing Balsams, German and Ten-week Stocks; levelling down Celery trenches and getting the ground ready for Peas; re-making Mint beds; thinning out and cutting back Ivy on walls; sticking early Peas, and giving them a little earthing up; mending Box edgings.

March 23.—Putting in cuttings of Alternantheras and Mesembryanthemums; watering forced Asparagus beds with warm manure-water; turning over manure for Celery, having previously mixed with it salt and soot. Giving the surface of the Carrot and Beet ground a dressing of soot and preparing it for drilling; sowing Snow's Winter White Broccoli, Brussels Sprouts, and Wallflowers; potting Tomatoes and Capsicums; pricking out Celery and All the Year Round Lettuce; potting young show Pelargoniums for late blooming and small Violets in 8-in. pots; sowing Cockscombs, also Broad Beans, main crop of Parsley, and Long Surrey and James's Carrot; planting Red Cabbage and Globe Artichokes; dividing Dahlias; putting in Plumbago and scented Verbena cuttings, and layering Jasmines; thinning out Mignonette; pricking out Tomatoes; staking Peas; watering all permanent Peach trees in houses; manuring dwarf Roses; top-dressing Camellias with loam.

March 24.—Potting off Lobelia, Golden Chain and other Pelargonium cuttings. Shifting Tree Mignonette into 8-in. pots, using all manure with a top-dressing of loam and sand. Sowing Walcheren Cauliflower, Pine-apple Beet, and Myatt's Victoria Rhubarb; planting Aubrietia græca and Viola Cornuta; also Forty-fold Potatoes, Seakale, and autumn-sown Cabbage plants. Moving potted-off Heliotropes into greenhouse; placing pieces of Seakale roots (thongs) in shed to sprout; digging vacant land; hoeing among growing crops. Keeping Hamburgh Grapes which are in flower at from 66° to 68° at night, according to the weather. Planting the main crops of the following sorts of Potatoes, viz., Snowflake, Breadfruit, Main Crop, Giant King, Model, Schoolmaster, Porter's Excelsior, Paterson's Victoria, King of Potatoes, and Perfection Kidney. Sowing Cucumbers, also Canadian Wonder French Beans in pots. Planting out autumn-sown Cauliflower, also a few Brown Cos Lettuces.

March 25.—Preparing ground for new Seakale beds, and also for Globe Artichokes; earthing up Potatoes in frames; forking over the ground amongst Cabbage plants; getting netting and other coverings over Peach trees for protection; looking over fruit room, and removing any fruits that are decaying; tying in young shoots in Peach house; potting Stocks as they show flower; shifting young Fuchsias into 6-in. pots; sowing Seakale and Watercresses; planting out Lily of the Valley that has been forced; pricking out Celery plants; thinning out young Asparagus plants; and earthing up broad Beans.

March 26.—Potting Alyssum; sowing blue Larkspurs, Primulas of sorts, and Amaranthus; also Malta and Paris Cos Lettuce; likewise main crop of Celery, and putting it in Cucumber pit, placing glass over the pots; also sowing Chervil Radishes, and Meredith's Hybrid Cashmere Melon. Planting more Cauliflowers; putting in some Golden Willow cuttings; impregnating Primulas for seed; protecting Plums in blossom by means of netting; putting down covers over Green Gage Plum trees every night; searching for fly on Peach trees, and for thrips on Vines; watering Potatoes in frames; salting Asparagus beds. Digging border for Turnips, also flower borders; forking between Peas and Cabbage, and preparing beds for sowing Brussels Sprouts, Savoys, and Curled Greens. Earthing up early Melons with good stiff soil; also first Cucumbers, and training out the shoots. Earthing up Potatoes in frames; also Cauliflowers under handlights. Salting walks to eradicate Moss.

March 27.—Renovating linings round manure frames; weeding Box edgings and gravel walks; dividing and re-making herb beds; covering up Seakale beds; looking over Pelargoniums and picking off all dead leaves and stopping the shoots where required; clearing off borders, giving them a dressing of soot, and forking them up ready for sowing seeds. Sowing Yew berries and Perilla; also Melons, Cucumbers, Parsnips, and Turnips. Planting Carnations, Fairy Roses, and Gladioli; also Lapstone Kidney Potato, and rows of Cauliflowers between Early Peas; and dividing and replanting Pennyroyal. Pricking off seedling Petunias; putting variegated Pelargoniums into cold pits; preparing land for Sweet Peas; digging and manuring among Rhubarb stools; putting manure in ground for Hollyhocks.

Greenhouses.

Shading.—A house of any form facing the south, where the sun in the middle of the day comes directly upon the occupants, needs shading for a time on the sun-exposed side for almost any kind of plants; whereas, in the case of structures placed in the opposite direction, the bars and rafters break the force of the sunshine, and this, coupled with its striking them obliquely, much reduces the necessity for shading. Large numbers of tender-leaved, fine-foliaged plants, such as Cyanophyllums, Caladiums, Alocasias, Palms, and Ferns absolutely require shade when the sun is powerful, as otherwise, if the foliage be not positively burnt, it gets so brown as to make it unsightly. It is much the best plan to put those plants, both flowering and fine-leaved, that want shade, at one end of the house, using shade there only. It cannot be too often impressed upon beginners in the cultivation of plants that the blinds in all cases should be movable, and that they should never be down before there is absolute necessity for it, nor to fail in rolling them up as soon in the afternoons as they can be dispensed with. The material used should also not be thicker than just to break the force of the sun's rays.

Achimenes and Caladiums.—Achimenes for late blooming that have not been started should at once be put into heat. Those first started in pans will shortly be ready for placing in the pots or hanging baskets in which they are to be grown. For large houses there is nothing more effective than these plants in good-sized wire baskets suspended from the roof. For general purposes pots of small or medium size will be found the most useful. Their rapid growth necessitates a liberal supply of water through the growing season, for which reason see that the drainage is efficient. Any Caladiums not yet started should immediately be shaken out and repotted. These will be serviceable, retaining, as they do, their leaves fresh and in good condition through the autumn. If there be a deficiency of any kind when the young crowns have got 6 in. or 8 in. in length, they may be cut out from the tubers, placed singly in small pots, and treated as is usual in the case of cuttings, in which way they will shortly get established.

Propagation of Fine-leaved Plants.—Cuttings of Cyanophyllums, Aralias, Crotons, Dracænas, Ficuses, &c., should be taken off as soon as they are large enough for the purpose. In the case of most of them the young shoots that are formed after heading back root much more readily than the points of the strong branches, especially when obtained with a heel, as they can be got at this stage of their growth. All the larger-leaved plants of this description require sufficient room in the cutting-pots, or they are liable to damp off; and every effort should be made to retain in perfect condition the whole of the leaves which they possess, as upon being clothed with perfect foliage down to the base depends their appearance afterwards. Plants that require to be increased by division of the crowns are easiest managed about the time when they commence growth. Some of the species of Pandanus, Musas, Hedychiums, Cyperus, Anthuriums, &c., may therefore now be divided as wanted, potting the pieces separated singly and keeping them close until they have become established.

Ardisia crenulata.—Both the red and white fruited varieties of this plant, when well managed, are amongst the most useful berry-bearing subjects which we have. Where young shoots are obtainable they should now be propagated, putting them separately in small pots, or, if in larger numbers together, taking care that they are so treated that whatever leaves they possess may sustain no injury. For room decoration they are deservedly great favourites, lasting, as they do, with care in good condition for months. If considerable numbers are wanted, it takes some time to get up a stock from cuttings, and beautiful plants may be raised from seed, which if sown now in pots or pans, drained and filled with open sandy soil tolerably compressed, the seeds slightly covered and placed in a brisk growing temperature, after some time the seedlings will make their appearance, but

they are slower in all stages than many other plants.

Bouvardias.—A sufficiency of cuttings should at once be got in; they will succeed either made from the roots or shoots; where enough of the latter are not at hand, a good-sized plant or two will provide a number of the former, using the stronger pieces in bits from ½ in. to 1 in. long, putting them in pots or pans partially filled with sandy soil, the upper portion being sand alone, and inserting them about level with the surface of the material. If kept moist and warm they will soon commence to grow, and they should be placed singly in small pots as soon as large enough to handle.

Azaleas.—Those that have done flowering should at once be placed in a warm house and kept syringed to encourage them to make growth. Previous to putting them into warmth they should be closely looked over to see that they are free from thrips; should any trace of these be found the plants ought to be either fumigated or be dipped or syringed in Tobacco water. Any that require larger pots it will be better to defer moving till some further progress is made in the growth of the young shoots, as until this takes place the roots of Azaleas do not begin to move.

Flower Garden.

Carnations and Picotees.—The Tree or perpetual-flowering varieties of Carnation require attention at this time; they produce plenty of blooms when aided by a warm greenhouse temperature. The stems should be tied to sticks, else the weight of the flowers bends them down, and they snap at the joints. Some of the large full flowers are very beautiful, but nearly all of them burst the calyx unless it be tied round with a strip of matting before the flowers open. See that a goodly number of cuttings of all the varieties are put in for flowering from January to June next year. The very smallest offsets, if inserted in sandy soil, will soon form roots on a gentle hotbed.

Hollyhocks.—Instructions as to planting out choice-named varieties have already been given; see, therefore, that this operation is carried out as soon as the plants have been inured to the open air. Later propagated plants should be placed in cold frames when they have become well established, and they must also be speedily hardened off. For ordinary decorative purposes seedlings make the best display; and if the seeds be saved from the finest double flowers there will be comparatively few inferior varieties amongst them. If the seeds be saved from varieties of decided colours without crossing, the seedlings will vary but little from their parents, and half of them will be as good.

Pansies.—A few pots may be removed from frames to the greenhouse, where their agreeable perfume and rich colours will be appreciated. They ought not to be placed there until they are in flower, as if at a distance from the glass the growths soon become drawn up weakly. Cuttings may now be put in to produce late flowers of a better quality than can be obtained from old plants. The flowers of show Pansies very speedily deteriorate in quality unless all of them are picked off at frequent intervals in order to allow the plants to have a short rest. The growths ought to be thinned out, and the surface of the soil dressed with rich compost, when the young shoots may be pegged down over it.

Primula cortusoides and all Hardy Primroses give the greatest satisfaction when grown in pots under glass. The flowers can be inspected in all sorts of weather, and they occupy such a very small space, that they may find a place in the smallest gardens. We had a small bed of Primula cortusoides which stood out without any attention for several winters; but the plants were ultimately lost. We are now planting out a bed of the white, lilac, and red forms of P. amœna; planted at this time, they will flower as strongly as the plants in pots.

Delphiniums, Phloxes, and Pyrethrums in Beds, if they have not been replanted, should now be attended to without delay, as some of them have made considerable growth. Delphinium seeds, if sown now in heat and well attended to, will produce flowers in succession to the old established plants. D. formosum and D. Madame Henry Jacotot are two of the very best; these seeds should be sown in spring. The one has bluish-purple flowers, the other blossoms of a beautiful clear light blue.

Fruit.

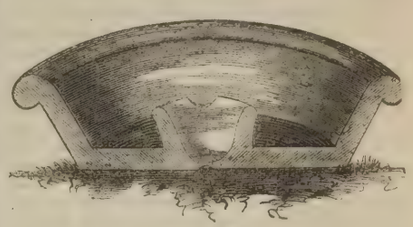
If pruning of all kinds, staking, tying, and nailing be finished, as by this time they should be, attention must now be directed towards devising ways and means for protecting the trees when in blossom. Though the trees are backward, any grafting that has to be done had better receive attention at once, for the double reason that there is now more leisure for doing it, and that it is very probable that when warm weather sets in growth will be very rapid, and, consequently, a good grafting time be very limited. Any trees that are languishing through poverty of soil, or over-fruitfulness, may be rendered vigorous by now removing the surface soil right down to the roots and replacing the same with good maiden loam and a liberal admixture of well-decayed manure. Well press the soil right down to the roots and finish off by a thick coating of manure on the surface as far as the roots of the tree extend. The surface-dressing and manuring of Raspberries should no longer be delayed. No hardy fruit so soon shows the good results of manurial dressings or gives better returns than the Raspberry; and this fact should be an incentive to the accomplishment of the operation. Thin out straggling branches or boughs, and eradicate the suckers from round about the stems of Nuts. The value of the sticks thus removed for various purposes will pay for the labour, not to mention the benefit accruing to the trees, as root-suckers are little better than parasites, for they live on the vitality which would otherwise aid in the production of more or better fruit.

Vegetables.

Onions, Parsnips, Early Horn Carrots, Peas, Broad Beans, Radishes, and Lettuces should now be sown; and a good batch of early Potatoes, Shallots, and Garlic be planted. Every endeavour should be made to bring up arrears of work, the result of the long winter. Preparation should be made for planting the principal plot of Potatoes; deep tilth, moderately enriched soil, thorough drainage, head-room for the haulm by planting the tubers a good distance apart, and medium-sized seed tubers with but two sprouts, constitute all that is required in order to ensure success. Peas and Broad Beans should be sown successionally, according to the demand. As a rule, as soon as one lot emerges above the soil another should be sown. Earth up and stake Peas, and on the cold or windward side screen them with Laurel or other evergreen boughs. Sparrows and chaffinches at this early season have an insatiable taste for the tender tops, and when once they commence their attack nothing short of annihilation will deter them. Radish, Turnip, Broccoli, and Cabbage seeds are equally dainty morsels to these pests, and, unless netted over as soon as sown, woe betide them as soon as the first chaffinch finds them out.

Cauliflower plants wintered in hand-lights should now be finally thinned out, about three of the best being left to mature on the ground; the remainder should be carefully removed with balls of earth, and planted in the warmest available position. A deep drill helps to ward off cutting winds, and as soon as the plants get sturdy it can be filled in level, and no other earthing up is required. Prick out Cauliflowers sown in heat a few weeks ago; a south border and a little evergreen branch protection are all that is required. Such plants will make a good succession to those now being planted. Brussels Sprouts and early Cabbages should be treated in a similar manner. The heavy work now requiring attention will be the digging out of Celery trenches, clearing off stems of Broccoli, Brussels Sprouts, and other winter greens, and preparing the ground for Potatoes, Spinach, Peas, Runner Beans, and the like. Let all the walks and edgings be put in good order, and maintain neatness at all times by arranging that wheeling over the walks or all other heavy traffic be done during the prevalence of drying winds.

Pot Saucer.—The accompanying woodcut represents a garden saucer of considerable utility. As will be seen, it is really a circular trough, the pot standing on the inner rim. The centre, however, is not open, but a cup into which the overflow from the rim and the drainings from the pot escape and pass away through a hole in the bottom. Into this central cup some roots descend and find moisture. The advantages of this saucer are that it keeps the plants moist, without subjecting them to saturation; it allows of frequent waterings with fresh water without inducing rotting or stagnation of the soil. The common garden saucer, judiciously used, is a great aid to the cultivator, and answers perfectly for many purposes; but this has special value in many



Saucer for Plants.

cases where the other would be worse than useless, and it deserves general adoption in gardens where many plants are grown. It is made by Messrs. Down & Harlock, Cheam, Surrey.

Rustic Baskets.—To those who appreciate a really pretty rustic basket, allow me to recommend Wych Elm rods for their manufacture. The bark being thick, wrinkled, and deeply serrated, resembles that known as virgin cork on a reduced scale, without being so heavy in appearance. The heart of the rod is tough, and the bark never seems to have a tendency to crack or peel off it even when exposed to a temperature under glass of from 80° to 100°, *i.e.*, when the baskets of which it is made are used to hold plants in pots. I have not tested them with loose soil, but have no doubt of their proving satisfactory. The rods can be obtained of wattled fence or common hurdle makers, and are very cheap. One rod of, say, 8 ft. to 10 ft. in length, and from 1 in. to 2 in. thick, on an average, will make a basket quite large enough to hold a fair-sized pot. If required, such rods can be delivered split up the middle. Nothing more is wanted for making up such baskets but some small galvanised or copper wire, and they stand a vast amount of wear and tear.—F. M.

Siebold's Stonecrop (Sedum Sieboldi).—This is a dwarf and creeping form of the Stonecrop, admirably adapted for planting on little rockeries, on the tops of old walls, or as an edging to raised beds or borders. Grown in pots or wire baskets it also makes an excellent

Siebold's Stonecrop as a Basket Plant.

room plant. It requires well-drained, rather loose soil, and a not too liberal supply of water. Its flowers are rose, tinged with purple.

Birds and Seeds (1536).—Red lead is not dangerous, provided the hands are washed after sowing the seeds. I use it every spring and find it most effectual. Place the seeds in a saucer or basin, pour just sufficient water over them to damp them and cause the lead to adhere; then sprinkle the lead over the seeds, and stir them about till all have taken on a coat of red, adding a little more lead if it be necessary, to dry up all the moisture. The proportions need not be exact. As the lead will not affect the germination, simply use sufficient to make each seed look red. Soaking the seeds in paraffin oil has also a deterrent effect.—E.

House and Window Gardening.

Primroses as Window Plants.—The Primrose, both single and double, is deservedly a favourite garden flower, but its value as a pot plant for window decoration is not perhaps so well known as it should be. There is not the slightest reason why our dwellings should not be made gay with this charming spring flower at an earlier period of the year than it comes naturally into bloom in the open air. Primroses are impatient of forcing, but they flower beautifully in the window of a cool room, and expand their pretty bright blooms as well, and oftentimes better, than when in the open ground. Nor are they particular as to aspect; according to my experience they thrive quite as well in a north window as in one more fully exposed to the sun. It is this latter quality which renders Primroses especially valuable, as we really find but few plants which during February and March will grow and flower freely in a north aspect. Many apartments which at this season of the year present a rather dreary appearance might be effectively and inexpensively enlivened by filling their windows with Primroses; and the most satisfactory part of the matter is that Primroses not only live there, but the owner has the pleasure of seeing them grow, expand, and develop fresh beauty every day. It lies in the power of every one to render their homes bright and pleasant in early spring by means of these ever-welcome flowers. By planting them out during summer in good soil in a sheltered situation and keeping them well watered they may be lifted with good crowns and roots, placed in 4-in. and 6-in. pots, and stored in a frame, or in some sheltered spot where they can be protected during severe weather, from thence to be introduced in spring into the situations which they are intended to beautify.—J.

The Killarney Fern Indoors.—I have read with interest several letters on the subject of the Killarney Fern (Trichomanes radicans), and mine, I think, ought to be mentioned, as it measures 11 ft. 8 in. in circumference. It was given to me about twenty years ago, with one or two fronds, and it has always been grown in a glass-case in the drawing-room, or rather in a succession of cases, as it has often outgrown its home. The case has doors at the side, which are opened when visitors come to admire the Fern; and I water it overhead whenever the fronds have no damp on them. The superfluous water drains into a kind of little tank under the bottom of the box in which the Fern grows, and this tank has a tap to draw the water off. I find it rejoices in a liberal supply of bits of sandstone, over which its rhizomes creep much more readily than they do over the earth into which it is supposed to send its roots.—M. D.

Stonecrops and Houseleeks in Windows.—Happening to pass through a thickly-populated district during the recent severe frost, my attention was directed to a collection of plants grouped on the window-sills of a dwelling, and which, notwithstanding the intense cold, presented as fresh and bright an appearance as if growing under more favourable conditions. Is it not strange, and matter for regret, that the pretty little neat-habited Stonecrops, so hardy in their nature, and which may be so grown as to completely drape and hide from view the bare sides of the pots, should not be more extensively grown for open-air decoration during the winter months? Their culture is so exceedingly easy that any one, having the accommodatien of a few square feet of space in an open, sunny situation, may grow them to great perfection. All that they need is abundant supplies of water in hot weather, administering occasional doses of pure liquid manure or soot-water when the pots get full of roots. During the summer months but little difficulty is experienced in furnishing the windows with flowers and verdure. The list of plants, however, which are sufficiently hardy to present a fresh, bright, ornamental appearance during protracted frosts is unfortunately very limited. Evergreens, even of the most robust kind, are apt to turn brown and dingy when exposed to the bitter drying winds which often accompany hard frosts, and which, freezing through and drying up the balls of earth, deprive the plants of their due supply of moisture, and with the consequent effect of causing the foliage to lose its lustre and freshness. To such trials the Stonecrops and Houseleeks are impervious; they remain, even in the most exposed situations, charmingly fresh and green the whole winter through. They may also be employed where plants of taller growth would be inadmissible. It is also fortunate that in both families we possess a considerable number of species capable of being thus used; consequently there is but little difficulty in forming a varied and most interesting collection.—J. C.

Grasses for Summer Vases.—We shall soon be able to avail ourselves of the bloom spikes and leaves of Grasses for the ornamentation of Vases, and doubtless I am not singular in entertaining pleasurable anticipations of the time when these graceful adjuncts to a bouquet are again at our command. When Camellias are over, Roses are nearly ready to take their place in our flower vases; when the long summer reign of these is coming to a close, Dahlias and Asters are at our call for similar uses; and these, again, are succeeded by Chrysanthemums, which carry us on until Camellias are ready for us again. But flower-spikes of Grasses, which are coming in during May, are at their best all through June, and are getting scarce towards the end of July; what is there, therefore, that can fill their place at other seasons of the year? Literally nothing;

Vase of Flowers and Grasses.

let us, therefore, make the most of them while they last. Grasses certainly have been more used during the last few years than previously for vases, that is, if the competitions for table decorations at our flower shows may be taken as indicating the style of the period. At the same time, I feel sure that they might be much more used than they have yet been. In the engraving which accompanies this it will be seen that Grasses predominate over all the other types of flowers and foliage; and the general effect can hardly be surpassed for grace and elegance. The fashion of the day to value plants more for their rarity than for their intrinsic beauty, will, no doubt, account for the want of attention that has hitherto been paid to many wild plants of common occurrence suitable for decorative purposes. There are many foreign Grasses of an exceedingly graceful character which might be grown in pots, and thus made available for conservatory uses as well as for bouquets and vases.—W.

A Simple Window Ornament.—Many persons know, but some do not, that a pretty and easily-grown window plant may be obtained by soaking a round piece of coarse sponge in warm water until it is thoroughly expanded. After squeezing it about dry, place in the openings Millet, Red Clover, and Barley-grass seeds, Rice, and Oats. Hang the sponge in a window where the sun shines a part of the day, and sprinkle it lightly with water every morning for a week. Soon tender leaves will shoot out, and growing rapidly, will form a drooping mass of living green. If regularly sprinkled, it will later be dotted with the blossoms of the clover.—*Glasgow Herald.*

Trailers for Window Boxes.—I have for several years grown a box of Mignonette, with Sweet Peas sown in a single row close to the outer edge of the box; Invincible Scarlet, black and white, mixed with a few of the Painted Lady. They droop over, and hang about 2 feet, completely hiding the box; and if the pods are clipped off as they appear they will continue to flower till the frost comes. They should be sown the beginning of March.—S. M. M.

Camellias under a Verandah.—It may interest some to know that Camellias thrive and look well under a verandah. We have some doing remarkably well and full of healthy buds as large as small Nuts. They have protection from frost only.—W.

A Fine Window Plant (Dielytra spectabilis).—If at this season, when this plant is pushing up its early growths, good strong clumps of it be lifted and placed in a warm window, they will soon make beautiful plants. Out-of-doors a very sheltered position should be chosen for this plant, as, starting early into growth, it is liable to suffer from spring frosts.—L.

Harrison's Musk.—This is a decided improvement on the old variety, and its scent is equally strong. It makes an excellent window plant, and at this season may be readily increased by division of the roots, or by means of cuttings.—G.

GLASSHOUSES AND FRAMES.

Culture of Stephanotis floribunda (1570).—The Stephanotis is propagated by means of cuttings of the half-ripe wood inserted in silver-sand and placed in a close hand-light, in a warm house, until rooted. If the pot can be plunged in bottom-heat, such as a mild tan-bed, the formation of roots will be much facilitated. Every morning give air for about an hour, and preserve the sand in a moist condition. The following March prepare some well-seasoned fibrous peat, taking care that it is, when used, of the same temperature as the house, and pot the cuttings off into small pots. Water very gently, keeping them in a temperature of 55° by night and from 60° to 65° by day. As soon as the pots become filled with roots, shift into 4-in. pots. Place three stakes round the edge of the pot, and train the shoots to them as they grow. During the growing season, maintain atmospheric humidity by frequent syringings in hot weather, and by damping down the paths of the house. By the middle of August growth will have ceased, and from that time forward until the advent of cold weather free ventilation must be given, with the object of thoroughly ripening the wood. The Stephanotis will thrive very well amongst an ordinary collection of stove plants, but will flower much more freely if placed during the late summer and autumn months in a cool structure. One good point in the culture of this plant is to give a distinct period of rest, which is best afforded by wintering the plants in a temperature ranging at 50° by night and 55° by day. When planted out—and in this manner better results are obtained with less trouble—the shoots should be trained near the glass, merely affording shade enough to prevent scorching. Where a walled-in front border or a centre bed exists, there is no difficulty in making good provision for the roots. Some 6 in. of brick rubble should form the drainage, and the compost may consist of half peat and loam, adding thereto some silver-sand and a little crushed charcoal and pounded brick. Plant out in March, watering carefully until good growth is made, when copious supplies will be needed. If pot culture is preferred, shift about the middle of February into 8-in. pots, using the compost recommended for planting out. Affix a balloon-shaped trellis (which may be easily made with thin hazel rods), shorten back the shoots to about two-thirds of their length, and train as required during the growing season. Mealy bug is often very

troublesome, and must be kept under by means of frequent spongings.—J. C. B.

HOW TO GROW CELOSIAS.

There are many fine flowering annuals for both out and indoor decoration, but I know of none more ornamental or useful than the Celosias. They may be had in flower from June to January, and during all that time they may be used for room or conservatory embellishment with excellent effect. They have no scent worth mentioning, but the colours of the flowers are both interesting and varied. As with other annuals, there are many strains of Celosias; some exhibit a good deal of the Cockscomb style, others form long narrow inflorescence; but the best produce plumes more feathery than the finest heads of Pampas Grass. It may be said these are the only kinds really worth growing, so very much superior are they to all others; but the worst of it is they are rather difficult to secure. The best way is to buy a mixed packet of seed, grow the whole well, and save seed only from the very best; we thus improve the strain, especially if seed be saved in this manner year after year. Celosias produce seed freely; but, as is often the case, the best are always the shyest in this respect. When the flowers show signs of decaying, the plants should be placed in some warm, dry, airy house, to prevent them from damping and to ripen the seed. This should be gathered a little before it is fully ripe or it may drop out. The best, or, in fact, the only, mode of propagating the Celosia is from the seed. It may be sown from February to July, firstly to produce early plants for midsummer and autumn blooming, and lastly for plants to bloom late in autumn and midwinter.

The seed may be sown either in pots or pans; we generally use 8-in. pots for the purpose. They are filled quarter full of crocks, over which is put some rough material, and the remainder is made up of a mixture of loam, leaf-soil, and sand in equal parts. This compost is made moderately firm, the seed is sprinkled thinly on the surface, and then covered over with a little of the same mixture; a gentle watering is then given, and the seed soon germintes in either a top heat of 60° or a bottom-heat of 70°. Under the latter treatment the young plants come up sooner, but healthy young seedlings may be secured both ways. As soon as the young plants are about 2 in. high they are carefully lifted and potted singly in 3 in. pots, using the same kind of mixture as that in which the seed was sown, and giving them the same temperature, &c., as before. From this time onwards there is only one pest that is to be guarded against, and that is the red spider; it is particularly fond of the Celosia, and very often spoils the plants when not checked. When young the leaves may be sponged if there be any sign of spider; and, as the plants become large, frequent syringing will keep it in subjection.

As the young plants gain size it will be found that the pots soon become filled with roots, when a shift into larger pots must be given, the size being determined by the amount of roots; previous to flowering, care must be taken that they never get pot-bound, for when that occurs they invariably start into bloom, thus affording a certain means of flowering them at any time, and in any sized pot. From 3-in. pots they should be shifted into 5-in. or 6-in. ones. Fair-sized plants may be bloomed in the latter size, and when they are wanted for small vase decoration this size will be found very useful. After being taken from the 3-in. pots, well-decayed manure should be substituted in the potting compost for the leaf soil, as Celosias are rather strong-feeding plants. When they have been potted a second time they may be again placed in a mild close atmosphere, but after the beginning of June they succeed very well in an unheated frame, where, being near the glass, dwarf sturdy plants are the result. They may be placed in the conservatory or window just as the flowers are forming, but they should not be taken into a room until they have nearly or quite expanded, and the time during which they remain in bloom will surprise people not acquainted with them. Three months is not an unusual time for them to retain all their good properties in this respect; owing to this, plants which come into bloom in July will be found in the same condition in the beginning of October, and plants just coming into bloom in October will remain so until after the new year. The latter stock of plants should be kept hardy—that is, not grown in a close warm place. but in frames fully exposed to the sun.

The younger and more vigorous the plants are during the short days, the better do they bloom and withstand a low temperature. When in flower, especially in winter, they do not require much heat; a temperature anywhere between 35° and 60° suits them. What they want more than heat is a dry atmosphere, as damp soon rots the feathers. It is chiefly on this account that they succeed so well in rooms. I have also found them to last a very long time in church decoration, a point of importance in the case of those who (like ourselves) have to decorate the church nine months out of twelve. If any one imagines that Celosia culture is a difficult matter, let me assure them to the contrary; no plants are more easily grown, and none will yield a better return for attention paid to them, whether that be much or little. D. E. L.

Forced Shrubs.—It may be well to tell the inexperienced that when hardy shrubs that have been forced are taken out of conservatories, &c., they should not be placed out-of-doors under shrubs, or in any out-of-the-way place; on the contrary, they should be put into a greenhouse or frame to make their growth before being put out. Thus treated, they will force much more easily the next season. Some Rhododendrons thus managed for four years have done good service, and the same may be said of Ghent Azaleas.—J.

Iris reticulata under Glass.—I have just had a bunch of this beautiful Iris sent me by an amateur who grows it at this season of the year in his greenhouse. It is not the freest flowering variety of the Iris tribe; but he informs me that he has a quantity of it in flower at the present time- I need hardly state that Iris reticulata is perhas the most beautiful of its class; but I have never seen such fine and perfectly developed flowers of it as those just referred to, and I should say the plant would be a most desirable addition to our forcing plants, if growing it in a greenhouse can be called forcing. The flowers are of a deep blue colour, with a bright golden blotch on the lip, shading off to white at the edges, and also spotted with purple. It is even superior to many Orchids.—S.

PRIZES FOR ASPARAGUS.

Sir Henry Thompson has offered to add five guineas to the prizes offered some time ago for Asparagus. The object of these is the improvement of Asparagus by the adoption of the French system, which is a much simpler and less expensive one than that now in use. The first competition will take place next spring at the Bath and West of England show at Tunbridge Wells; and the exhibitions will be continued during seven year, severy year in a different locality. Mr. S. Spalding has also promised five guineas, to be given as an extra prize the year the exhibition is held in Kent. The Hon. and Rev. J. T. Boscawen has given an extra prize of five guineas, to be competed for at the first competition. M. Godefroy-Lebeuf, of Argenteuil, near Paris, offers the sum of £10 to be distributed in prizes. Apart from these sums, over 100 guineas will be given in prizes.

The Plumy Cockscomb (Celosia pyramidalis).

The details of the French system of growing Asparagus are so very clear that they may be shortly stated. Each plant is treated as an individual, requiring much space in which to grow. Experience has taught cultivators that a smaller space than 4 ft. apart will not suffice to give the best result. People might suppose that this means a waste of ground, but it is not so; when the plantation is young, waste of ground is avoided by planting a light crop between the lines—say one of Kidney Beans or of early Potatoes; but after two or three years' growth the Asparagus roots occupy the whole space; and the result is so much more satisfactory than in the common way that the ground affords a more satisfactory return. There are two principal ways of securing crops—one being devoting a certain portion of ground to the crop, as usual

with us; the other alternating plants between small fruits, or placing a plant wherever there is room for one. This last way is highly important, because it may be carried out in small gardens. Healthy yearling plants are always chosen, and they are planted about the time when growth commences in spring. They are invariably planted in a shallow trench, somewhat like a Celery trench.

In this trench, about 8 in. deep, the plants are placed on little low hillocks, and they are carefully attended to for the first year. The plants, be it noted, are 4 ft. apart in the line, and 4 ft. apart in the trench. In soil of ordinary quality no manure is used at the time of planting. There are soils in which drainage and preparation might be required; but assuming that the soil is as good as garden soil generally is, no preparation whatever is given beyond planting each root in a handful of fine surface-soil; therefore the great expense which has been supposed to be necessary in the culture of this plant is, at the commencement at all events, avoided. It is when the plants begin to get strong and well established that a little manure is applied. There is thus a great economy in plants and in manure. During the coming two months is the best time to plant, using strong, clean, yearling plants.

ANSWERS TO QUERIES.

1502.—**Planting a Rockwork.**—If the situation is open to the west, so that the full afternoon sun will reach it, many kinds of herbaceous plants will thrive there better even than Ferns. Campanulas garganica carpatica, Arabis lucida variegata, Draba azoides, Lithospermum prostratum, Stonecrops of sorts, Saxifraga longifolia and Phlox frondosa would all be suitable subjects for the purpose. If, on the contrary, high trees or a wall overshadow the place, Ferns would give the greatest satisfaction, with which might be associated such shade-loving subjects as Saxifragas sarmentosa and umbrosa, and Nertera depressa. We would also plant here and there a few Snowdrops, winter Aconites and Crocuses, as well as a few Primroses and the pretty Primula denticula, which like a sheltered situation. A pretty edging to the rockwork may be formed by meaus of the small-leaved variegated Ivy, which presents at all times a charming contrast to Ferns and such-like plants.—C. B.

1520.—**Red Spider on Vines and Peach Trees.**—There is but little difficulty in preserving plants from the attacks of the red spider, providing timely measures are taken. Growers should always bear in mind that this pest luxuriates in a hot, dry atmosphere, and that where the plant is healthy and the proper atmospherical conditions are maintained it cannot multiply to any serious extent. In the first place, as soon as the Peach trees and Vines are fairly in growth, make a point of putting a little sulphur in the water used for syringing. Work the sulphur in the form of a paste, it will then readily mix with the water. A 2½-in. pot of sulphur will suffice for a house 50 ft. long. In the case of the Peach trees, work well with the syringe into the under surfaces of the leaves. It is there that the enemy congregates. Many syringings does not suffice. One good washing in the manner recommended every week should preserve both Vines and Peach trees from the attacks of this pest. Take care that the latter gets plenty of moisture at the roots; it may be that it suffers a little in this respect. Dryness at the roots, accompanied by an arid atmosphere, are sure to breed the spider to a serious extent. —J. C. B.

1571.—**Greenhouse in Town.**—Soft-wooded flowering plants, such as Geraniums, Fuchsias, Lantanas, Lobelias, Petunias, Heliotropes, and Tropæolums, would bloom very well in such a structure during the summer months. Begonias Weltoniensis and Dregei are very pretty free-flowering plants. We would also recommend the formation of a small collection of succulents of various kinds, amongst which may be specially mentioned Echeverias metallica and retusa, both winter-flowering plants. One or two Camellias and Indian Azaleas might also be included in the list. If the house is freely ventilated during the summer months they will succeed fairly well. We would also recommend the addition of a couple of well-furnished hanging baskets, for which Ivy-leaf Geranium l'Elégante and Tradescantia zebrina are excellent subjects.—C.

1709.—**Growing Mushrooms.**—If the permanent cover interferes with the arrangements for properly covering the bed, to maintain the requisite temperature remove it, and trust entirely to coverings of litter and mats to keep off rains, &c. Procure sufficient fresh stable manure to make a bed, when trod down firmly, from 15 in. to 18 in. thick. If made in the form of a ridge, it may be 18 in. or more in the centre, and taper down to the edges. Shake out the short manure from the long litter, if there is much of the long litter mixed with it; but if not, mix all together. Let it remain on the heap to ferment for a week or ten days, but permit no rain to fall on it. The fermentation is to carry off any rankness, and prevent over-heating when the bed is made up. At the expiration of the time mentioned turn it over, mixing the outsides with the centre, and leave it again four or five days. Then shake it up again and make up the bed as firmly as possible. Place a watch stick in it, and spawn when the temperature of the bed is about 75°, or 80° with no indications of its rising higher. Guard against the temperature of the bed falling below 60° by increasing the thickness of the coverings of litter should it be necessary. Until the spawn is used it should be kept in a perfectly dry place, as it will run and exhaust itself if it be the least damp.—E. H.

1743.—**Culture of Kalosanthes.**—These are very easily cultivated and flower very freely. Cuttings put in early last summer should flower well in June this year. The reason that they do not flower is probably that the plants have been grown in a dark, badly-ventilated part of the greenhouse. The plants should be placed in the full sun all through the season near the glass, and they also enjoy plenty of fresh air. Treated thus they flower very freely; and it is best to grow up a succession of plants and throw away those that have flowered. A specimen may be grown 12 ft. in circumference in two years, and will form a dense mass of flowers; but it will only do so well once.—J. D.

1745.—**Cucumber-growing in Warm Greenhouses.**—Turfy loam, as full of fibre as possible, and about one-third old hotbed manure or leaf-mould mixed with it, will grow Cucumbers well. Train up the leading shoot unstopped till it has nearly reached its full limit, but pinch in all laterals one joint beyond the fruit. If too thick, some of the laterals may require removal, but do as much of the pruning as possible with the finger and thumb. Take 65° as the mean night temperature, but for summer the question of temperature is not so important, as plenty of Cucumbers are grown without artificial heat at all after May, by shutting up the house early, with the sunshine inside. Maintain a moist atmosphere by sprinkling water about the laths and walls. When bearing freely give liquid manure twice a week. Place the sheep manure in a tub, fill it with soft water, well stir it, and when settled it will be excellent for Cucumbers in bearing. In the pruning of Cucumbers keep the growth thin enough to do justice to the foliage.—E. H.

1744.—**Manuring Crops.**—The mixture of stable manure and guano is suitable for Gooseberry and Currant bushes; guano is not so good for Potatoes; phosphates are better. Carrots and Parsnips should have no strong manures given to them, but the mixture would suit Onions and Turnips. The stable manure will be better dug into the land in winter, and the artificial compounds applied as a top dressing, or in a liquid form after the plants are up—about four or five pounds to the square rod, according to its quality. Guano should be applied cautiously to Peas, if at all. Cabbages are gross feeders, and for them anything in the shape of manure is suitable. Salt is a capital manure, especially for light porous soils.—E. H.

1734.—**Effects of the Weather.**—Cut back the Aucubas early next month to living wood. They will all break again. In the severe winter of 1860-61 many of our Deodars were killed to the snow line, but they all broke again, and many of them made handsome specimens and are still doing well. Do not be in a hurry in cutting down; see what life remains. When the dead wood is all cut out, select a new leader, and assist it to become erect by some mechanical contrivance; a stout stake will in most cases suffice.—E. H.

1749.—**How to Make a Herb Bed.**—The best time to make herb beds is in April. Where the soil is good the question of aspect is not so important. The following are indispensable: Thyme (common and Lemon), Sage, Mint, Tarragon, Winter Marjoram, Fennel, Balm, Chervil, and Parsley. Sage and Thyme may be increased by cuttings or seeds, the former preferable; Mint, Tarragon, Marjoram, Balm, and Fennel by division of roots, although the latter is easily raised from seeds sown now. Chervil should be sown now, again in a month's time, and again in August for winter. Parsley should be sown now, and again in middle of July. Annual Herbs, such as Basil, Sweet Marjoram, and summer Savory, sow in a gentle hotbed in April and plant out in May; or sow the seed in a warm position in the open air in the latter month.—E. H.

1564.—**Roses for Low Walls.**—Maréchal Niel, Climbing Devoniensis, Duchess of Edinburgh, and Souvenir de la Malmaison, are amongst the finest of the climbing Roses. They are vigorous growers, and should be planted quite 6 ft. apart, so that the shoots may be trained horizontally.—B.

1566.—**Propagating Tacsonias.**—Take free, healthy cuttings of the half-matured wood, cut them to two eyes, and insert them deeply in sandy peat. Place in a hand-light or frame; keep close and moist until roots are emitted. From the middle of July to the middle of August is the best time for taking the cuttings.—J. C. B.

1572.—**Flowering Plants for Fernery.**—If the Ferns are in a close glass case it will be useless to attempt to grow flowering plants with them. If they are in the open air, Primulas, Saxifrages, and flowering bulbs may be planted amongst them. The Canary Creeper is of quick growth and flowers freely.—C.

1575.—**Propagating Berberis Darwini.**—This handsome flowering shrub is easily propagated by means of seed. Sow at once in pans of loam and leaf-mould; place in a cold frame, covering with a pane of glass until the seedlings appear above ground. Then gradually inure to the open air. We should not suppose that the berries are hurtful; the fruits of its congeners, dulcis, aquifolium, and the common Barberry, are comestible.—C. B.

1559.—**Plants for Greenhouse.**—For a select list of the best and most useful Pelargoniums and Fuchsias I would refer "Amateur" to p. 804, Vol. I. Any of those there named cannot fail to give the greatest satisfaction. Golden Gem, Bijou, aurea, floribunda, and Little Beauty are good varieties of Calceolarias. Rose Maréchal Niel, Tacsonia Van Volxemi, Passifloras Impératice Eugénie and Campbelli, and Lapagerias alba and rosea are amongst the best of flowering climbing plants.—J. C. B.

1510.—**Flowering Evergreens for Walls.**—We know of nothing to equal the Magnolia grandiflora for this purpose. There are the evergreen Roses, which, however, lose their freshness in severe weather, whereas the Magnolia when thus placed remains in good condition the whole year through. Procure the Exmouth variety, which flowers in a young state.—B.

1576.—**Camellias Failing.**—It is really difficult to assign a reason for the Camellias failing in the manner described, and only very bad treatment could produce such disastrous results. Have the plants stood on an open stage over a flue, some unsuspected crack in which might have caused the damage? If the foliage was healthy when the plants were removed to the warm house, it is evident that they must have received a sudden and severe check, or they would not have gone bad in such a short space of time.—J. C. B.

1562.—**Flowers for Bouquets in June.**—We should think that the best plan would be to devote the house to Tea and other Roses and double Geraniums, which are welcome in all floral arrangements, and are specially adapted for button-holes. Mignonette might also be sown. There are many other choice flowers which would come in at that time, but which require to be grown one season for the purpose.—J. C.

1573.—**Pelargoniums Failing.**—It was wrong to shift the Pelargoniums in the dead of the winter. They should have been kept in small pots until they were fairly in growth. Allow them to remain as they are, watering very carefully. If the wood is sound, they will soon commence to break from the old stems.—C.

1574.—**Stephanotis Leaves Turning Yellow.**—We can only surmise that the soil has been maintained in a too moist condition. Allow it to dry out, and then water, each time just enough to moisten it through. Great care in this respect will restore the roots to health, and cause the formation of fresh fibre.—C.

1621.—**Sparrows Eating Lawn Seeds.**—Take pieces of bright tin, about 3 in. square; bore a small hole in one corner of each, and suspend them by light string tied to stakes at intervals over the lawn, so that they sway freely about with the wind, only just clearing the surface of the ground. The birds cannot stand this. The higher the support, and the more freely the tin sways the less they like it. A few at intervals of 10 or 12 yards over the lawn are enough. Any old pieces of tin will do cut up, but they must be bright.—SUB.

Weedy Lawns.—Coltsfoot is a very troublesome weed. About three years ago I found it a great nuisance. Where I could, I had it dug up; but where the soil was dry and light close to the house, I found it rooting 2 ft. or 3 ft. into the foundations. If a piece 1 in. long is left in the ground, the chances are that it will turn up alive. I therefore persistently beheaded every

one as fast as they appeared; and, when I could without injury to plants around, added a little salt to the cut stems. By this means I cleared my place in about two years. I should think if "Lover of Green Lawns" made free use of his roller and mowing machine, the Coltsfoot would have little chance of long life above ground, at any rate on his lawn.—RUSTIC.

1727.—**Cats in Gardens.**—If the garden is walled all round it is easy to keep out these pests by placing wire netting flat on the wall. When thus placed (with the consent of the neighbouring owners), the wire netting of about 1 yard width will be found to hang down a little on each side, and no cat in the world has any idea of how to get round the angle.—WITHYCOMBE.

1719.—**Raising New Zealand Flax from Seeds.** The seeds vegetate quite freely in a heated house or gentle hotbed. Sow thinly in shallow boxes, and when the plants are 6 in. high plant them out in the open garden.—J. D.

1728.—**Forcing Duc Van Thol Tulips.**—If these have been treated the same as Hyacinths every bulb ought to have produced a flower if they were well ripened last year. Forcing ought not to be attempted until the bulbs have produced a considerable proportion of roots, and then the temperature ought not to exceed 50° as a minimum to begin with.—J.

1730.—**Pruning Roses for Exhibition.**—To obtain flowers from Hybrid Perpetual Roses about the end of August, it would be necessary to prune them early, so that they would flower early to be cut over, in order that they may start again, and the second flowering would be about the end of August in an early season. It would be a mistake to allow the Roses to grow and prune so late that only one set of bloom would be obtained.—J. D.

1368.—Leopoldshal Kainit can be obtained here from J. Cadle & Co., Docks, Gloucester, and is a cheap manure, but unless properly used may not be of much benefit. I should advise you to read an article which appeared in the *Farm Journal* of November 25 last, by G. Embrey, of Gloucester, on the use of Kainit in agriculture.—G. N.

1754.—**Culture of Tuberoses.**—What is the latest month these will open properly in a temperature of 55°? Also, how long do the bulbs take to flower from time of starting? And what is to be done with the side spikes? Are they to be nipped off?—C. L. [They will open all the year round in the temperature you name. They take from three to five months to come into flower from the time of planting, according to the time of year and the treatment they receive. The side-shoots are best rubbed off if good blooms only are wanted.]

1755.—**Parffian for Roses.**—What quantity of paraffin to a gallon of water would make a suitable mixture for Roses?—H. W. [We, of course, presume you want the mixture for killing insects on Roses. A good wineglassful of paraffin to a gallon of water will be plenty strong enough. If the Rose shoots are very tender, half the quantity will be enough.]

1756.—**Dielytra spectabilis.**—Will some one give me information on the culture of this plant?—G. W. [If for outdoor culture, plant it in deep, rich garden soil, and let it alone. If for pots, plant it out in spring and lift it in autumn, pot it, and place in greenhouse or window. The roots may be divided when too large.]

1757.—**Spiræa filipendula.**—I have some plants of this, which I keep in a steady bottom-heat. What treatment do they require when they begin to grow?—S. [Are you sure it is not Spiræa japonica? S. filipendula is a hardy border plant seldom used for forcing. In either case take the plants out of the bottom-heat, and place them on an airy shelf in the greenhouse.]

1758.—**Cucumbers in Frames.**—On February 27 I got some manure from a stable, and put it on my garden in a heap; and on 4th inst. I put it, ten barrow-loads into my frame, which is 5 ft. by 3 ft. On 6th inst. I put about 4 in. of earth on the top of the manure, and put in a Telegraph Cucumber plant. I then put on the lights. Yesterday and to-day the manure has steamed very much. I therefore opened the lights about ½ in. to allow it to escape; but what I am the most surprised at is that the bed has sunk down quite 1 ft., although I made it as firm as possible. Will it do the plant any harm if I take it out, and add a few more barrow-loads of manure on the bed?—G. E. A. N. [If the plant is still small you might remove the soil, and put in more manure, or better still, leaves; but if growing freely, add 1 in. of soil on the top, without disturbing it in any way. If the heat goes down put a lining of manure round the sides of the frame.]

1759.—**Moss Roses.**—Each Rose bought and planted in November last had about three shoots each, each shoot 3 ft. long. They are all breaking bud nearly to the top. How much should I shorten them when pruning?—C. H. [Let them remain as they are.]

1760.—**Improving Garden Soil.**—The mould in my garden is of a damp nature, and in some parts where it is hard it is covered with Moss. I have tried to grow flowers and vegetables, but they do not come to perfection. Can this mould be made any use of whatever? and which would it do for best, flower or vegetable garden?—G. H. MORTIMER, *Pimlico*. [The ground wants draining. Trench it 2 ft. or 3 ft. deep, and in the bottom of each trench bury a quantity of old bricks or stones; also apply some wood ashes to the soil to kill the Moss.]

1761.—**Cropping a London Garden.**—I have a garden in London on the clay; I do not know what to grow, and when I know what to grow I do not know how to grow it. I have two long beds, both manured, one facing the north and the other the south.—K. B. W. [If you read GARDENING from time to time you will get all the information you need; much has already been said on the subject.]

1762.—**Hyacinths after Flowering.**—My Hyacinths (in glasses) are nearly over; how shall I save them for next season?—NOVICE. [Plant them out in the garden; they are little or no use for next year.]

1763.—**Plants in Leaf-mould.**—Will Fuchsias and Geraniums do potted in leaf-mould?—I. A. G. [Yes, if you add half loam, or even common garden mould and some sand.]

1764.—**Helleborus niger**—When is the best time to plant this?—SUBSCRIBER. [Plant now or in April.]

1765.—**Tomatoes.**—What is the best soil for these?—S. [Turfy loam and a little leaf-mould.]

1766.—**Hyacinths in Pots.**—Will it be better to let my Hyacinths in pots remain in them for another season, or take them out and dry them off?—NOVICE. [Plant them out, and let them flower in the garden next year.]

1767.—**Planting Potatoes.**—When may I plant Magnum Bonum Potatoes? and what distance from set to set, and row from row? AMATEUR R. K. [Plant early next month. The rows may be 2½ ft. apart, and the sets 1½ ft. or wider if convenient.]

1768.—**Double Violets not Blooming.**—I have some nice plants, the buds of which wither instead of opening.—QUEENIE [Place them in a light airy window, and give them a little weak manure-water occasionally; water them only when they need it.]

1769.—**Planting Grape Vines.**—I have a Black Hamburgh Vine in a large pot; would it do planted inside of a greenhouse, as I have no place outside that would do, it is just breaking into leaf. What is the best soil? and should it be cut back? I can only plant it on top of the stages, as the flue and hot-water pipes go all round the house.—I. A. G. [If you can make room for a large square box inside the house the Vine would do in it, but it will not succeed well over the flues; cannot you make a place outside? Soil, loam and old mortar rubbish; plant at once; do not cut it.]

Procuring Clematis. — *S.* — These may be got at any good hardy plant nursery.

Double White Rocket.—*Ellesmere.*—At any good hardy plant nursery. See advertising columns.

Creeper for the Back of Greenhouse.—*J. A. G.*—A Gloire de Dijon, Maréchal Niel, or Devoniensis Rose will be as good as anything you can employ.

Sowing Sweet Peas.—*Tyrone.*—These may be sown till the end of April for autumn blooming.

Nasturtiums Eaten by Grubs.—*Tyrone.*—Mix lime and soot with the soil at once. The Nasturtiums will not be planted till May.

Stove in Greenhouse.—*W. L. E.*—The stove to heat a flue may be inside the house, but the fireplace must of course be outside.

Depth of Box for Japanese Maize.—*Tyrone.*—6 in. will do, but if deeper the better.

Ripening Pears in Cellars.—*Constant Reader.*—The cellar is too damp and the temperature too close and warm. Keep them as cool as possible, and dry.

QUERIES.

1770.—**Climbers for Walls.**—What will grow best on a wall with an east aspect? I have tried Virginian Creeper, which shrivels, and the leaves fall off before turning red.—BRAMBLE.

1771.—**Lawn Tennis Court.**—I am about laying down a lawn tennis court; the ground is somewhat on the incline. Can any practical reader give me any information how to proceed with the work, and the necessary materials required? At present the Grass is rank, and the subsoil (about 2 ft. down) is stiff loam or clay. Also what space is necessary for a full-sized and efficient tennis lawn?—R. K.

1772.—**Uses of Sulphate of Ammonia.**—Will some one tell me how to use sulphate of ammonia in a flower garden as an artificial manure or otherwise?—T. WILLIAMS.

1773.—**Plants for Screens.**—I have a room in my house with a window at each end. Outside one of them is a piece of ground where clothes are hung out to dry. This is disagreeable. Could any one suggest an inexpensive way of shutting out the view with flowers? It is a large window, not a bay.—OXONIAN.

1774.—**Growing Herbs.**—I wish to have a good supply of Mint, Sage, Thyme, and Parsley, all through the summer, beginning as early as possible. Will any one kindly give me a few hints?—LOCO.

1775.—**Gladioli for Exhibition.**—Would some reader who has grown Gladioli for exhibition tell me if Gladioli potted in 6-in. pots and plunged in the open border would give as good results as if planted in the ground? My reason for desiring to grow them in pots is that in case of boisterous weather I could remove them to the greenhouse a short time before the show, and so have the flower-spikes in good condition; but if this would be at the sacrifice of size in the flowers and spikes I would rather plant them in the open ground and provide a temporary protection during the blooming season.—FLORIBUNDUS.

1776.—**Hardy Coleus.**—I find in catalogues that Coleus Verschafelti is spoken off as the only hardy sort, and that not pefectly so. This is wrong, as there is a kind much more able to withstand the cold. It is a black-leaved kind, almost like the Perilla; yet far handsomer and more velvety. I lost my plants of it in winter. Can any one tell me the name of this Coleus, and where it can be obtained?—WITHYCOMBE.

1777.—**Cucumbers not Growing.**—For three years I have grown Cucumbers with tolerable success, and at the closing of last year I was requested to have these plants fruiting much earlier than heretofore; therefore I commenced operations at the beginning of the present year, and find that the plants in lieu of being earlier, will, if anything, be later. In January I put the seeds in; they came up all right, made their third leaf, and then remained at a standstill. The house is about 30 ft. by 12 ft., span roof, bed down each side, about 2 ft. wide and 1½ ft. deep. It is heated by means of a flue and two rows of 4-in. hot-water pipes, which run right round. From the time the seeds were put in, I have kept it as near 70° as possible—at times 75° with a moist temperature continually; but with all this, the plants will not grow. What must I do? The soil consists of one good-sized barrowful of Hops, which were used last year for heating outside frames; two of rotten manure, used last year for Mushrooms; and six of old rotten turf.—ONE IN A PROPER FIX.

1778.—**A Good Winter Vegetable.**—Seeing in a recent issue of GARDENING an article on the Leek from "A. H.," where he says they may be grown with 9 in. to 12 in. of clear white, I am desirous of gaining particulars as to rearing, transplanting, and growing Leeks; what manure is best for them, and how applied.—TYNESIDE.

1779.—**Culture of Statice Halfordi.**—Will some one kindly give me instructions as to the culture of this plant?—SUBSCRIBER.

1780.—**Culture of Polemonium confertum.**—Will any one tell me the soil and situation suitable for the successful culture of this hardy plant?—H. C.

1781.—**Black Kidney Potato.**—Can any reader inform me if there is another name for this Potato? In Mid-Kent it is called Nigger-boy. Also, where can sets of it be purchased?—R. BURNS.

1782.—**Black or Nigger-boy Radishes.**—Perhaps some one can tell me by what other name this Radish goes, and where the seed can be obtained?—R. BURNS.

1783.—**Removal of Fruit Trees, Shrubs, &c.**—As I am about to leave my house, I shall feel obliged if any reader will inform me if I can remove fruit trees, Rose trees, shrubs, &c., from the garden. I purchased them from the person from whom I took the house, and I hold the house upon a three years' agreement, which is silent upon the subject of removal of trees and shrubs.—A CONSTANT READER.

1784.—**Chrysanthemums for Show.**—When and where should I strike Chrysanthemum cuttings? What soil is most suitable? How can I grow them pyramid shape? Also, the last time for potting and stopping, so as to get them in for November show?—A. L.

1785.—**How to grow Arums.**—Would any one give me cultural directions for the following Arums: Dracunculus, æthiopica, italicum, crinitum, and maculatum marmoratum.—S.

1786.—**Soil for Hardy Lady's-slipper.**—Will any one tell me if the following Cypripediums will succeed well in pots of good turfy fibrous loam, the pots being half filled with drainage, viz.—C. Occidentale, arietinum, pubescens, spectabile?—L. S. B.

1787.—**Hyacinths not Growing.**—I have some Hyacinth bulbs which I planted in September in pots, and they have neither sent out roots or leaves; can any reader tell me the best thing to do with them?—GEORGE WHITE.

1788.—**Old-fashioned Flowers.**—My old-fashioned plants, which I am anxious to cultivate, will not thrive. I mean especially Primroses, Polyanthuses, Daisies, Pansies, and Alpine Cress. The roots come out of the ground, the leaves become smaller, and after a year or two the plants disappear. I have tried various aspects; I have planted and divided them at various seasons, or left them to themselves; but always with the same result. Will any one suggest a remedy?—E. R.

1789.—**Blue Flower for North Aspect.**—Would some one tell me the name of a small plant, the seeds of which I could get at any nurseryman's, which would grow in a north aspect in front of bushes? One with small blue flowers preferred.—H.

1790.—**Budding Plum Stocks.**—I have a quantity of Plum suckers, and I want to remove them to different parts of my garden; would it be best to graft or bud the suckers first, and then remove them at the fall of the year? Would Apples come to perfection grafted on Plum suckers?—F. B. B.

1791.—**Sowing Begonias.**—Having some Begonia seed of the tuberous-rooted varieties, I should be glad if some one would give me information as to what heat they require to raise them so as to bloom the same season?—C. C.

1792.—**Soot and Lime for Crops.**—Are these beneficial to Onions, Peas, and Wheat, and what quantity can I apply per square yard to each of the above named crops?—R. K.

THE HOUSEHOLD.

CABBAGE COOKERY.

OF all culinary vegetables the Cabbage tribe is the most ancient and the most extensively cultivated. Being extremely likely to run into varieties at the smallest provocation either from the soil or climate, the original wild Cabbage has given rise to the various white and red Cabbages, Savoys, Brussels Sprouts, Cauliflowers, Broccoli, Kale, the different Borecoles generally included under the popular name of "Greens," and even the Tree Cabbage of Jersey and the Turnip-rooted Cabbage, or Kohl Rabi as it is generally called. The usual method of cooking Cabbages in England is to cut them in four, soak for a couple of hours in cold salt water, and throw them into boiling water, to which a handful of salt and a pinch of carbonate of soda have been added. After about half-an-hour's boiling they are taken out and drained in a cullender or squeezed between two plates, and are then served up to table without any further preparation. A better way, however, of cooking Cabbage is to steam it or bake it. By steaming or baking we avoid the subsequent squeezing, which always spoils their appearance. Prepared in either of these ways, the Cabbage is at best an insipid vegetable, requiring the addition of many condiments to make it palatable. Those who know how to cook vegetables, however, have devised a large number of remedies for the constitutional tastelessness of this wholesome vegetable.

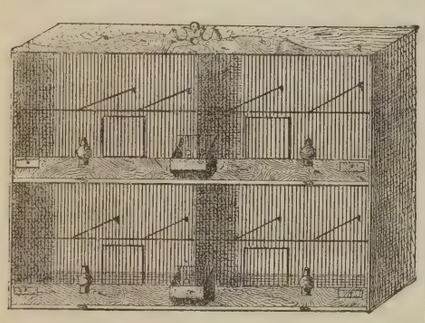
CABBAGE WITH BACON.—Trim and quarter one or more young Cabbages or Savoys. Soak in cold water for two hours. Throw into boiling water, boil for twenty mi-

nutes, and drain thoroughly, or if you have the appliances you may bake or steam instead. Mince a piece of bacon fat very finely, adding chopped Shallot, Onion, sweet Herbs, pepper and spice to taste; mix the mince well together and throw into a saucepan. When the bacon is melted lay your Cabbage in it, and add enough hob stock to half cover it. Simmer gently for twenty-minutes, and place the pieces of Cabbage on a dish. Thicken the liquor left behind with a little flour and pour over all.

STUFFED CABBAGE LEAVES TURKISH FASHION.—Blanch the long leaves of a White Cabbage. Cut out a number of pieces of the leaves of about 3 in. square, taking care to avoid the coarser ribs of the leaf. Make a mince of a pound of fillet of mutton, two handfuls blanched Rice, chopped Onion or Shallot, Parsley, fine Herbs, salt and pepper. In the centre of each piece of Cabbage leaf place a small heap of the mince and fold it like a small parcel, tying a piece of packetthread round it to keep it from opening. Arrange the little packets in rows in a stewpan, pressing them closely together. Cover them with broth and reduce to about one half. Place on a moderate fire for half-an hour and pile on a dish in the form of a pyramid. Pass the liquor in the stewpan through a sieve, boil up, thicken with beaten-up egg, and flavour with lemon juice to taste.

HOME PETS.

Breeding Cage. — The accompanying sketch is a four compartment breeding cage, which for saving time in feeding, &c., is invaluable. The best wood is American Pine; the front parts should be Mahogany. The doors are in front, being made of wire. One seed-box answers for two compartments, as may be seen by glancing at the sketch. A water-bottle is provided for each division; also egg tray in each corner. One sand tray is sufficient for two compartments, as it runs right along. This four-division cage can be made very cheaply by any one having a little ingenuity and mechanical taste, and can be ornamented at will. A good



Breeding Cage for Canaries.

size would be 3 ft. square and say 1 ft. deep. The wire should be what is called No. 17, and for the cross pieces No. 13. The tin binding wire for securing them together is 10d. per lb., Nos. 17 and 13 about 8d. per lb. To pierce the holes in the wood ready to receive the wires it is a good plan to file down a bradawl to the exact size and length the wire is to go into the wood, as in this case the wires can all be cut the same length, and no difficulty will arise in fixing them.—A.D'A.

Breeding Canaries.—I have bred canaries for several years and only lost two young birds during the time. The method I pursue is this: Give the parent birds chopped egg, bread crumbs, and Maw seed mixed from the time that they are put in the breeding cage; also plenty of green stuff and a bath daily till the hen sits. I always leave the eggs in the nest, and do not allow them to be frequently looked at. I believe failure of so many broods arises from the constant peeping of friends. The eight young ones I raised last year were hatched and reared in the sitting-room, there were plenty of light and warmth, but the cage was never disturbed, except for cleaning and supplying the birds with food.—S. S.

Food for Bullfinches.—Is Millet a wholesome seed to give bullfinches and canaries? I wish to vary their usual diet of rape and canary seed.—H. R., *Christchurch*.

Birds for Aviary.—What birds (British and foreign) would be best for a small aviary, 2 ft. by 3 ft. and 4 ft. high, in a conservatory?—EVAN DHU.

BEES.

Plants for Bees and starting Bee-keeping.—"W. B." is wrongly informed that "'Bees never gather honey near their own hives.' Mignonette is good, so is the common blue Veronica, and many other plants; but his bees can gather but a very small proportion of their honey from his own garden; they will range over a radius of two miles from the hives, gathering from all flowers suitable. "W. B." says he has been offered a "stock" or a "swarm" of bees in the spring. If he gets the former, let him have it now by all means, feed it; and he may have a swarm also by the end of May if the weather is propitious. If a swarm, he must, of course, wait until his friend has one to send him. I should strongly advise him to use bar-frame hives; and of these the Woodbury size is the best, but not the original Woodbury construction. Let him have his frames with wide shoulders, fitting one against the other without notches or tacks. The aspect is immaterial, so long as the entrances are not exposed to cold north-east winds in winter, and the hives are not in too hot a position in summer. They must not be moved about, but where placed must stand. A stock to travel 100 miles should (I presume it is in a straw skep) be covered with cheese-cloth tied firmly over the open mouth, and reversed, *i.e.*, the crown downwards, so that the combs rest on the crown instead of hanging from it, as in the ordinary position. This is to avoid risk of breaking down; a rope handle should be put across for railway porters to lift by, and distinctly labelled "This side up." A swarm may be sent in any box with plenty of ventilation, and turned into its hive on arrival. If in a good honey country, and in a good year, 40 lbs., or even as much as 100 lbs., of honey may be obtained from a stock; but 20 lbs. to 30 lbs. is a fair quantity. By the bar-frame system, and using an extracter, 100 lbs. may be obtained, more likely than 40 lbs. from a skep. Sugar and water (not beer) boiled to a syrup is obviously cheaper for bees to live upon during the winter than honey, and more healthy for them.—APIS.

POULTRY.

Pure-bred Fowls.—Are pure-bred birds more profitable than cross-bred ones? Yes, if they be the right birds in the right place—that is to say, of a breed suited to the locality and conditions under which they are kept. No one should attempt to keep a delicate kind on a cold, damp soil or exposed situation, or a range-loving kind, such as game, in a small back yard. And yet high prices are paid for pens of pure-bred fowls every day by persons ignorant of their requirements; failure is the result, and a return to the old stamp of mongrel, which, in nine cases out of ten, is an indifferent layer, and eats its head off six months during the year. Again, one can never feel the amount of interest in a lot of cross-bred birds, perhaps not two of which are alike, as in a nice pen of some pure breed, in which there is something to study and admire. It is a well known fact that cross-bred birds eat much more than pure-bred ones. Then as to laying qualities, what mongrel hen was ever known to successfully compete with the Hamburgh or Leghorn in point of number of eggs? Perhaps the most economical method to get together a pen of pure-bred birds is to purchase a sitting of eggs from some good breeder, of which numbers are now being advertised at from 5s. to 10s. a dozen, and to carefully set them under a good steady hen, and, almost needless to add, to look well after the chickens until matured.—ANDALUSIAN.

Food for Fowls.—Can anyone tell me whether Hominy is as good as Oatmeal for feeding fowls?—HEN-WIFE.

How to Make an Incubator.—How can an amateur make a cheap and effective small machine for artificial hatching chickens?—A NORWICH SUBSCRIBER.

Brahma Fowls.—These should have low perches about 1 ft. from the ground, and they should be made large and square to suit their large feet.—M. J. S.

White Brahma Fowls.—Now is the proper time to set eggs for obtaining pullets to lay in winter. Chickens should only be hatched during March, April, or beginning of May to be profitable.

Chickens Losing the Use of their Legs.—I had some light Brahma Dorking chickens which were hatched on January 15th 1880, and for the last fortnight they have lost the use of their legs, yet they eat well. Can any reader kindly inform me how to cure them?—G. N. B.

Eggs for Hatching.—Eggs, if placed in holes on their broad ends, will keep a month for setting; but if stored on the small end not more than half that time with certainty. Of course the fresher eggs are the better for setting, and the stronger the chicks.—W. B.

Tortoise.—What is the lowest temperature to which tortoises can be exposed without injury? On what will they feed if left to themselves in a warm kitchen garden? Or what should I give them? Do they require water? I should be much obliged for any information. I have also a pair of small American water tortoises; should I give them a little raw fish?—H. R., *Christchurch*.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

VARIEGATED TREES.

Of all variegated trees, suited alike for large or small gardens, the variegated Maple (Acer Negundo albo-variegatus), which we now figure, is perhaps the most striking and ornamental in appearance. It may be employed in various ways. Grown in bush form on its own roots, or grafted close to the ground on a stock of the plain-leaved variety, it forms handsome bushy specimens, which may be used in combinations of all kinds. It may be used to form the outside margin of groups which have been already planted in the ordinary way with variegated or plain-leaved trees or shrubs. Grafted as a half-standard at various heights, it can be employed in groups planted with regularity, and consisting of trees or shrubs arranged in an order graduated according to the stature of each. If a rather tall half-standard is required, it should be grafted on a stock of Acer californicum. A group formed exclusively of this variegated Maple, grafted as tall standards and half-standards, with purple-leaved or deep green-leaved shrubs planted among them as underwood, presents a most splendid effect; but this can only be done when the adjoining grounds are extensive. In small gardens a well-grown single specimen, either trained as a standard or bush, will give much better effect than rows or groups of it. Indeed, the greatest mistake we have seen made with this handsome tree has been overplanting. A large shapely head of it standing boldly out from among glossy green, low-growing shrubs has a much more telling effect than long banks and borders planted solely with this one kind of tree. This Acer will grow in almost any kind of soil or situation, but its variegation is brought out to the best advantage when it is planted in deep sandy and not too rich a soil, and in a warm sheltered position, where its leafage is not torn by the wind. The Japanese Maples which have been introduced to our gardens during the last few years are admirable subjects for small gardens, where a warm soil, and not too cold a climate, exists. They have beautiful copper-coloured, Palm-shaped leaves, they are elegant in habit, and though rather expensive they well repay their cost. They are also excellent subjects grown in large pots for unheated conservatories or corridors. They are extensively grown in Messrs. Veitch's nursery, Coomle Wood, Kingston-on-Thames. The purple-leaved Peach is also a handsome tree of recent introduction. It is perfectly hardy, grows freely in good soil, and its rich bronze or purple foliage would form a striking contrast to that of the Acer negundo above alluded to. Some of the variegated Privets, too, when grown in tree form are well suited to small gardens; and if a golden-leaved tree is needed, the golden-leaved Elder surpasses all others, the variegated Holly excepted. It is a plant of free growth, and only requires to be cut down nearly to the ground yearly to form a bush of large, bright, golden foliage. In some of the London parks it is used in the front of shrubberies, and for forming a background to beds of summer bedding plants. There is also a silver-leaved variety of the Elder, but it is not nearly so effective as the golden-leaved kind. The Golden Yew also makes a fine lawn tree. It should be grafted on stocks of the common kind, and may be grown either in the form of standards, pyramids, or bushes. We have seen it grafted on the top of plants left uncut in hedges, and when large heads

THE SILVER-LEAVED MAPLE.
(Acer Negundo variegatum).

are formed a fine effect is gained. There is a copper-coloured-leaved Filbert well worth growing in the rougher parts of the garden; and with the copper-leaved Beeches of course every one is acquainted. In conclusion we may remark, with regard to variegated trees, that a preponderance of any one kind should be avoided, and that in all cases one well-grown specimen of each kind will give better results than a crowded mass of trees and shrubs of any kind.

VEGETABLES.

NOTES ON SOWING SEEDS.

Sow only seeds of good quality, both as regards germinating power and pure stocks. A favourable seed time can generally be had by watching and waiting, and promptly taking advantage of it when it arrives; it is better to wait a few days than to sow when the ground is in an unfit condition to receive the seed. But with land difficult to work in a backward season a crop may often be successfully got in with the aid of a few light boards laid across the bed; this, in some cases, may perhaps involve a little more labour, but it ensures success. The same means may be usefully employed in transplanting in wet seasons, as nothing makes land that is naturally adhesive so unfit for plants as treading on it when its surface is wet. All seeds are best sown in drills, at varying distances, according to each particular kind, but in all cases room should be allowed to use the hoe freely. Both thick and very thin sowing are, in certain cases, evils to be avoided; but the character of the land should be considered in deciding what quantity of seed to sow. On light, warm land, where every seed will grow, fewer seeds should be sown than on damp, heavy land, and where, perhaps, in a cold, unfavourable season, slugs and other insect enemies may be troublesome. Besides, no matter how good the seeds may be, some will produce better and stronger plants than others, and there should always be sufficient plants on the ground to allow of a choice being made, so that the crop, when finally thinned, may consist of selected plants only.

The depth at which seeds should be buried should bear some proportion to the size of the seed; but the character of the soil in which they are laid is even of more importance. In warm, dry soils seeds may be safely and advantageously placed deeper than where the soil is of a heavier nature. Drills for what are termed small seeds need not in any case be more than ½ in. deep, and less will suffice on heavy soils. In the latter case, unless the soil be in a mellow condition, cover with a prepared compost, of which burnt earth, or decayed vegetable matter from the waste-heap, form the chief part. When this plan is adopted, no matter what the soil or the season, the seeds will germinate regularly and well. Larger seeds, such as Peas and Beans, may be covered 2 in. for early crops, while later sowings may be put in a little deeper. The same remark applies to later sowings of small seeds, such as those of Turnips, as it often happens that in dry weather, by burying them just a little deeper, the seeds can be laid in moist soil, and will, in consequence, germinate more speedily, and when seeds lie long in the land the crop cannot be so even or regular. In certain cases the germination of seeds may be hastened by mixing them with some damp substance, such as sand, or by soaking them in water for twenty-four hours or so before sowing; but the most natural way is usually the best, and artificial plans should only be adopted where, from some unavoidable cause, the sowing of the crop has been delayed.

All seeds should be sown on moderately firm land; for some plants, such as Onions, this is indispensable, and it is especially necessary if the land be of such a nature as to not readily consolidate or settle down, and there is a vast difference in different gardens in this respect. Treading is the means commonly adopted to secure solidity, but where land is very light the iron roller may be drawn over it twice in contrary directions. If the surface be not sufficiently dry to bear the roller, or even the feet, at the time of sowing, delay the sowing till the surface is in a suitable condition. This need not, however, interefere with the sowing of the seeds, as the final treading or rolling may be given a week or ten days after the seeds have been sown, and it will be better to do it then than not at all.

Nothing is better than lime dustings to preserve young plants from slugs, and early in the morning or late in the evening is the best time to apply them. Stirring the surface among the young crops the moment they appear, freely and often, will also help to keep the slugs in check, as they cannot travel well over a rough, uneven surface, and the stirring will also encourage and stimulate the young plants to grow up out of their reach. Scattering dry ashes over any crop to which slugs are partial is likewise a good preventive, as their soft, slimy bodies cannot get over the sharp, jagged edges of the small particles of cinder with which sifted ashes abound. Where mice or birds are numerous and troublesome, the seeds should be thinly coated with red lead just previous to sowing, in order to make them distasteful. This is easily done: first damp the quantity of seeds to be sown with water or oil; then scatter a little dry lead over them, and stir and mix altogether. It must not be forgotten by persons unaccustomed to the use of such substances that red lead is poisonous. Paraffin oil may also be used for soaking seeds in to preserve them from vermin; but as commonly sold in the shops it greatly varies in strength, and should be used first experimentally till its effect has been fully proved.

Celeriac or Turnip-rooted Celery.—Of vegetables used in foreign countries, large quantities are not worth growing in England;

Turnip-rooted Celery (Celeriac).

but the Celeriac is an exception. It is by no means difficult to grow; and it is one of the most useful of winter vegetables, coming into use, as it does, when the kitchen garden is almost bare. On the Continent it is met with on every table, and is considered a welcome delicacy. A deep, well-prepared, rich soil is necessary to grow it well. It should be sown in February or March on a hotbed, or in pans under glass; the seed will come up in about sixteen days. Thin out, transplant in another genial bed as soon as the seedlings will bear handling, and plant them in the open ground in May, 14 in. apart, in rows 16 in. asunder. Frequent hoeings and a thick mulching are of great benefit to the plants; and during summer water must be abundantly supplied. The roots of the Celeriac are ready for use by the beginning of October, and they may be kept in the open ground until the following April, if protection be given them, consisting of mats, straw, or any other kind; otherwise they must be removed to a cold cellar before severe weather sets in, or they may be put in a bed close together after part of the leaves has been cut off. Thus situated, they will be easily secured from frost. In February, however, they must be again removed, in order to check growth, which would destroy their quality. Treated in this way, Celeriac will be most serviceable during the winter, and will afford excellent dishes. It never requires earthing up—an advantage which it has over Celery. As regards its use, cut off the leaves, remove all irregular knobs, give the root a hard brushing in clean water, and it will be ready for the cook. In a raw state, cut into thin slices, it forms a good addition to winter salads. Cut in pieces ½ in. thick, and, when boiled, fried with butter, and served with sauce, is the general way in which it is put on French tables. Boiled as above and made into salad, with salt, pepper, oil, and vinegar, like Potatoes, is the chief way in which it is used in Germany.—D. G.

Vegetables for a Clay Subsoil.—Situated as we are, under clouds of smoke and chemical vapours, with a subsoil of clay yards deep, it requires both time and attention to select the sorts of vegetables most suitable for cropping such a soil, as many of the better kinds do not yield even one-third of a crop. Allow me, therefore, to enumerate such varieties as may be relied upon to produce, with proper attention, satisfactory results, commencing with Broccoli, which depend so much on the character of the winter and the method of cultivation. Frogmore, Knight's Protecting, Dwarf Russian, and Brimstone we find to stand well. Brimstone is, however, most to be trusted. Amongst Cauliflowers, Autumn Giant is quite at home, and also Walcheren, for August sowing. Negro, or dark or pale Dun Kidney Beans answer well. Amongst Lettuces, Tom Thumb and All the Year Round have proved to be very good, but all the Cos varieties under ordinary cultivation are poor. Peas, being most important, require extra attention, for if the seed get starved before it comes through the soil a poor crop may be expected. A trench, a spade deep and about 1 ft. wide, should be taken out, and filled up with leaves or littery manure, and covered over with soil; on this sow the Peas, which will thus be kept dry and warm. Little Gem, sown thinly, three rows on a 4 ft. bed, with a few branches between the rows, produces good crops, and comes in early. In fact, it is a useful little Pea and well-flavoured, and as it only grows from 12 in. to 18 in. in height, it may be sown in any snug corner. Alpha and Advancer may be both sown on the same day, as the latter is eight to ten days later than the former; both are good in flavour, and abundant bearers. For the general crop, Champion of England, Yorkshire Hero, and Prince of Wales should be selected; and for late crops, Ne Plus Ultra and Omega, combining, as they do, quantity and quality. Omega only grows about 3 ft. in height, and is very desirable where Pea stakes are scarce.—J. S.

Shallots from Seed.—I do not think it is generally known that Shallots will grow much finer from seed than from the parent root. The seed should be sown early in March in ground prepared as for Onions, namely—trench the ground two spits deep with a quantity of manure, and then tread the surface as hard as you can. Sow the seed in drills. This is the common, not the true, Shallot. The common Shallot is very nearly allied to the Onion, and seeds freely. The true one does not.—W. S.

Beck's Green Gem Bean.—I have received so many letters from readers of GARDENING ILLUSTRATED anxious to procure this excellent dwarf Broad Bean, that I fear it is not in many of the country nurserymen's seed lists. It is by no means a new or rare vegetable, as I have grown it for years from seeds procured from Messrs. Veitch, of Chelsea, and Messrs. Osborn, of Fulham. It is a really genuine acquisition for amateurs with small gardens, as it produces an immense crop of delicious small Beans, greatly preferred for table to the large Broad Beans in general cultivation. There are plenty of willing purchasers for such things who have no use for startling novelties.—J. GROOM, *Linton*.

The Hop as a Vegetable.—Although so much grown for its well-known use, and often seen as a climber in small gardens, the Hop is little grown in England as a vegetable. In Belgium its use as a vegetable is almost universal. The young shoots are cut as soon as they are 2 in. or 3 in. above the ground, and boiled in salt and water; they are then dried and sprinkled with the juice of a Lemon to keep them white. Before serving, put them again over the fire for a few minutes, with salt and plenty of butter, then add eggs mixed with milk, when they may be eaten like Asparagus, to which they are not inferior. Managed in this way, it makes a most delicate and refined dish. The young shoots of Hops are generally cut twice for the sake of strengthening the plants; therefore it would not be advisable to grow Hops

for their shoots to be used as a vegetable only—when they could be gathered in Hop-fields, in gardens, and even in a wild state, all of which are equally good. If this were well known, many of the inhabitants of Kent would add a wholesome dish to their tables, and might even make money by sending the shoots to market. —D.

Crisp Celery.—In order to grow crisp Celery, the manure put into the trenches should be as rich and rotten as possible. If there be any straw or dryness in the manure, the Celery is sure to be pithy and not crisp. Another great point is never to let the plants suffer from want of water or liquid manure, both when first planted out and during dry, warm summers; some varieties of the dwarfer kinds of Celery are more nutty and crisp than the larger-growing sorts. Among whites, Sandringham and Turner's Incomparable belong to this class; and amongst reds Sulham Prize Pink and Major Clarke's Red.

Garlic.—Garlic, though flourishing best in a dry, fertile soil and warm situation, will do almost anywhere. Plant the cloves, *i.e.*, the separated portions of the "bulbs," in shallow drills about 1 ft. asunder, and 6 in. apart in the row, covering them with soil to the depth of an inch or two. Or plant old bulbs 1 ft. apart each way, and never deep, as wet is apt to get down among the cloves, causing canker and mildew. Merely stretch a line or measure; take the bulbs by the neck, and press them half, or say two-thirds, into the soil. Then drop a pinch of fine sifted cinder ashes over them, to prevent worms from drawing them out of the ground. February or March are about the best seasons to plant them. A small quantity may be planted in autumn, if it is desired to have a stock early the following season. From this autumnal, or, to speak more precisely, October planting, bulbs may be taken up for use early in the succeeding summer. Any time after the leaves turn yellow the crop may be taken up and dried, hanging it up in bunches by the stalks in any airy room. It requires no culture whatever, excepting to be kept free from weeds—if it be necessary to mention in connection with any one small crop what is a first necessity with all.—J. B.

Autumn Broccoli.—Two years ago, having found a small planting of Self-protecting Autumn Broccoli to come into use just at the desired season—viz., in autumn, after Cauliflowers were over—we last year grew it largely with the most satisfactory results, as we had an abundant supply until the early spring varieties were fit for use. We sowed the seeds of it the first week in April, and as soon as the plants were large enough to handle, they were pricked out into nursery beds until the first crop of Peas was cleared off in the end of June, when drills were drawn, and the young Broccoli plants put out 2½ ft. apart, with a crowbar, on solid land. One good soaking of water, and an occasional surface-hoeing, were all the attention they received until November, when they presented as dwarf and even a surface as I ever saw in a plantation of Broccoli, every plant being short and sturdy in the stem, with a fine head of leaves that curled over and enveloped the heads so completely as to defy any moderate frost. As a precaution, however, against any sudden visitation of severe weather, we laid them slightly sloping to the north, and packed dry Fern and litter securely among them, reserving a supply for effectually protecting overhead should frost become intense, as I find Broccoli or Cauliflowers are much better in quality when protected in this way than when lifted and placed in close pits or cellars.—J.

Leeks for Use in Spring.—At this season of the year, when old Onions are getting past their best, and autumn-sown ones are scarcely fit for use, Leeks become especially valuable, and by many are preferred to Onions on account of their mild flavour. The seed should be sown at once, and as soon as the young plants are large enough, they should be transplanted in shallow trenches, like Celery, two or three rows abreast, so as to allow of soil being worked amongst them. If planted on level ground deep holes should be made, and the plants dropped in, with just sufficient soil to cover them, afterwards earthing them up as they grow. I find the London Flag and Ayton Castle excellent kinds for general purposes.—J.

FRUIT.

MELON CULTURE IN COOL PITS OR FRAMES.

Everybody who has a pit or two for bringing on bedding plants has the means within his reach of securing a supply of good-flavoured Melons at least in August, September, and October. In Melon culture, without much artificial heat, one of the chief elements of success lies in the selection of suitable kinds for the purpose; and one of the best varieties I have hitherto tried under cool treatment is Victory of Bath. It is a green-fleshed kind, possessing a hardy, vigorous constitution, sets freely, is of good flavour, and, I may add, is first-class in every respect. Amongst scarlet-fleshed kinds we have hitherto found Scarlet Gem most useful, the only objection to it being its size—it is rather too small.

The end of March is early enough to make the first sowing, to have strong plants to turn out the first or second week in May; and a pit may generally be spared by that time, as many of the hardier kinds of bedding plants will then be hardening off in the open air. Another sowing may be made about the middle of April, and a third about the end of the month will furnish a succession of plants for planting all the pits as they become vacant. When the pit or frame is clear of bedding plants, clear it out and have it thoroughly lime-washed, and filled to within a foot of the glass with any fermenting materials that may be at hand. Stable manure is the best, treading it well down; the object is to get a nice root warmth to start the plants till we have warm summer weather. When the heat has subsided a little—and as the bulk is not great it is not likely to be violent—pack into the centre of each light about three barrowloads of good strong turfy loam, levelling a little of it down to the back and front, in order to keep down any noxious gases that may arise from the fermenting material. In two or three days, when the soil is nicely warm, the plants may be put out, and unless the lights or sashes are very large, one plant in the centre of each light will be sufficient. There is never anything gained by crowding, but rather the reverse. The pits must be matted up at night, unless the nights are quite warm in July. The after management is very simple, the great secret of success being timely attention to their wants, which may be shortly summed up thus:—

In planting take care that there is room for the full development of the foliage, without coming in contact with the glass, and then, if the ventilation is attended to, there will be no fear of scorching. Attend frequently to the stopping and pegging out of the shoots; to allow them to grow into a thicket, and then to be compelled to use the knife to amputate strong growths, is bad. Earth them up as soon as they have fairly begun to run, pressing down the soil rather firmly. A firm soil checks grossness of growth and promotes fruitfulness. Sprinkle them about half-past three o'clock in the afternoons of fine days with water that has stood in the sun all day, shutting up at the same time. When a sufficient number of fruit for a crop is set (and with summer Melons there is not much difficulty about this matter, for bees and insects generally perform that part of the work after May) cut off all that are not required, and mulch the beds over with short manure. During the time the fruit is swelling, Melons take a good deal of nourishment, and the mulching will be a great support to them.

Red spider is the greatest enemy with which Melons have to contend in the way of insect pests, but by taking care that the pits are cleansed and whitewashed annually, sprinkling and shutting up early on fine days, giving air early in the morning, to be followed by a free circulation, but no shading, and moderate root watering, with water from which the chill has been taken—if all these things are attended to there will not be much trouble with regard to red spider. Whenever, however, it has by any neglect or oversight effected a lodgment, the best remedy I have ever found for it is, after the morning ventilation has been given, on a warm sunny day, to close the pit, having previously thoroughly saturated its atmosphere with clean soft water, by syringing the walls and every available part of the interior, so as to fill it with a dense vapour, and to keep it closed several hours, if necessary repeating the syringing and slightly shading if the day is very hot. The theory upon which this cure depends is this: red spider thrives amazingly in a high dry atmosphere, but moisture in any state it abhors; and a close, warm, moist atmosphere is death to it. I have always found this remedy efficient, if taken in time, in the case of both Melons and Cucumber. Of course when the leaves are destroyed by it nothing will resuscitate them. The two most fertile sources of red spider on any plant are extreme dryness either at the root or in the surrounding atmosphere, and deficient ventilation. As the fruit approaches maturity, less moisture must be given, especially at the roots; although if the weather is very bright, a light sprinkling or dewing over with a fine rose or a syringe in the afternoon will help to keep the foliage clean and healthy, for without healthy foliage finely-flavoured fruit cannot be obtained. E. H.

Hedge of Grape Vines on the Top of a Wall.

Growing Fruit or Creepers on the Tops of Walls.—The annexed sketch shows an easy and ornamental way of adding to the height of walls when such a course is necessary. A simple wire railing is placed on the top of the wall, and along it may be trained any kind of flowering climbers, such as Clematis, Tea Roses, &c.; or in very warm, sunny places Grape Vines would answer admirably.

Strawberries that Resist Wet.—Those that I have found to stand wet weather best are Keen's Seedling, Dr. Hogg (a good variety of British Queen), Admiral Dundas, Elton (a late variety), and the old Eliza. These, I think, are superior to all the new kinds.—Rambler.

How to make Vines Break their Lower Buds.—Early forced Vines, especially pot Vines, are generally disposed to break their top buds, or the latest formed ones, first. A sharp bend, by tightening the tissues and arresting the ascent of the sap, will cause the lower buds to break—at least those immediately below the bend; but twisting the cane regularly its whole length checks the rush of sap through the tissues more effectually, and causes all the buds to break. Another good plan is to keep the bottom part of the cane near the pipes and the top away from them, and comparatively cool. I have often adopted this plan with long Vine rods of one year's growth, and have always found it to be successful.—J.

Canterbury Bells.—Now is the best time to sow seed of Campanula medium and its varieties if it be desired to secure large, massive plants that will produce several spikes of flowers, and display the beauties of one of our finest hardy border plants to the best advantage. The seed is small, and may, if plentiful, be sown in

a warm spot in the open ground, but it is much safer to sow it in shallow pans or boxes placed in a frame or on a shelf in the greenhouse, as in the latter case all the seed will probably germinate and an abundance of plants be secured. When these are large enough to handle conveniently, prick them out into some shady spot, and keep them watered until the plants are well rooted. From that time they may safely be left to take care of themselves until September, when they should be transplanted into their permanent places in the flower borders, and so treated will not only get well established before the winter arrives, but will also develop their blooming crowns for the next year. This constitutes nearly all that it is needful to say as to the raising of a seedling stock of these Campanulas, better known as Canterbury Bells. They may be classed into three sections—single flowers, as seen in the old-fashioned single Bells; doubles, as found in the stout massive flowers in which two, three, and even four bells seem to be compressed into the outer one; and duplex flowers, as seen in the calycanthema forms, in which one bell grows in the other, and the combined two resemble a cup standing in a saucer. The single varieties, as of old, are still to be had, but no one would care to be dependent upon these only who have once seen the beautiful products of a fine modern double and semi-double strain, and which will also produce some single flowers. Whilst the old single strains comprised only white and blue colours, the modern strains include nearly a score of hues, inclusive of white, lavender, mauve, several shades of purple, pink, rose, salmon, and also blue. The duplex strains have hitherto been chiefly confined to white and blue, but other colours are now being introduced. It is a curious fact in relation to this section that whilst the seed of the white form is of a pale hue and the seed of the blue form is of a dark tint, the seed of the double and semi-double forms of all colours is the same, viz., a glossy brown. The habit of the latter section is compact and good, the plants when in bloom ranging from 18 in. to 24 in. in height, forming perfect pyramids of flowers. From frequent experience I have found that these may be lifted and placed in pots even when in full bloom without injury, and as they invariable flower from the middle of June to the middle of July, according to place and season, it would be possible, in the shape of a large group of these in pots, to introduce to some of the midsummer shows a very novel and interesting feature. If so required, or if to be used for corridor, house, or conservatory decoration, it would be best to lift the plants and pot them into 6-in. pots early in May; this would enable them to get well established before the blooming period. The calycanthema section usually exhibits both a taller and a looser growth, and should be planted in borders behind the double and single kinds.—A.

The Foxglove.—The wild Foxglove of our hedgerows is a favourite and pleasing summer flower growing here and there singly or in clumps by the sides of the lanes, or in the woods; but its decorative qualities are best seen when growing in large masses. Wild Foxgloves seldom differ in colour; rarely is one seen that is not of the common red kind, and if one that is really distinct were found it probably would be torn from its roots and borne away in triumph. Garden varieties are not so circumscribed in this respect. In these the colours vary much, and include pure white, cream, rose, red, deep red, and other shades. The great charm, however, of the garden varieties lies in pretty throat markings, consisting of spots and blotchings of deep purple and maroon, and these, when seen in large flowers, make them resemble those of a Gloxinia; hence the name gloxinioides, applied to some finely-spotted kinds. The garden plants are more robust, the stems stouter, and the flowers much larger than those of the wild kind; and, altogether, they make at the present time truly grand border flowers. The seed being small, it is best sown in pans or boxes under glass early in May, and when the young plants are well up they should be placed out of doors to get thoroughly hardened before finally planting out. Where planted in shrubbery borders it is well to make clumps of three plants, as they produce a finer effect than when set singly. Not unfrequently the Foxglove blooms two years in succession; but in all cases it is well to sow a little seed annually.—A. D.

A Blue-flowered Garden Plant (Commelina cœlestis).—I would like to draw the attention of those who love a mixed border to the above plant, which deserves to be well known. The colour of its flowers are of that lovely and intense blue so rare in Nature, and its leaves, somewhat resembling the Begonia in shape, are very pretty. If tubers be planted at once in the open, they will commence to flower in June, and if prevented seeding by being kept well picked, will continue in bloom the whole summer. It appears to thrive in almost any soil, and in the winter simply wants taking up and storing away as a Dahlia. When I add that this plant can be purchased for the modest sum of fourpence, the wonder is increased that it is not everywhere seen in the gardens of all those lovers of Nature who get beyond the stereotyped Calceolaria and Geranium. It is called the Blue Spiderwort.—LEWIS W.

Calceolarias in Trenches.—The readiest way of protecting these from late spring frosts is to transplant them into trenches, similar to those used for late Celery. We have just transferred our stock with good balls of earth into trenches 3 ft. wide and 1 ft. deep; a few cross bearers are then laid over the trench, and at night or during hail or snow storms they are covered with long canvas screens; or evergreen branches might be substituted until the beds are cleared for their reception.—J. G.

Tyerman's Groundsel (Senecio pulcher).—This is a first-rate border plant, growing to a

Tyerman's Groundsel (Senecio pulcher), showing growth of plant.

height of 2½ ft., and bearing large purple Daisy-shaped blossoms from early in summer till late in autumn. It grows well in rich sandy soil, and it can be increased by seed and division of the roots. It is obtainable at any good hardy plant nursery.

Tuberous-rooted Begonias.—These beautiful, free-blooming, and easily cultivated flowers are rapidly becoming great favourites; and the more widely they become known, the more they will commend themselves to notice, as undoubtedly they are the best value that can be obtained—in the first instance during the months of June, July, August, and September as ornaments of the summer bedding garden; and, secondly, as soon as there is any danger of frost at night, as ornaments of the conservatory for another month or six weeks by lifting them into pots from the beds, which can be done without the slightest check, as they invariably lift with capital balls and masses of fibrous roots closely and compactly surrounding the tuber. They afford five months of continuous and uninterrmittent bloom, which is more than any other plant with which we are acquainted will do. All they require to make them thrive and grow luxuriantly and quickly into large, free-branching tufts is a light, rich soil, and copious waterings while making their growth if the summer be at all hot and dry. The beds should also not be planted too thickly, as if the tubers be at all strong and of good size they make such vigorous and abundant growth, that if put too close to one another the plants will soon get crowded; but when this inadvertently happens, every second one may with perfect safety be taken up even in the middle of summer and removed to another bed, where, after a good watering, it will next day appear as if it had never been transplanted at all, and the room afforded by its removal will be most welcome and serviceable to those left in the bed, allowing them fully to develop themselves, by means of which growth they will soon cover and fill up the gaps made by the removals in question. Begonias require a sheltered situation, fully exposed to the sun, as they object to exposure to high winds, which are apt to break off the soft succulent stems at their junction with the tuber. No amount of heavy rains does them the slightest injury; the blooms are not knocked off by it, and though the heads droop somewhat and bend under it, they rise again absolutely uninjured as soon as the sun shines out after the shower. Those who wish to increase their stock of these lovely plants should begin in good time to take off their cuttings, just as they would those of a zonal Pelargonium, about the middle of July, and these cuttings will root freely in silver-sand and water in from a fortnight to three weeks, and before the end of the season make good-sized tubers, which often give a little bloom towards the end of autumn, and flower abundantly in the open ground the following year. Indeed, young tubers in about their second year often yield individually finer blooms than older and larger ones, which as soon as they commence to start and show the eyes from whence the shoots spring, may be cut up just like a Potato.—W. E. G.

Raby Castle Wallflower.—This is the best habited of all the Wallflowers, and, to my mind, the best in colour, notwithstanding the prejudice (at least for market purposes) in favour of the dark varieties. It is nearly equal in colour to Cheiranthus Marshalli, and a few plants of it in early spring brighten up a place wonderfully. But I am desirous of pointing out its utility as a pot or decorative plant. Sown now (March or April), and when strong enough planted out to nurse in poor stiff soil, stout dwarf plants about 9 in. or 1 ft. high will be the result. These lifted late in autumn, wintered in a cold pit, and introduced early in spring to the conservatory or window, will yield a scent and give a mass of flower that will be very acceptable so early in the season. Everybody loves the scent of a Wallflower.—T. W.

How to Raise Anemones from Seed.—The following method will enable any one to raise Anemones with complete success, provided the soil be suitable—namely, a moist loam. The seed may be sown at once. As to the seed-bed it need not be large. Choose the sunniest part of the garden. Dig and rake till the surface is very fine, tread it down, and give it a good watering. Wait until the surface is dry enough to scratch with a fine rake; sow broadcast, covering the seed about the thickness of a shilling; beat flat with a spade, and give a light sprinkling of water. Now comes the most important point in my method. Never let a ray of sunshine reach the bed; cover it with newspapers, spreading a few Pea sticks or something to retain the covering in its place. Keep the surface of the bed always moist. In about twenty days the young plants will begin to appear; when all seem up, remove the covering, and no further care will be needed except watering. This must be strictly attended to, for if the bed becomes once thoroughly dry, the plants are apt, after forming small bulbs about the size of Peas, to stop growing, the foliage to die, and the bulbs to lie dormant for months; but if kept well watered through the summer they will go on growing all through the winter, and begin to blossom the following spring. Some young seedlings from seed sown as soon as it was ripe last year, removed to a box placed outside a south window, without any protection, are now showing young blossom-buds and will soon be in flower. The seedlings may either be left to blossom where they were sown, or be transplanted in September or October.—H. P.

Winter Aconites and Snowdrops Under Trees.—Much has been written respecting undergrowth for trees. Where this difficulty really exists, I would recommend the above to be planted thickly, as when seen in large masses they are exceedingly pretty at this comparatively flowerless season. They will thrive even where Grass will not grow, under the densest of deciduous trees.—C.

Outdoor Verbenas.—Good plants of Verbenas cannot be had except good cuttings are procurable. The best means of ensuring these for spring propagation is to keep a few store plants in pots all the summer, cutting them pretty closely in in the autumn, and giving them a shift into larger pots of rich soil. Soon afterwards they should be set in a cool house or pit from which frost is excluded, and in this way better cuttings will be ensured in spring than those from autumn-struck plants.—G.

Iris Reticulata in Borders.—Here, in Derbyshire, Iris reticulata is perfectly hardy, and I have never found the slightest difficulty in growing it. It succeeds well in almost any situation, although when grown in a warm and sheltered position its flowers are much finer than they otherwise would be. The bulbs increase rapidly if left in the ground undisturbed. —H. C.

ROSES.

WALL ROSES.

These in some instances soon become unsightly, but, planted in good soil and worked on suitable stocks, they are the finest ornaments that can be used for the adornment of a dwelling. I passed one only a few days since, the whole front of which was covered with Maréchal Niel and Gloire de Dijon, two of the best Roses that can be used for the purpose, as they are both free growing, and if properly treated and trained are very floriferous. The way to get the greatest number of fine blooms is to lay in as much of the medium-sized young wood as there is fair room for, from the ends of which the blooms come, but if spurred back in the ordinary manner they push little else but strong shoots, that become so large and gross as to be killed or injured by frost during the winter. It is to be feared that Roses have suffered much in this way from the severe one we have just passed through, and therefore much judgment and care will be necessary in the pruning and thinning to see that such wood only is left that has escaped being cut, which the colour and condition of the bark will show, for, if affected to any serious extent, it will by this have turned nearly black, or be full of dark spots, arising from decay of the parts. Maréchal Niel is very liable to become affected in this way, as is also the climbing Devoniensis, a superb Rose for walls and a very robust grower. The colours of the three mentioned being all pale, they look far the best against red brick, which shows them off to advantage. The difficulty with many is the training, but if the walls are trellised over with galvanised wire, or simply have the same strained horizontally along every other course, the matter is an easy one, as they can then be tied securely and the use of nails and shreds abolished. A trellis, however, put up diamond-fashion, with the wires about 9 in. apart, looks best, and costs but little more, and such a one answers well for the support of all kinds of creepers.

The Banksian Roses, both yellow and white, are capital wall plants where there is much to space to cover, and are great favourites with many for cutting, their small miniature clusters of flowers being just the thing for dressing glasses or working up in bouquets. These had, like the foregoing, bloom on the young sprayey wood of the previous year, and only require thinning out in the summer to admit plenty of light and air to ripen and harden it up. Banksians do best on a south aspect, and so also do the Maréchal Niel and climbing Devoniensis, both of which are rather tender, especially in early spring when making fresh foliage, but the Gloire de Dijon is so hardy that it will succeed almost anywhere, and when in partial shade the flowers come beautifully tinted, and are altogether much richer in colour than when more fully exposed. If we would have the Tea kinds safe, the only place to plant is at the foot of low walls, or make up narrow borders near the same, where they can be protected by straw hurdles, or something of that kind, to shield them from the severity of the weather. Mulched and managed in this way, the tops may be preserved intact, and fine blooms may be obtained for exhibition or other purposes. One of the best growers I know of these lovely sweet-scented flowers has screens made of Reed, Gorse, or Bracken, whichever comes to hand first, and these he puts up by means of a few posts and rails, so as to form a succession of barriers against wind and frost, the latter of which is warded off in winter by placing others of lighter make as copings over the top. Cared for in this way, the plants are never injured at any time, and therefore are always strong and vigorous, quite different from what one often sees under less favoured circumstances, when they are sometimes so crippled as to be unable to break again.—S. D.

Fairy Roses.—Neat, bushy little plants of brightly-flowered Fairy Roses at all times meet with a ready demand in Covent Garden, where they may now be found in abundance. Considering their easy culture and their usefulness, they might with advantage be grown more largely than they are in greenhouses and windows. They are grown as follows:—Cuttings, consisting of the young tops, are inserted in pots of sandy soil in May or June, and placed in a warm house where they can be shaded from direct sunshine until they are fairly rooted. They are then potted singly into 4-in. pots, using sandy loam and leaf-mould. When these pots are filled with roots they are shifted into 5-in. or 6-in. pots, kept in a light, airy house, where they receive abundance of water at the roots, and by the following spring bushy plants, well furnished with deep green leaves and a profusion of buds and blossoms are the result. It is necessary to fumigate occasionally to keep down green fly, to which these little Roses are

Flower of Senecio pulcher (natural size).

subject, and frequent syringings on fine days greatly improve their growth. In vases in rooms such plants last a long time in perfection, and they furnish sprays of green leafage and buds for bouquets and other floral arrangements.—C.

Pruning Roses.—The method of pruning Roses usually adopted cannot be considered a good one; for, instead of the trees increasing yearly in size and vigour, they are, when established, kept nearly at the same size. What plant is more lovely isolated on an open lawn than a spreading, naturally grown Rose? The best I ever saw had simply their heads relieved of the weakest shoots, the strong branches being allowed to grow at will. In a few years large branching heads, furnished with long garlands of blossoms, were the result.—S.

Cesspool Manure for Grass.—If ground peat charcoal is used in cesspools, a first-class manure will be made almost equal to the best guano at about a quarter of the cost. —Rustic.

Gooseberry Caterpillars.—Some years ago I had a large garden half a mile from any other, and my Gooseberry and Currant bushes were yearly infested with numerous caterpillars. After trying various things ineffectually, I found white Hellebore a specific, pouring boiling water over it, and when cold, syringing the lower leaves of the bushes on a dry day on the first appearance of the caterpillars. All appeared to be poisoned by a single application. I continued to use it for three successive seasons, and for several years after my garden was free from these pests.—Anonymous.

Myrobella Plum for Hedges.—I think that Myrobella Plum promises well as a hedge plant, but it does not seem to like damp soil. I planted the two ends of a somewhat neglected field adjoining my garden, and find that at the top and bottom of the field where the drainage is good the Plum has grown well, but in the centre, where the soil was rather wet, it has made very little growth. —George H. Wilson.

Bottom-Heat in Frames.—I have given these forcing frames much attention, and for the information of others I will relate how to properly construct one. Make a wooden frame, on four legs, 9 in. deep, 3 ft. long, and 2 ft. wide, with a bottom, and have a round hole, 8 in. or 10 in., in centre of same. Now get made a tin trough—say 21 in. by 18 in., and 2 in. deep; have a small tin pipe ¼ in. in diameter, about 6 in. long, soldered up through the bottom of the trough at one end to within ¼ in. of the top; at the other end have a feeding pipe ½ in. in diameter, with screw top for the purpose of filling; it should be 9 in. long, and soldered at the other end inside the trough about ½ in. from bottom, that the water may flow out. Place the trough in the case, a small hole being made in bottom for drain-pipe. Now get a slate (or two, if one large enough is not to be had) the size of the bottom of case, and place it over trough and cement it round with Portland cement, to keep in the steam (I use slabs of baked clay ½ in. thick, which is very porous); fill the trough with water, place underneath a lamp (mineral oil) about 2 in. from the bottom of boiler. A sun burner ⅞ in. thick is the best to use, and large enough. The reason why that style is best is you use a conical chimney, which you can cover with a cylinder of thin sheet iron, and by having a small hole punched the size of a shilling, 1⅛ in. from bottom through it, you can regulate the flame, it being a protection to the chimney from draughts or splashing of water. Now, supposing your glass frame is made, you can place it in, but means must be taken to ensure ventilation by having openings 3 in. or 4 in. wide at back or sides. You will now have a moist heat, which is the object in view, not a dry one, because the steam under the slate bed keeps the Cocoa-nut fibre moist without injury to seeds or cuttings, and none of the fumes of the lamp can get in. If the ventilation is perfect you will have no drip; 75° is enough. A thermometer is indispensable. If required for outdoor use simply board up round the legs of the frame, making holes near the bottom to admit air to enable the lamp to burn.—Petros.

Snowdrops in Masses.—These delicate harbingers of spring are now in full beauty; but to be able to see them in perfection they must be allowed to thoroughly establish themselves in masses. On ground that has been dug their purity of colour gets dimmed through heavy rains, but in permanent positions, carpeted by Moss, Grass, or Ivy, they are simply exquisite.—J.

Help for Ireland.—We hear that the sum of £100 has been received from Messrs. Sutton & Sons, the Queen's seedsmen, Reading, as a donation towards the Duchess of Marlborough's Relief Fund; and we understand that the same firm has just presented 100 bushels of their celebrated disease-resisting Potato Magnum Bonum

to Mr. E. Purdon, of the *Irish Farmers' Gazette* Peasants' Seed Potato Fund, besides a large quantity of the same variety to the Irish Church Mission at Connemara, for distribution among the population who are in such distress in that district.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

March 29.—Boxing and potting Pelargoniums; propagating Verbenas, Mesembryanthemums, Lobelias, and Ageratums; potting off spring-struck Lobelias and Petunias; cutting up a large Dendrobium nobile, and making three plants of it; sowing annuals, also Scotch Kale, Brussels Sprouts, Savoys, Cottager's Kale, and a little Autumn Giant Cauliflower; likewise sowing Grass seeds in bare places on lawn; also more Radishes, Walcheren Cauliflower, and Celery; putting in Purple King Verbena cuttings and Pink pipings; plunging Rhododendrons, Azaleas, and spare Lilacs; putting in another forcing of Seakale, and covering up a number of crowns out-of-doors with flower-pots, over which soil is put to keep them as late as possible; moving Salvias to cold pits, also Balm; tying up Lettuces to blanch; levelling Celery land for Peas; digging in litter round Globe Artichokes; top-dressing Japan Lilies with peat and sheep manure; earthing up Cucumbers and Cabbage plants; clipping Holly hedges; hoeing among Wallflowers, Sweet Williams, and Lettuces; sowing Green Curled Endive, and All the Year Round and White Cos Lettuce; also Long and Red and White Turnip Radishes; drawing drills for Carrots and Beet; hand-weeding and Dutch-hoeing amongst autumn-sown Onions; making new Mushroom bed under north wall for summer use; earthing up Potatoes in frames.

March 30.—Putting Hollyhocks out-of-doors, and potting off bedding plants that are established into cold pits; preparing border for Carnations; top-dressing pot Vines with loam and manure, giving them a little Standen's manure once a week, and watering them every other day; pruning Roses; making alleys deeper between Asparagus beds with a view to afford them better drainage; sowing the main crop of the following sorts of Carrots, viz., Early Horn, Early Nantes, James's Intermediate, Long Surrey, and Altrincham; also main crop of Beetroot; potting spring-struck, Petunias, Heliotropes, Salvias, and Verbenas; renovating linings round frames; hoeing amongst Strawberries; potting Azaleas, Camellias, Cytisus, Palms, and Ericas; also potting spring-struck Pelargoniums, Alyssum, Coleus, seedling Petunias, and Balsams; placing the latter in Cucumber-pit; sowing Solanum capsicastrum and French Beans in heat, and another frame of Radishes; planting China Roses; beginning to plant Strawberries, taking them up with a ball and planting them with a trowel; also putting out Cucumbers and transplanting Balm.

March 31.—Sowing Leeks, also Vegetable Marrows and Ridge Cucumbers; putting in cuttings of Dahlias and choice sorts of zonal Pelargoniums for winter flowering; pricking out Celery in boxes; also Golden Pyrethrum and Tagetes signata; clearing off Seakale beds and getting them forked up; sticking Peas and earthing them up; potting Ghent Azaleas, Dielytras, and Spiræas; sowing Peas, Long-pod Beans, Asparagus, and Spinach; planting Pansies, Neopolitan Violets, and Sweet Peas; putting in cuttings of Iresine and Alternanthera; digging land for permanent Seakale, and manuring ground for remainder of autumn-sown Cauliflower; placing Celery plants in cold pits; earthing up autumn-sown Cabbage; shifting Strawberries, the fruits of which are swelling, into a warmer house, and removing those which are ripening fruit into a cool Vinery, in order to improve their flavour; top-dressing Strawberry beds.

April 1.—Preparing old Rhubarb ground for Potatoes; sowing Self-protecting Broccoli and Autumn Giant Cauliflower in frames; planting Myatt's Prolific Potato, and preparing sets for the main crop; sowing the following sorts of Broccoli—Early Purple Cape, Early White Cape, Walcheren, Snow's Winter White, Adams' Early White, and Early Purple Sprouting; also Dwarf Green Curled Savoy, Early Dwarf York Cabbage, Asparagus, and Green Curled Kale; potting off late-sown Tomatoes, Lobelias, and Melon plants; forking up the ground amongst the Cauliflower plants left in the frames to come in early, and giving them a top-dressing of rich manure; potting Petunias and Fuchsias; sowing Cabbage and Cauliflower to be ready September 1; also more Parsley, Alexandra and Neapolitan Lettuce, Early Dutch Turnips (to be ready June 10), Early Horn Carrots (to be ready June 19), and main summer crop of Cucumbers; transplanting Cabbage plants in drills; also last of autumn-bed in the open ground for Radishes; digging vacant borders; earthing up Cucumbers; salting Asparagus and Seakale land; potting Ferns.

April 2.—Sowing Mustard and Cress, Balsams, Asters, and Cockscombs; puttiug in cuttings of Coleus and Alternantheras; washing all the Roses with Quassia water to keep down green fly; giving Broad Beans a little earthing; watering Carrots, Asparagus, and Potatoes in frames; clearing off Brussels Sprouts stumps, and getting the ground manured and dug; sowing Asters, Stocks, Sweet Peas, Lupines, Sunflowers, Carnations, and Larkspurs; planting out Lily of the Valley and Hollyhocks; pricking out Celosias; putting scented Verbena cuttings, and moving Mignonette into cold frames; stopping shoots of Cucumber plants that are growing freely; sowing main crop of Beetroot, Salsafy, Scorzonera, all hardy herbs, including Borage, Angelica, and Fennel; planting Strawberry plants, and more Cauliflowers and Lettuces; likewise Pinus austriaca and Yews and Berberries: also Lily of the Valley, and a bed of Carnations; putting Ageratums, Salvias, Petunias, and Verbenas into cold pits, and getting Lilacs out-of-doors; staking Hollyhocks and Mignonette.

April 3.—Potting sweet-scented Verbenas, Fuchsias, the forward Tomatoes, and Sweeet Basil; planting out Melons in manure frames; removing bedding plants from Vineries in cold pits to harden, and thinning Grapes where required; looking over Strawberries in bloom, and picking off all weak and late blooms; also getting another batch into warmer quarters; rolling down all gravel and turf that require it; earthing-up Broad Beans, also autumn-sown Cabbages; mowing Grass verges, hoeing among growing crops, clearing Violet beds.

Greenhouses.—The preparation of bedding plants, both from seeds and cuttings, is now the most important indoor operation. If the sub-tropical plants were sown, as recommended, a few weeks ago, they will now be ready to prick out or pot on, as the case may be. After that, till now growth has started, keep them close and shaded, and then grow them in as cool a temperature as is compatible with health and sturdy growth. Seedlings of Amarantus, Perillas, Cineraria maritima, and others of a similar nature, may be pricked off into boxes and grown in an intermediate temperature. Calceolarias, Verbenas, Gnaphaliums, and Lobelias may be planted out in turf pits, and covered with straw hurdles, mats, or frigi domo. As we have not the convenience for turf pits, we plant them out in trenches that have been prepared for Celery, and cover wlth evergreen boughs. Many Pelargoniums, for want of room, are treated in the same way, and hitherto the plan has been successful. For vases and basket beds, the Ivy-leaved Pelargoniums—many varieties—are invaluable, and cuttings put in now will make good plants by bedding-out time. Amongst other appropriate creepers for such purposes may be named Cobæa scandens, Maurandya Barclayana, Convolvulus major, and Tropæolum canariense, all of which are best raised from seeds. Indoor plants now starting freely into growth must be encouraged. Stake plants in pots as requisite, bearing in mind, however, to use as few for that purpose as possible. As the young shoots lengthen they should be tied out at once to the principal supports. Newly-potted plants should be kept in the warmest corner of the house for a long time and excluded from cold draughts, but to plants in active growth plenty of air should be admitted and abundance of water given. Introduce Mignonette in pots for summer blooming. Rhodanthes are charming plants both for summer and autumn decoration; therefore sow some at once in 4-in. and 6-in. pots or in pans, and when ready prick the young plants out into pots, keeping them near the light and pinching them at the third joint. Hard-wooded greenhouse plants of all descriptions, except Azaleas, which are better moved later on, should immediately be potted. In all cases see that the ball of roots of every plant which has to be moved is thoroughly moistened beforehand; this should be attended to the day previous to potting, so as to give time for the water to drain off. Do not further disturb the roots than by the removal of the drainage crocks from the bottom of each ball; ram the new soil with the potting-stick until it is as close and solid as the ball of the plant; otherwise, when water is given afterwards, it will pass off through the new material, leaving the roots so dry that death or an unhealthy condition is sure to follow. All plants, large and small, should be placed sufficiently low in the pot for it to hold enough water at one application to moisten the soil, as where the watering of a plant has to be done in two or three applications the whole of the surface alone gets moistened.

Flower Garden.—Climbing Roses, Clematises, Virginian Creepers, Wistarias, and other climbers will now require attention as to pruning, regulating, and nailing, and any that need additional stimulus to ward off parasites and promote more vigorous growth should be top-dressed and mulched. Herbaceous plants may now be divided, regulated, and re-arranged; many kinds that are just starting into growth, such as Pyrethrums, Potentillas, Asters, Phloxes, and Delphiniums, will bear division without the least apparent check, and retain their vigour longer than when left in the same position for years. When re-planting, take pains to arrange the plants, both as to height of growth and colour of flowers, in order that the tall growers do not overshadow the dwarfer kinds. When the arrangements are finished, any vacant spaces there may be will come in for the sowing, or planting out of Sweet Peas, Lupins, Mignonette, Stocks, Asters, Zinnias, and other annuals, all of which add both to the beauty and interest of such borders. Cuttings of Herbaceous Phloxes put in some time ago, and now rooted, must be potted off. For want of room or time we had to put in a number of cuttings in a 3-in. pot; these have been potted off singly, one in the same sized pot. A few Phloxes cultivated in pots are very useful, and make a distinct feature in the greenhouse or conservatory about the month of September. The plants for this purpose should be potted as soon as they are fairly established in 6-in. pots. They will each produce one spike of bloom, and after this they should be placed out-of-doors. The plants in beds have made considerable growth, and it has been necessary to place the sticks to some of them. This must be done early, as the stalks snap off in a high wind close to the surface of the ground. Pyrethrums belong to a class of hardy border plants that are not sufficiently known. The large flowers, in form like a double-quilled Aster. are freely produced in June and July. They are also perfectly hardy, and are increased by division of the roots. Our plants were potted in the autumn, and have been wintered in cold frames; they are now planted in beds in rich soil.

Shrubberies.—The pruning of evergreens should be finished at once. Shrubbery borders should be lightly pointed over, taking care not to injure the roots in the operation or to disturb any bulbous plants that may be growing amongst the shrubs. Isolated specimens of newly-planted trees, especially if large, are much benefited by a few shrubs being planted around them for a year or two, to act as a protection from wind, frost, and drought; after the trees get established the nurses may be removed. Prune, where necessary, Ivies on walls, and fasten any in danger of falling away from them. Uncover Myrtles, Magnolias, Clematises, and other half-hardy plants on walls, and otherwise put them in order for the summer. Plant and re-arrange flowering deciduous shrubs, keeping in view ultimate effect, and so dispose of the stronger-growing varieties as not to overgrow the more delicate kinds. Even Hawthorns, beautiful and desirable though they be, frequently occupy the front rank of mixed shrubberies when they would have been better placed further back, or set in groups. The best for dressed grounds are Paul's Double Scarlet, a splendid variety that merits extensive cultivation, Multiplex (the best double white), Punicea (single scarlet), and Rosea superba. The double varieties just named are splendid subjects for pot culture. Mulch all newly-planted trees with leaf-soil, manure, or spent tan; top-dress Hollies, Rhododendrons, and such plants as may require stimulating, with rotten manure and soil.

Vegetables.

Cauliflower plants from frames may now be planted out in well-dug highly-manured ground—a planting trowel being used to remove them in order that as much root as possible and a good ball of earth may be secured—planting them 2 ft. apart each way, which for this crop will be ample space. Sow a full crop of Savoys and Broccoli; sow, also, some seed of Asparagus in lines 18 in. apart; likewise successional crops of Radishes, and occasionally some Lettuces, both Cabbage and Cos kinds. Finish transplanting Onions, and sow the summer crop at once. Sow Round Spinach between rows of Peas, or in some other places, in quantity sufficient to meet the demand; sow also some of the New Zealand Spinach in heat for a summer and early autumn crop; this variety often affords fine succulent leaves when ordinary Spinach cannot be had. Of Carrots sow a full crop in deeply-trenched ground, which should get a good dressing of fresh air-slaked lime. Sow some small kinds of Turnip in lines 1 ft. apart, or in beds 4 ft. wide, on warm, light soil. Earth up and stick Peas as they advance in growth; any exposed to cutting winds should have the assistance of a few evergreen branches to break its force. The following are first-rate sorts for sowing about this time—viz., Champion of England, Laxton's Prolific and Quality, Veitch's Perfection, Dickson's Favourite, M'Lean's Best of All, Prince of Wales, Wonderful, Fairbeard's Surprise, Victoria Marrow, Knight's Tall Marrow, British Queen, and Ne Plus Ultra. Transplant Cabbages as required.

As Rhubarb is a deep-rooting, gross-feeding plant, in all cases it should have rich deep soil, and if it be of a heavy, retentive nature, some old, exhausted tan, leaf-mould, wood-ashes, or sandy road-drift, if such can be procured, all mixed together, with 6 in. or 8 in. of good rotten manure, should be mixed with it, trenching the ground 2 ft. or 2½ ft. deep, plant-

ing 6 ft. apart each way. A crop of Radishes, Spinach, or Lettuce may be had off the ground between the rows before the Rhubarb makes sufficient growth to interfere with them. Existing beds of Rhubarb will be much benefited by heavy drenchings with strong manure water during the next two months. Now is a good time to make a fresh plantation of herbs; fork up the underground creeping roots, prepare a piece of ground in size proportionate to the supply required by digging and putting in a fair amount of manure, forming it into a bed about 4 ft. or 5 ft. wide; then take an inch or two of the soil off the top, lay on the roots not too thickly, and cover them with the soil that was removed, leaving the surface smooth. Growth will soon commence, but the produce will not be so soon ready as from an established bed; consequently it will be well to leave a portion of the old plantation undisturbed until that from the new one is ready for use. Camomile, Pennyroyal, and similar herbs, where required, should be planted in similar beds, putting in rows 1 ft. apart small pieces divided from the old plants. Sage is best grown from cuttings struck in the latter part of summer, when they root freely; such as were struck at that time can now be planted in rows in a bed. Lettuce from frames and under the protection of south walls should now be planted out in well-prepared and richly-manured ground—the richer the better—in order that they may be grown large and crisp, and also to prevent their running early to seed. Plant them 15 in. asunder in the rows, with the same distance between the rows. In taking them up use the planting trowel so as to check them as little as possible.

House and Window Gardening.

Sweet Peas as Basket Plants for Windows.—Baskets of Sweet Peas suspended in the window are elegant objects, so gracefully do their trailing stems and foliage fall over the basket on all sides. To have them in bloom in summer and autumn, the seed should be sown now, in pots placed in a frame or warm window. About twenty Peas in each 4-in. pot will be sufficient; and when the young seedlings are up and require more space, they should be turned out of the pots and planted in the baskets—three or more pots in each, according to its size. The baskets should be thickly lined with green Moss, and the soil used should be rich and light. As the Peas grow liquid manure should be given freely, and the baskets must be hung near the glass. Keep the blooms gathered as they begin to fade; and if a little artificial manure be given late in summer, the plants will bloom far into autumn.—E.

Iris reticulata in Windows.—During snowy or wet weather the beauty of this valuable Iris, when grown in the open border, is often to some extent lost. It therefore requires to be either covered with a hand-light or potted, in order to preserve its flowers. We lately saw some in pots and pans, in a nursery near London, which had been taken from the open ground whilst in full bloom. Placed in a cool house, it keeps in perfect condition for several weeks, and it fills the whole house with its scent. For filling windows this Iris might be used extensively; and if grown in pots or pans, plunged in a bed of ashes or soil during summer, and taken indoors when cold weather sets in, beautiful plants of it in full flower might be had much earlier in the year than they could be obtained in the open air, and they would form fit associates for Cyclamens, Primulas, and similar decorative plants.—C. S.

Flower Pots in Rooms.—The pots in which plants are grown in rooms should be kept clean. Even with careful watering, the surplus water will sometimes be allowed to stand in the saucer, and in consequence the outside surface of the pot will become covered with a layer of whitish or greenish matter. A properly baked pot is very porous, and allows the air to penetrate through it to the roots of the plant, which is absolutely necessary to its proper nourishment and healthy growth. As the dust impedes the transpiration of the leaves, so does the deposition of this whitish or greenish matter on the outside of the pot prevent the air from passing through it into the ball inside. Wherever it occurs, therefore, it should be carefully washed off. Frequent loosening of the surface soil, especially when the plants are watered with liquid manure, and the removal of every weed are, for the same reason, to be recommended.—B. R.

Flower or Fern Boxes.—A pretty and effective stand for Ferns or flowers may be constructed in the following manner:—Procure a box about 2 ft. long and 6 in. wide, and make four blocks for supports 3 in. high; then cover the whole, with the exception of the back, with virgin cork, and finish by giving a good coating of oak varnish. The cost of such a stand is not more than 2s., and it will prove a very useful ornament when placed in a room or in bare and open spaces in the greenhouse.—W. A. G.

Variegated American Aloe.—The uses of Agave americana variegata for decorative purposes can scarcely be too much dwelt upon. For halls, staircases, and lobbies, as well as for its more frequent positions on terraces and pillars and in conservatories, it is invaluable. There are, however, many places of this description where this species would be too large and out of harmony in its proportions with adjacent plants and other "fixings." For such places, there are many smaller species of Agave, which are just as easily grown, and quite as ornamental. Those who wish for information as regards varieties can see a large collection of them at Kew Gardens, and can purchase plants from the leading London nurserymen. They are easily grown in any loose soil, and if well attended to may be kept in vigorous health for years.

Variegated American Aloe (Agave americana variegata).

GLASSHOUSES & FRAMES.

DOUBLE-FLOWERED SEEDLING PETUNIAS.

Finding these so exceedingly useful during the greater part of last summer and autumn for greenhouse and conservatory decoration, as well as for bedding, I would strongly recommend any one having such places to keep gay, to get a packet of seed, of the double varieties, and sow it at once; double kinds being best adapted for pot culture and not so suitable for turning out, their flowers being too heavy to withstand the effect of wind and wet, which, towards the end of the season, sadly mar their beauty. By sowing thus early, plants may be grown to a large size and had in full bloom by July, if nursed on for a time in a warm greenhouse, and then placed in cold frames or a light house where they can get plenty of sun. This renders them short-jointed, and much more floriferous than they otherwise would be, as the least shade draws them up weakly, and makes their branches so puny as to require support. The best I had were plunged out-of-doors in a bed of ashes to keep the pots cool, and thus prevent the soil drying too rapidly. This kind of treatment appeared to suit their requirements exactly, as they grew close and dense, a condition aided by having the points of the shoots nipped out just before the plants received a shift into larger pots.

Although double Petunias may be propagated by means of cuttings, seedlings are preferable, as they grow stronger and give little trouble; but when any of very superior merit show themselves it is always worth while keeping a stock plant of such for cuttings, which, put in now, soon strike root on a manure-bed under a bell-glass kept close for a time. The single forms make grand beds if planted where they can have plenty of room to spread, but, as they are naturally strong growers, a poor soil is best for them, if deep, so that the roots can get well down; that checks any tendency to over-robustness, and yet affords the necessary support during dry weather. Besides forming magnificent beds, single Petunias make fine masses in borders, but when used in that way they require support; the neatest and best way of effecting this is using coarse-meshed rabbit wire cut into yard lengths, which, run round and tied to a stake at the ends, forms a capital frame, through which they thread their shoots and completely hide the wire with their gay blossoms and foliage. There are many other plants of a similar character for which a trellis made in this way answers well, and, as they last for years, nothing for the purpose can be more cheaper or more handy.

As Petunia seeds are very small, they should only be slightly covered at the time of sowing, otherwise the young plants are unable to push through the soil. Pans for such seeds should be filled nearly full with rough leaf-mould, and on the top of that should be put 1 in. or so of finely-sifted soil, made perfectly level and smooth. That done, the next thing is to give a gentle watering, and then they should not be disturbed for a few hours, when all will be ready for sowing. This should be done thinly, and a little silver-sand sprinkled over the seeds, when, if placed in a moist heat, they will soon germinate, especially if the pan be covered with a sheet of glass, or kept dark by a piece of paper for two or three days, as by that means evaporation is intercepted and a more uniform warmth maintained. S.

RAISING ANNUALS.

Of annuals for the flower garden that rank first are the Asters, Stocks, Verbenas, Phlox Drummondi, Marigolds, Antirrhinums, annual Chrysanthemums, Petunias, Violas, Pyrethrums, Mimuluses, and Lobelias. None of these require any bottom-heat whatever, being far better without it; and, if sown and attended to as follows, few failures will arise:—

Prepare some boxes 18 in. long, 12 in. wide, and 3 in. deep, which are a convenient size to remove about, and will hold an ordinary packet of any of the above varieties of seed. Have ready a compost of loam and leaf-mould or decomposed manure, with plenty of sand well mixed. Pass one-half of the compost through a ½-in. sieve; put the rough portion in the bottom of the boxes, which should have a cavity for drainage. Next put the portion of compost not sifted, finally finishing with fine soil passed

through the sieve. Cut a piece of ½-in. lath the width of the box, and by slightly pressing its edge into the soil you will make miniature drills in which to sow the seeds. After sowing, cover slightly with fine soil. Great care is requisite in watering. Never allow the soil to get dry. Either a fine rose or a syringe should be used, or, better still, an old hair-brush. Use the water in a tepid state, dipping your brush into the water, and a gentle shake over the soil will water in such a manner as not to disturb the smallest seed.

Next come the annuals the seeds of which require the aid of bottom-heat to assist germination. Many are the plans offered to the public for the purpose; but fermenting materials have done, and still do, for many, being the cheapest and, if properly managed, the most efficient. A simple plan is to make a strong box, of any convenient size, 18 in. deep; place in any corner of your greenhouse, or under a frame; fill to within a few inches of the top with fresh horse-manure made firm; on this stand your boxes or seed-pans. If a spare light is at liberty, on which to cover the top, so much the better, as it keeps confined the moisture arising, which assists in germinating the seeds. The most difficult seeds can be started in this rude structure—Acacia, Amarantus, Begonia, Gloxinia, Zinnia, Thunbergia, Celosia, Cyclamen, Primula, Cineraria, Calceolaria, and many others; or for the starting of bulbs of Begonias, Gloxinias, Caladiums, and Achimenes, this structure will do, and, if properly made at first, will retain heat sufficiently long to start a batch of either. J. S.

Show Pelargoniums in April.—These must now be kept fairly moist at the roots, or they will lose their lowermost leaves, leaving naked stems to view, and once lost they are never regained. The most robust of the plants, having a stocky growth, should be allowed to grow on for flowering early; those of taller growth, and having the appearance of becoming drawn, should be stopped and induced to break again. They will soon do this, and if they flower later they yet yield a greater amount of bloom. This is an important month with the Pelargonium. The plants should be near the glass, but in an airy position, at the same time not subject to cold draughts of air. This is a point of importance, and respecting which the growers of Pelargoniums for market are very particular. Fumigation must be particularly attended to, for when the days are bright and sunny aphides will make their appearance, and closely infest the points of the branches, and they need to be kept under. Watering, too, at this season requires more than ordinanry care and judgment. Enough is required to merely moisten the balls of earth about the roots and keep the foliage green and fresh, but no more. A superabundance of water in dull, sunless cold weather leads to material harm. When the sun is warm and the atmosphere drying, a syringing overhead will be found of great value. Any re-potting required should be done at once, but a large shift should not be given just now; a plant requires the next largest-sized pot only so that the roots may speedily reach the sides. By tying out the side shoots, so as to give space in the middle, the plants can be trained into even shape, and the foundation of good specimens laid. The more delicate fancy varieties—the "ladies' Pelargoniums," as they have been termed—require similar treatment, but much care in watering; and they should have the warmest part of the house in which they are growing.—D.

Culture of Balsams.—These plants are exceedingly useful during autumn, both for conservatory and sitting-room decoration. They may be easily grown into specimens 18 in. to 20 in. high and 3 ft. in circumference; or, with a little extra care and a suitable place in which to grow them, they may be had 3 ft. high and as many through. I have grown them many years ago 4 ft., and occasionally 4½ ft. in diameter. Balsams have naturally a tendency to run into many varieties, the seed of one plant scarcely ever producing two alike. The double Camellia-flowered varieties are those which are most esteemed, their blossoms sometimes rivalling in beauty those of a finely-striped or flaked Carnation. In order to secure successions of bloom, seeds should be sown at two or three different times between the middle of March and the end of April. As the Balsam is of a vigorous habit, it is not important what kind of soil is used, provided it is of a light nature and tolerably rich. When the seeds are sown, the pots containing them should be plunged in a mild hotbed, and in a few days the young seedlings will make their appearance. As soon as they are sufficiently large enough to handle, they must be potted into 3-in. pots in soil of the same temperature as that from which they have been taken. They should be potted as deeply as possible without burying the lower leaves. At this period of their growth the best position for them, when it can be afforded, is a small hotbed, where they can receive the

Carnation Striped Balsam.

treatment necessary to ensure a healthy growth. Great care must be taken to keep the plants as near the glass as possible, or they will soon grow up lanky and weak. When they have taken hold of the new soil, they should have a little air given on all favourable occasions. This is essential, in order to ensure a stubby robust growth. When the pots have become filled with roots (but not pot-bound), they must be shifted into pots a size larger, an operation which must be repeated till they are potted into the size in which they are intended to bloom. Many are satisfied to bloom their Balsams in 7-in. or 8-in. pots, and if they are healthy, useful plants may be grown in that size; but to have fine specimens, 3ft. or 4ft. in diameter, fit for exhibition, they must be grown in 12-in. or 13-in. pots. As soon as the lower shoots can be got hold of, they must be tied or pegged down, and every fresh tier of shoots must be dealt with in the same manner. If they can be kept in pits near the glass, with plenty of air, and all the flower-buds picked off as they appear, till they are required to bloom, they will grow like Willows; and when the roots have thoroughly permeated the soil they will stand any amount of manure-water. When I have wished to have large specimens, I have given manure-water at every other watering, increasing it in strength as the plants increased in growth. Balsams treated in this way, and grown to the height of 3 ft. or 3½ ft., and from 3 ft. to 4 ft. in diameter, with side branches from top to bottom, all covered with beautiful Carnation-like flowers.—R.

Carnation Flaked Balsam.

Rhodanthes.—The commonly called Everlasting are among the prettiest and easiest grown greenhouse or window plant for summer and autumn. They are extensively cultivated for markets, where they usually find a ready sale. The seed is sown in successive batches in shallow wooden boxes. These are placed in gentle heat until the young plants make their appearance, when they are immediately removed to a lighter and cooler atmosphere, and, as they advance in growth, air is admitted freely to them on every favourable opportunity. When large enough to handle they are pricked off into 5 in. or 6-in. pots, putting from five to seven plants in each. They are then placed in light, airy positions in the houses or frames, where they remain until they come into flower. Sowing usually commences early in February, and continues until the end of April or beginning of May; and from this latter period onward through the summer a succession of bushy, well-flowered plants is maintained. The varieties grown are R. Manglesi and R. maculata and alba. Rhodanthes may also be grown in the open ground in fine rich soil. The seed should be sown at the end of April.

ANSWERS TO QUERIES.

1712.—**Artificial Manure.**—There is no better general artificial manure than Peruvian guano, if it is pure; but it is difficult to obtain it so. With stiff soils absolutely rotten horse manure is not so desirable as the working into it of plenty of long manure fresh from the stable, as the straw supplies fibre to the soil, and even in this respect alone is most valuable. Then phosphates, especially in the form of wood ashes and crushed bones, are good; and phosphates are largely found in phospho-guano. A very superior general manure is Clay's fertiliser, and seems to possess all the ingredients needful for plants. The manure sold by the Amies' Company also has a wide reputation; and the Potato manure sold by Messrs. Hill & Co., of Deptford, is a superior Potato fertiliser.—N.

1710.—**Worms on Lawns.**—Corrosive sublimate (Perchloride of mercury) is soluble in cold water in the proportion of 1 in 16; its specific gravity being five times greater than that of water, the quantity named in the question will require 1 pint of water for its solution, which would be accelerated and rendered more permanent by the addition of a small quantity of sal-ammoniac. On account of its rapid change of state upon coming in contact with organic substances, by which it loses the equivalents of chlorine and becomes converted into chloride of mercury (calomel), I should think its utility for the purpose named questionable. For a trial, I should suggest that you use 1¼ oz., dissolved in three or four gallons of water.—F. W. P.

1606.—**Propagating Hyacinths.**—This can be done by amateurs by keeping the offsets which come off the parent-bulbs of Hyacinths, Tulips, &c., from time to time. These may be planted in autumn in a separate bed of light, sandy soil, and in two or three years or more, according to size, such offsets will become large enough to be planted out like imported bulbs. Or seed of Hyacinths may be collected when the seed-vessels wither and begin to split, and sown out-of-doors, under more or less shelter, in soil enriched with decayed leaf-mould, keeping the bed free from weeds and decaying leaves; but under this plan the bulbs will not be large enough to bloom for four or five years.—C. L. J.

1713.—**Cyclamens, Cinerarias, and Primulas from Seed.**—Cyclamen seed, as a rule, is sown in July or August, or as soon as well matured; grown in warmth, pricked out thinly into other pots, and kept growing on until large enough to be shifted into small single pots, and still kept in gentle heat, that the growth may be continuous and without check. If seed be sown now, it should be placed in a gentle bottom-heat and the plants kept growing; but it is doubtful if such seedlings could be induced to bloom next winter. Chinese Primrose seed may be sown at once in a shallow pan in a gentle warmth; and when seedlings are large enough, prick out into other pans,

and finally pot up singly, keeping in a cool frame all the summer. Cineraria seed may be sown about the middle of June without heat, as the temperature is then warm enough. Use shallow pans here also, and in all cases the soil fine and sandy. Cinerarias should be kept in a cold frame until winter compels their being put into the greenhouse.—D.

1725.—**Cats in Gardens.**—I have found that some galvanised-iron netting, laid flat on the top of the wall, so as to project beyond on both sides, to have been of great benefit in keeping off cats. If there be any particular spot in the garden for which they have a weakness, it is an excellent plan to procure a packet of good strong pins, and, cutting off the heads, insert them into some sticks of firewood, pushing them into the mould, leaving only the points projecting. The first application of one of these points to the sole of the foot of one of these domestic tigers, when with its cleanly habits it commences to dig up a bed of Geraniums, is remarkable; and the feline tribe, being gifted by Nature with a most retentive memory, do not often require a second, but, with that species of freemasonry which exists among them, you will soon find your garden possesses an evil reputation, and as a place to be avoided. Some people may say this is cruel; but is it worse than crushing under foot the peaceful slug, or drowning the apathetic aphis?—LEWIS W.

1612.—**Propagating Virginian Creepers.**—Cuttings of well-ripened wood should be taken during September, or not much later, to be set pretty deep in sandy soil in a sheltered situation. Layers may also be taken from the parent plant from July onwards. By these methods some well-rooted plants could be obtained, which would grow strongly the following season. Meanwhile a screen might cheaply be effected by planting a few quick-growing climbers, such as Nasturtiums of sorts, Tropæolum canariense, or Convolvulus major. As to foliage plants for a border, 8 in. appeared rather a difficult height. Possibly the following might be found suitable:—Pyrethrum Golden Feather, Mrs. Pollock Geranium, bronze tricolor; Centaurea Ragusina, silvery grey; Arabis of sorts, variegated gold or silver.—C. L. J.

1735.—**Flowers for Bees.**—The few flowers grown in a garden would not be of much assistance to the bees; what is of more importance is that there should be plenty of field flowers, as Beans, Tares, White Clover, Sanfoin, Charlock, and most kinds of weeds; also the blooms of Lime and fruit trees. The bees will gather honey near their hives if they cannot find better elsewhere. What is needed is a constant succession of bloom.—E. W.

1732.—**Plants for a Shady Landing.**—India-rubber plants, Oleanders, strong-growing Ferns, Fuchsias, Scarlet Pelargoniums, half-hardy Dracænas, Camellias, Cinerarias, Calceolarias, Balsams, and Chrysanthemums might all do on a large airy landing, but some would have to be grown specially for the purpose first. Few plants would thrive there for any lengthened period, as there would not be sufficient light. The best perennial creepers for such a position would be found in varieties of the spring-blooming Clematis, as these should bloom early in the summer in the sunshine, but bloom later if in the shade. Of annuals, the Canary creeper, the Lophospermum scandens, and the Scyphanthus elegans will do very well.—A.

1726.—**Cucumbers in Frames.**—If a hotbed intended for the growth of Cucumbers has been properly made, and the heat is gently rising, good strong plants should be got, either by begging or purchase, and be planted out at once, care being taken to put a thin sod of turf under the roots to prevent the heat rising and burning the young tender roots. The soil should be in the form of a hill in the centre, and about 3 in. deep at the sides being added to as the plants grow and the roots show on the surface, until it is 6 in. in depth all over the bed. A little steam will do no harm, but too much may soon kill the plants. To avoid this the lights should at the first be kept tilted about ½ in. at the top to allow superfluous steam to escape. To sow seed when the bed is ready would be to allow all the energies of the bed to be used simply to raise plants instead of growing them. Telegraph, Duke of Edinburgh, Model Green Gem, Blue Gown, and Tender and True are all good frame kinds.—D.

1729.—**Cucumbers in Pits.**—A Cucumber pit differs from a frame in this respect—that a pit is composed of brickwork, and a frame is of wood, and movable. With a pit, the well-prepared stable-manure is thrown into the pit, carefully built into the interior, and gently trodden to settle it down; then the needful soil is placed on the surface, raised like a little hill in the centre, but thinner around the sides; and when the raw steam has passed off, the plants are planted into the centre of the hills, and fresh soil is added as the young roots show through the soil. The manure should be well prepared by frequent turnings and waterings until it is equally heated; and after it has been placed in the pit, a little ventilation should be given behind. The plants may be put in about the third or fourth day, and be lightly shaded on hot sunny days. A good soaking of tepid water should be given at least once a week after the steam has abated. If the brick pit be built with open walls, or has pigeon-holes round the sides, some thick linings of manure

An Everlasting Flower (Rhodanthe Manglesi).

may be built up round it, and the heat will pass into the frame, and aid to prolong the inside warmth.—A.

1751.—**Mice in Gardens.**—You must catch them. Get half-a-dozen of the cheap mouse-traps, single ones, and bait with toasted cheese rind, or toasted bacon rind, and put them down at dusk by the Peas. The traps are about two-pence each, and have a door which is closed with a circular wire spring. You will catch all the mice in a few nights, but you must not kill the mice in the traps.—MAJOR.

1714.—**Worms in Fern-cases.**—Lime-water—made by placing a double handful of fresh, hot lime into a gallon of water, stirring it well, and allowing it to stand for a few hours before using—makes a solution that is usually deadly to worms and not injurious to plants. The water need not be sprinkled over the foliage. Allow the soil to get rather dry first, then give a watering in the evening.

1735.—**Plants for Bees.**—Mignonette is without doubt a first-rate honey-flower, as, indeed, are nearly all odorous flowers. As a rule, bees, when leaving the hive, ascend and go a considerable distance for food; but some may feed near home. Still, the Mignonette, if sown several yards from the hive, would no doubt be more attractive than if sown close by. If other bees are feeding on your flowers, you have the satisfaction of knowing that your bees are elsewhere repaying the compliment.—D.

1720.—**Growing the Potato Onion.**—The Potato or underground Onion should be planted in the late autumn, say in October or November, in sheltered places, or at once where not so planted already. The beds should be about 4 ft. wide, and the sets or bulbs planted, or rather dibbled in, about 8 in. apart each way, leaving the top of the bulb level with the soil. Have the soil well worked and manured, keep well hoed during the summer, and lift the crop as soon as ripe early in September.—A. D.

1721.—**Culture of Lilium longiflorum.**—Lilium longiflorum is one of the easiest of all this family to grow, but the bulbs should be lifted and stored in sand during the winter, as slugs, wireworm, and other ground vermin will feed on them. In pots, single bulbs should be planted in sizes of 6 in., and in good rich soil, kept fairly cool and shady in hot weather. It will do grandly in beds planted out in the spring, blooming profusely in August. Where other kinds thrive longiflorum should do well.—D.

1561.—**Steam for Forcing Frame.**—If "V" will get some Portland cement, mix it well into a paste, take a trowel and cover the whole of inside of frame, taking care to fill up all the nicks, he will then have no further trouble with the steam in frame. Before commencing the tank must be cold, and give time for cement to set before lighting the lamp again.—A. E. S.

1738.—**Annuals and Biennials, &c.**—Of annuals that are the better for transplanting—chiefly because, being tender, they cannot be sown with safety out-of-doors—are Asters, Marigolds, Balsams, Stocks, Zinnias, and Phlox Drummondi. Of these that can be sown in the open ground are Helichrysums, Larkspurs, Clarkias, Candytuft, Sweet Peas, Mignonette, Indian Pinks, Viscaria, Chrysanthemums, Malope grandiflora, Godetias, Eschscholtzia, and numerous others. Of biennials sown now to bloom in autumn, the best are the Antirrhinum, Corn Cockle, and Pentstemon, but few others may do so. Of perennials, some Delphiniums, common Carnations, and Myosotis semperflorens may bloom in the autumn; but perennials that will flower the first year are indeed few.

1724.—**Smooth *versus* Prickly Cucumbers.**—There is a certain prejudice in the market in favour of spiny or prickly Cucumbers over smooth ones, but the difference in flavour is very doubtful. Both Telegraph and Duke of Edinburgh are free and good bearers, and do well in a frame without peat; so also will Blue Gown, a prickly kind, and Green Gem, a smooth one.—D.

1723.—**Sowing Malope grandiflora.**—Malope grandiflora is a fine, showy, hardy annual, that may be sown in the open ground with safety at any time from the first of April, either in little patches or in shallow drills. Also seed may be sown in pans and raised under glass in a cold frame or greenhouse; and when the seedlings are 2 in. high the pans should be stood in the open air to harden off before planting out.—A.

1748.—**Soil for Potting.**—The best advice is not to waste time and patience over what is so valueless, but to abandon it to its natural uses, and get some suitable loam, which, mixed with sand and leaf-soil, will make really good potting soil. The great need in any soil employed in potting is to have in its composition fibre which should be natural; but probably no artificial fibre will excel Cocoa fibre refuse, which could be added to stiff loam at the rate of one-third. Leaf-soil also makes a good addition; but it soon decays, and leaves the soil in the pot hollow and open. The frequent watering soon produces congestion in the soil, and tenacious soils gets as hard as brick, preventing the roots from working, presently killing the plants.

1587.—**Mottoes for Sun-dials.**—*Amicis quælibet hora:* Any hour you like for friends. *Docet umbra:* The shadow teaches. *Allez vous:* Pass on. *Horas non numero nisi serenas:* I reckon only the bright hours. *J'avance:* I go forward. *Lux, umbra Dei:* Light is the shadow of God.

1731.—**Sweet-scented Plants for Greenhouses.**—The following sweet-scented plants I have grown in a house such as your correspondent describes with a fair amount of success:—Daphne odoratus, D. cneorum, Acacia armata, Nerium, Oleander, Myrtle, Lemon-scented Verbena, and Heliotrope, which latter will bloom nine months in the year in such a structure as that mentioned. Dwarf standard Roses also will do well. In bulbs, he would succeed with Hyacinth, Narcissus, Jonquil, Lily of the Valley, and Tuberose; and also with Lilium auratum, L. lancifolium, L. rubrum, and other Japanese Lilies, which are all powerfully scented.—LEWIS W.

1727.—**Cats in Gardens.**—Bird-lime will not keep cats out of a garden. If the garden is walled all round a good thing to do would be to cover the top of the wall with broken glass set in mortar.—AJAX.

1722.—**Plants for Unheated Greenhouse.**—A space underneath the close stage of a greenhouse may be utilised to grow Mushrooms, or to blanch Seakale or Rhubarb; or it may be used as a fowl-house, if shut off

from the inside of the greenhouse, and an outlet is made outside. If used for such a purpose of course the stage must be perfectly watertight. At this time of the year nearly all kinds of greenhouse plants will do in an unheated house. Genistas, Deutzias, Dielytras, Cinerarias, Primulas, Calceolarias, show and zonal Pelargoniums, Fuchsias, Balsams, Celosias, Globe Amaranthus, Phlox Drummondi, Lobelias, &c., may be raised from seed. Many of the showy Begonias will also do well, and help to make the house very gay all the summer.—A.

1728.—**Forcing Tulips.**—In large market-growing establishments, where the Van Thol Tulips are forced in large quantities, it is the usual rule to plant the bulbs thickly into boxes, and place them in heat near the glass. Just before they come into flower the plants are carefully lifted out and blocked in half-dozens into 5-in. pots, and each flower, expanding at the same time are thus sent to market. The Tulip bulbs mentioned in the question must have been of bad quality, and not sufficiently matured to carry flowers.—A.

1516.—**The Best Way to Clear a Lawn from Coltsfoot** is by carefully pricking out every flower. As the Coltsfoot is an annual, this prevents any distribution of seed, and consequently the plant is soon got rid of. The flowers come up in March and April before any leaves appear, and are therefore easily seen and gathered. I know this is the only effectual plan to eradicate the pest.—GEO. H. L. RICHARDS. [The Coltsfoot is not an annual. It increases yearly by means of its underground stems or roots, which spread rapidly. Picking the flowers off might do some good, but it would certainly not kill the Coltsfoot.—ED.]

1741.—**Last Year's Seeds.**—I sowed in an unheated greenhouse seeds of last year of Godetia, Dianthus laciniatus, and Mignonette, and they all came up.—C. D.

1733.—**American Blackberries.**—Plant in a row a foot apart, and train to stakes, or erect a wire trellis to train on. Three wires strained to stout stakes will do. The upper one should not be less than 5 ft. high.—E. H.

1725.—**Blood for Vines.**—I have seen it applied successfully at this season to late houses or open-air Vines, or it may be given any time during summer; but when given to Vines in active growth dilute it with water. It is not adapted for weak or sickly Vines, but is a powerful stimulant where the Vines are vigorous and are well provided with roots.—E.

1711.—**Pruning the Arbutus.**—Cut down the Arbutus next month to within 2 ft. of the ground. It will break again and make a good bush.—E. H.

1751.—**Mice in Garden.**—Use traps or poison. Dress the seeds with red lead, and place coal ashes over the crowns of bulbs. Also procure a kitten or two and train them up properly—that is, be kind to them and encourage them to live in the garden. I have a kitten that follows me through the houses, walks upon the stages among the pots, using as much care in placing its feet as I should do myself.—E.

1750.—**Leather Dust in the Garden.**—The waste from a shoe factory should be a valuable manure, and so also are the ashes. Both may be useful applied as a top-dressing to fruit trees, lightly forked in; also as a top-dressing to flower borders. The ashes will be useful for Potatoes and other root crops, especially Turnip, Carrot, and Onions.—H.

1707.—**Phalænopsis in a Stove.**—The Phalænopsis will do in a night temperature of 65° in winter. Two or three degrees less on cold nights will do no harm.—E. H.

1707.—**Phalænopsis in Stove.**—These will do well in a temperature of 60° in winter, other circumstances being favourable. P. Schilleriana will do with a few degrees less heat than P. amabilis; 70° to 10° in summer will do very well indeed. Phalænopsids are easily grown, but they require certain attention at the right time, and are rather particular as to the position in the house they occupy, preferring the shady to the sunny side. They ought also to be near the glass. Give water sparingly in winter, but the roots must never be quite dry. During the growing season plentiful supplies of tepid water are necessary.—J. D.

1582.—**White Chrysanthemums.**—Twelve white Chrysanthemums make a big hole in the varieties of that colour if for conservatory decoration. The following six are good and easily grown: Mrs. G. Rundle, Cassandra, White Globe, White Christine, Elaine (Japanese), and White Cedo Nulli (Pompone). If for cut blooms, the first four of these may be taken, and the following in addition: White Venus, Princess of Teck, Eve, Virgin Queen, Lady St. Clair, (sometimes called Empress of India), and Blonde Beauty. But the last four of these require rather high culture for a first attempt. Some of these varieties are tinged pink on the tip of the petals.—S. S.

1793.—**New Potatoes of 1879.**—*G. B. E.*—It is the rule to regard all new Potatoes offered for the first time in commerce either in the autumn of one year or in the spring of the succeeding year as being sent out in the second year, because that is the first season in which they can be grown. Thus any offered in the autumn or winter of 1878 are classed as sent out in 1879. The best kinds so offered are Woodstock Kidney and Avalanche, White Kidneys, Vicar of Laleham, (blue round), Triumph (red round), Beauty of Hebron (pale pink Kidney), and Early Purple (a purple oval or half Kidney). There may be one or two others not so well known, but all these are *bonâ fide* and distinct new kinds. Of White Rounds there are none known; as, curiously enough, of exhibition quality these are always in a considerable minority as compared with Kidneys, and even coloured Rounds. The past sending-out season has been singularly barren of new kinds, arising no doubt largely from the ravages of the disease of last summer. The best known are Pride of Ontario, an American kind, the tubers large, round, white and prettily tinted with red; Heather Bell, a Scotch raised sort, true Kidney shape, very handsomely mottled with purple; and Beauty of Kent, raised in Kent from the American Snowflake. This kind resembles the Early Rose in colour, but is round.—A. D.

1794.—**Liquid Manure for Plants.**—Which is the best liquid manure for pot Roses and general use.—FLINTMAN. [Drainings of the stable or manure heap, or sheep's manure put in a tub with a handful of salt, and a bag of soot suspended in the tub.]

1795.—**Chrysanthemum Cuttings.**—Shall I shade my cuttings now, or keep them in full sun?—A. H. I. [If well rooted they do not need shade.]

1796.—**Fuchsias Out-of-doors.**—Last autumn I bought some large Fuchsias, which had been in a greenhouse. Not having enough room in my greenhouse, can I expect to get good flowers if I put them out-of-doors in a week or so?—A. H. I. [Put them out-of-doors early in May, and they will bloom well.]

1797.—**Marechal Niel Rose.**—I am afraid that my tree is dead. The branches at the ends are turning black and dry, although it is green enough on the two principal stems. A Briar also out of the old stock is budding out; shall I cut that off?—A. H. I. [Prune back the dead shoots and rub off suckers from the stock.]

1798.—**Roman Hyacinths.**—Can these, now having ceased flowering, be made of any use for next season, and if so, how should they be dealt with?—DELTA. [Plant them out in good garden soil in a sunny position, and water freely in dry weather.]

1799.—**Spiræas Turning Black.**—I have a lot of Spiræas, fine robust plants with hundreds of heads of bloom, but as soon as they begin to break into bloom the necks go black and they drop off. I keep them in my greenhouse.—A. L. [We can assign no reason for the flowers turning black other than that the plants do not get sufficient water and air. They cannot well have too much water when opening their blossoms; and a little liquid manure would be a great help.]

1800.—**Stocks for Weeping Trees.**—I have obtained some common Birch stocks for working Betula alba pendula elegans upon. What height should I cut them for making standards for planting on a lawn? Ican make them up to 8 ft. Should they be grafted or budded, and when?—W. R. D. [8 ft. will not be too high for a good weeping tree. You may either bud or graft them as convenient. It should be done in autumn, but you might try budding at once.]

1801.—**Weeping Roses.**—I have never seen a weeping Rose except upon paper, and presume that they are either rare or unworthy of popularity. What height should the stocks be for planting on a lawn?—W. R. D. [Stocks 6 ft. to 8 ft. high. Instead of pruning back the shoots, simply thin them out, and train those left in a downward direction. There are not many Roses that weep naturally in the sense you mean, but nothing is more easy than to form a weeping Rose tree.]

1802.—**Dry Soil for Potatoes.**—Would light soil under which rag appears at a depth of 2 ft. be considered too dry for Potato growing? If so, how can it be remedied? Will watering benefit the crop? I am planting Earlies and Magnum Bonums.—PENSE A BIEN. [If you mulch the Potatoes with a few inches thick of half-rotten manure after they are earthed up, the soil will be wet enough.]

1803.—**Striking Cuttings.**—Can I strike Geranium cuttings now, and should I harden the plants before making the cuttings? [Geraniums will strike easy now in a warm house. If a little bottom-heat can be given all the better. The plants should not be hardened before the cuttings are taken.]

1804.—**Leaves of Spiræas turning Brown.**—I have some plants of Spiræa japonica in a greenhouse. How can I prevent the tips of the leaves from turning brown?—J. A. M. [Give the plants plenty of water, light, and air.]

1805.—**Cheap Pea Sticks.**—Not being able to procure Pea sticks, the best and most inexpensive substitute for Peas and Beans is asked by—S. N. [A few stout poles or stakes driven firmly into the ground, 5 ft. or 6 ft. apart on each side of the rows, will answer. These should be all of one height, which should be that of the Peas; some tar twine or other strong cord should then be tied to the end stake and passed along the line, making a turn on each stake within a few inches of the ground; and as growth progresses the next turn should be raised a little higher up, and so on until the plants have attained their full height. If the string or cord be applied at the right time, the tendrils of the Peas will clasp firmly round both stakes and strings, and will support the plants almost equal to Pea-sticks; some, indeed, think this plan best, as by it the plants are exposed to more light and air than they otherwise would be, and the pods are more easily picked without injuring the haulm.]

1806.—**Spiræa filipendula.**—I have some young plants which have started very well in a steady bottom-heat. Should they be kept in the hothouse?—H. M. E. [Gradually harden them off, and place them in a light, airy house or frame. This Spiræa is a hardy plant, and does not need either bottom or top heat.]

1807.—**Crocuses after Flowering.**—I have a number of Crocuses that I have grown in boxes and pots. How should they be treated after flowering?—ZERO. [Plant them out in the wildest parts of the garden or shrubbery.]

1808.—**Moss on Walks.**—What will prevent the growth of Moss on walks? My garden is a very old one, and this growth causes much trouble in the constant use of the hoe. [Good drainage is the only cure. Use plenty of salt in dry weather, if there are no live edgings to the walks.]

1809.—**Coal Ashes for Gardens.**—I have riddled and mixed coal ashes with horse manure for use in my kitchen garden. Is this a good manure, and am I right in using coal ashes at all?—F. [If the soil in the garden is stiff and clayey ashes will do good, but if light and loamy they are not needed.]

1810.—**Sand on Lawns.**—Does fine sand rolled into a tennis lawn help to harden the turf?—H. [A little sand would do good if put on when the ground was damp, and well rolled in; but too much should be avoided.]

1811.—**Brussels Sprouts.**—Will some one tell me how to grow these?—T. L. [Sow in beds in June; plant out when large enough in well-manured soil 2½ ft. apart.]

1812.—**Wire for Training Ferns on.**—May I use copper wire on which to train the climbing Fern (Lygodium scandens), or is there anything better?—T. S. [Copper wire will do, but a thin Willow or Hazel stick would be as good; so would strong twine or whip-cord.]

1813.—**Heat for Ferns.**—Do Maiden-hair Ferns (Adiantums) need a higher temperature than 50° to 55° at this season? I can give more if requisite.—J. S. [They would grow in the temperature named, but would do better in one 10° higher.]

1814.—**Saving Parsley Seed.**—How can I get seeds from Parsley, and when will they be fit to sow?—Loco. [Select good curled-leaved plants at once, and plant them in a sunny position in rich soil. They will ripen seed in autumn, which may be sown as soon as gathered, if necessary.]

1815.—**Heating Fernery.**—I have a glass enclosed Fernery which for some years I have endeavoured to heat during winter by means of gas, applied in various ways, but without success; my plants being destroyed by the chemical products of the gas.—K. [There are plenty of heating apparatus advertised in our columns weekly.]

1816.—**Sowing Peas for Succession.**—I have purchased the following collection of Peas, viz., William the First, First Crop, G. F. Wilson, Fillbasket, Laxton's Popular and Supreme. I have already sowed the first the first two kinds, and shall be glad to know when each of the other varieties ought to be put in in order to obtain a good succession. [Plant half of each sort at once, and the other half when they come above ground.]

1817.—**Clematis Flowering only at the Top.**—I have a Clematis Jackmani which has been planted out four years against a wall. It makes very strong growth, but all the blooms are at the top, although I train it from side to side. What can I do to distribute the blooms over the surface?—R. W. [Cut down one half the shoots to within 6 in. or so of the ground; you may then get growths from the bottom to flower on the lower part of the wall.]

1818.—**Propagating Laurels.**—When is the best time for striking these, and which is the best way to take them?—B. [Take off growing shoots 6 in. long in autumn with a little heel attached to them if possible. Place them firmly in the ground in a sheltered situation and in sandy soil.]

1819.—**Plants in Cucumber House.**—What flowers can be grown in a greenhouse which is used for Cucumber growing, the stage being shaded by the Cucumber leaves, and the heat kept at about 70°?—C. P. [Ferns and Mosses would do better than anything else in such a position.]

1820.—**Pyrethrums.**—What is the habit of these plants? I had a dozen last autumn, but lost half. What height do they grow, and are they suitable for the front line in a border (first line)?—P. [The flowering Pyrethrums form tufts of finely-cut foliage from about 6 in. high, but their flowers are borne on stems 9 in. to 12 in. in height. They would do for a front row provided you had no dwarf plants behind them. They require deep sandy soil.]

1821.—**Honeysuckles not Flowering.**—What is the reason of their non-flowering? They grew well last summer; clay soil. I have worked in a lot of manure and best road sweepings. Will this succeed in making them flower?—W. J. R. [Probably the wood does not ripen in the autumn. They want plenty of sun.]

1822.—**Tulips a Second Year.**—Will these succeed next spring if left in the ground, as is the custom with Narcissi and Crocuses?—W. [Yes; perfectly.]

1823.—**Breadfruit Potato.**—Is the American Breadfruit Potato red? and a Kidney or Round also the quality?—A CONSTANT READER. [A round, white Potato of good quality in some soils.]

1824.—**Watering Palms.**—Is it right to water Latania borbonica from the surface of the soil, or to pour it into the saucer, and let it suck up as it requires, throwing the surplus away?—C. F. H. [From the surface of course. Give it sufficient water at a time to thoroughly soak the whole of the soil. There should not be any water in the saucer. Always use water of the same temperature as that in which the plant is growing.]

1825.—**Cutting Branches of Araucarias.**—Would it hurt an Araucaria if its lowest tier of branches were sawn off? I cannot get the weeds removed, as even the second tier of branches are trailing on the ground.—ARAUCARIA IMBRICATA. [It would not hurt the plant much. Do not saw the branches off too close to the stem; and cut over the wounds with a sharp knife afterwards, and smear them over with clay. We should think, however, that by lifting up the branches with a long stick the weeds could be removed, without spoiling the tree.]

1826.—**Hyacinths Grown in Glasses.**—What is the best way of treating Hyacinths which have been grown and flowered in water with a view to their flowering in the garden next year?—RUS IN URBE. [Harden them off a little by placing them in a cool place, and then plant them out in a sunny position out-of-doors in good rich soil. Cut off all the flower-stems.]

1827.—**Propagating Variegated Thyme.**—How can variegated Thyme be propagated, and at what time of the year? Can it be left in its place out-of-doors all the winter without harm?—C. D. [It may be propagated now or in autumn by division of the roots or by cuttings

put in sandy soil under a hand-light. It is perfectly hardy.]

1828.—**How to Grow Mignonette.**—*Mark.*—Mignonette requires rich soil, a good mulching of manure, and plenty of water. If grown in pots, liquid manure is a great help to it when coming into bloom.

1829.—**Growing Cucumbers.**—*Old Subscriber.*—These may be grown without any artificial heat in a greenhouse during summer. Flowering plants will not grow well under them, but Ferns and Mosses might do fairly well.

1830.—**Winter-flowering Fuchsias.**—*Rector's Wife.*—Any kind of Fuchsia may be got to bloom in winter by proper treatment. In autumn prune back some of your plants, re-pot them, and place in a warm, moist temperature till they come into flower; then put them in the conservatory. Cuttings struck in May, June, and July will also flower in winter if the blooms are kept picked off and the shoots pinched weak till, say, November.

Horse-droppings as Manure.—*A. J. B.*—You cannot possibly have anything for mulching Roses or manuring a garden equal to horse-droppings, from which all the straw has been shaken.

Increasing Primulas.—*Beginner.*—Old plants are never so good as those raised from seed.]

Soil for Ferns.—*Beginner.*—Ferns do not need potting every year after they get large enough to occupy, say, 8-in. or 10-in. pots. The roots should never be trimmed nor injured in the least.

Striking Geraniums.—*Beginner.*—These would strike much easier in May and June than now. If you want them for bedding begin at once.

New Foliaged Plant.—*R. W. W.*—Send us a plant, that we may judge of its merits.

Todea superba.—*C. M. C.*—This requires a close, moist atmosphere. It will succeed best in a quiet unheated sunless house, under a glass shade or hand-light, or even without a shade.

Mulching Roses.—*Mark.*—Pruning should, of course, be done before Roses are mulched.

Brompton Stocks.—*F. A.*—These are hardy, and if they have been kept in a cool temperature during winter may be planted out at once.

The Way to Write Labels.—*W. H.*—Always begin at the top of the label and write towards the point.

H. Osborne.—We cannot make out what plant you refer to. Kindly write it plainly.

Wireworms in Soil.—*Gang Forward.*—Give the land a good dressing with salt if it is vacant. Well turn up the soil with a fork, and give another dressing in a week's time. It will then be ready for planting at the end of May. A dressing of quicklime would also be beneficial. Oil-cake sown on the land is a good thing; the wireworms feed on it and burst.

Annuals for Bouquets.—*W. T. B.*—The list of these given at p. 810 (Feb. 28) will suit your purpose well. They shou d all be sown by the end of April.

Eulalia japonica.—*F. S.*—Any of the large nurserymen will procure you plants of this Grass if they do not possess a stock, but probably they do now. The price varies with the size of the plants, but it is not considered an expensive one now it has become more common.

White Moss Trees.—*R. H. W.*—Do you mean Moss Roses?

Names of Plants.—*F. Sutton.*—Garrya elliptica. One of the best of hardy evergreen shrubs.——*W. C.*—Some kind of Lichen, which can only be named by a specialist.——*M. F.*—Boronia megastigma.——*Cumnock.*—Kerria japonica, sometimes called Corchorus japonicus.——*S. B. C.*—The white-leaved plant is the variegated Jacob's Ladder (Polemonium cœruleum), belonging to the order Polemoniaceæ; the white-flowered plant is a double-flowered Plum (Prunus sinensis).——*R. B.*—1, Arabis albida; 2, Daphne Mezereum; 3, Ribes sanguineum.

1831.—**Treatment of Boronias.**—What is the proper treatment for the sweet-scented Boronia after flowering?—A. K.

1832.—**Glazing without Putty.**—I have recently seen some new glass structures with the sash-bars placed horizontally, and apparently thick panes of glass laid on them edge to edge. It looks very neat, but how about its utility? I am about to put up a Vinery and conservatory about 60 ft. by 24 ft., with a division half-way, and would like to have the opinion of some one who has had actual experience of this kind of house. Is it as useful as the old sash and putty system (with sashes the other way)? The new system certainly looks good and strong. The panes appear to be kept in place with sheet lead doubled back over the lower rim. Is the system to be recommended as water-tight, weather-proof, &c.?—E. N.

1833.—**Hotbed Frames.**—I should be obliged if "G. A." (No. 1518, March 6) would tell me what kind of lamp he had the benzoline in. I have tried it, and every lamp I put under the frame is destroyed. The cement and the solder in three different kinds of lamps has come undone, and the top of the lamp fallen off; and in consequence the oil got on fire. Should there be a chimney to the lamp? What distance is the lamp from the bottom of the boiler? If "G. A." will give me all information on the subject I shall be glad.—J. M. M.

1834.—**Culture of Double Geraniums.**—Will some one give me a few directions as to the culture of double Geraniums, as I find it very difficult to grow them successfully?—ARTHUR.

1835.—**Creepers for Tops of Walls.**—I have a dwarf wall at the edge of my lawn; there is a border of flowers and shrubs level with top of wall; the coping is always unsightly. What are the best hardy plants or creepers to cover it quickly?—C. P.

1836.—**Treatment of Watsonias.**—How are these best grown, and what colours do they possess? I have planted mine with Gladioli; is this likely to produce a good effect?—W. J. R.

1837.—**Hotbed Frames.**—Will "G. A." kindly give a little more explanation of his description of his home-made frame in the No. published 6th of March. He says there that he knocked the top and bottom off the case, and fixed the pan to the bottom. Does he fix the bottom to the case again, and, if so, what is the good of knocking it off? Or, if not, how does he manage with the Cocoa-nut fibre, in keeping it in the case, and from the lamp? Why does he use the fibre. And in standing the box on two flower pots I suppose he means the boiler pan is on the pots, as it is as large as the case. And where does he fix the pipe for filling the pan?—C. G.

1838.—**Ants on Lawns.**—Will any reader tell me how to get rid of nests of small red ants, which seem to come up annually on my lawn? I want, if possible, to get rid of them without being cruel to the industrious little fellows, or destroying the Grass.—SPARKE EVANS.

1839.—**Garden Farms in Cornwall.**—Could any one give me any information as to the average size of the garden farms in Cornwall (where Broccoli, &c., are grown), number of men employed, and rent per acre?—G. B.

1840.—**Climbing Roses in Pots.**—What are the best varieties of climbing Roses to grow in pots for the greenhouse? Also best compost to grow them in?—AN AMATEUR.

1841.—**How to Make the Most of a Garden.**—I have about half an acre of ground, which I wish to turn to some useful purpose. It is open to the south-west, but enclosed on all other sides by tall trees; what vegetables can I grow to most advantage?—E. B., *York.*

1842.—**Treatment of Azalea Cuttings.**—In the early part of last summer, I put in a few cuttings of choice Azaleas. They appear to be growing a little, and I shall be glad of information as to proper time to shift them from the cutting pan, and also their after treatment.—H. J. W.

1843.—**Plants for a Frame.**—I have a lean-to frame which faces the south, but is shaded by the adjoining buildings the greater part of the day. It is about 5 ft. by 3 ft.; and about 4½ ft. high at the back and 1 ft. in front. I should like to know the best use I could put this to. I have a greenhouse, and thought the frame might do for sowing seeds in, but fear it is not warm enough.—BEGINNER.

1844.—**Making a Kiln.**—Can any one inform me the simplest way of making a kiln to burn lime-stones picked off the fields, to be used as a manure for bog land, using turf as fuel?—A CONSTANT READER.

1845.—**Guano.**—Can any of your readers recommend from experience what quantity of guano to a gallon of water should be used for Ferns and other choice plants?—L. H.

1846.—**Climbers for Greenhouse Wall.**—Would some reader tell me what plants would do best for this purpose? The wall is rather damp, and has a flue running along its base.—G. W.

1847.—**Sea Sand for Plants.**—Has any reader tried sea sand for striking cuttings in? If so, would they kindly report results, as it would, in many localities, be easier to obtain than silver sand, and less expensive?—G. E.

1848.—**Striking Ferns, Oleanders, and Myrtles.**—I have endeavoured to strike some cuttings of Oleanders and Ficus elastica in a frame heated upon a similar principle to that advocated in GARDENING for hotbed frames (No. 1518). At the end of twenty-three days I turned out the pots to examine the bulbs, with the result that ten cuttings have rotted, and the eleventh remaining one has not shot a fibre, though still sound. Can any one suggest the cause, or direct me to success for raising these, and also Myrtles?—FILICES.

1849.—**Bronze and Golden-leaved Pelargoniums.**—Which is the best variety of bronze Pelargonium? also a good golden self, of spreading, low habit, for bedding?—GANG FORWARD.

1850.—**Wireworm in Beds.**—How can I get rid of wireworms in beds?—GANG FORWARD.

1851.—**Pot Roses in Cold Greenhouses.**—Will some experienced reader of GARDENING kindly instruct me on the culture of Roses in pots in an unheated greenhouse?—F. B. T.

1852.—**Carnations and Hares and Rabbits.**—I have about three dozen good Carnations, which are every winter bitten down by hares and rabbits. How can I protect them?—M. L. B.

1853.—**Drying off Orchids.**—Having just begun to attempt growing a few cool greenhouse Orchids, I have bought, amongst other things, a good healthy plant of Oncidium tigrinum. It is not mentioned in Britten & Gower's "Orchids for Amateurs," and I should be glad to learn when it flowers, and, at what time, if at all, it ought to be dried off. The books I have been able to meet with on this subject are, as usual, not elementary enough; and I cannot find anywhere a plain rule to indicate at what time to begin drying off those Orchids which require it; or any rule at all by which to know when the dry treatment should be stopped.—C. V. A.

1854.—**Plants not Injured by Gas.**—I have a large room with glass roof, heated by steam pipes, in which at night I burn gas. What plants will best thrive in such a room?—B. GODDARD.

1855.—**Cultivation of Freesias.**—I should be glad to learn what soil and treatment are suitable for Freesia Leichtliniana, and F. refracta alba. I planted the bulbs in pots some time ago, and they are just beginning to come up.—C. V. A.

1856.—**Lilium Giganteum from Seed.**—I have had some seeds of Lilium giganteum; when should they sown, in what sort of mould and what heat, and what should the after treatment be? I should also be glad to know within what time they may be expected to germinate.—SOUTH HILL.

1857.—**Street Sweepings for Mushrooms.**—I am given to understand that this is good stuff to grow Mushrooms in; will some one kindly detail their experience of it?—W. G.

1858.—**Plants for Fowls.**—I am aware that the sunflower yields seeds which are relished by fowls. Can anyone suggest any other plant which will yield the same results?—F. A.

1859.—**Leather Shavings as Manure.**—Can I use leather parings as manure, and how must I apply them?—BI.

1860.—**Woodlice in Melon Frames and in Mushroom Houses.**—Will any one tell me the best way to get rid of these pests?—E. O.

1861.—**Propagating Hollies and Laurels.**—I want to increase my stock of Hollies and Laurels, both plain-leaved and variegated; would any one inform me the best way and time to do so?—J. D. H. K.

HOME PETS.

Canaries Breeding.—"Lancashire" asks, a question the answer to which would easily fill a whole number of GARDENING, but I will endeavour to satisfy him in the more important points. The canaries when they are noticed to pair (that is, when the cock feeds the hen) should be fed on eggs (hard boiled), which should be pressed through a piece of perforated zinc or a hair sieve. The yolk only should be given. A supply of green food should also be given. Remember that egg is binding and green food scouring, so be careful to avoid extremes either way. Be careful to have a healthy pair of birds, and if either should exhibit any signs of indisposition, do not fail to administer a dose of Finchine, which should always be kept by all fanciers either of British or foreign cage birds; it is invaluable. The materials for nesting should consist of any soft material, but I prefer white wadding, which can be had for about fourpence per yard. The hen sits thirteen days; the young ones open their eyes when about a week old, and, if strong and healthy, are able to leave the nest at about three weeks old. Give plenty of food as before mentioned, but do not let the egg or green food get sour, as this will kill the young ones. Seeds: Canary, Hemp, Rape, Millet, and Maw.—A. D'A.

Canary with Rough Plumage.—The feathers of my bird are very rough, the wings droop, and it has not sung for more than a week, although not moulting. It has grown too fat, eats ravenously, and is very restless. I feed it on canary seed, and give it hemp once a week. The bird is two years old, and has always been healthy, and sung well till lately. Shall be very glad if any one can tell me what ails it, or what is the proper thing to give it.—TILLY SLOWBOY.

Bird Lice.—Do canaries suffer from these insects, and is Keating's insect powder considered a good thing to shake into their feathers and about the cage?—TILLY SLOWBOY.

Feathers Coming off Canaries.—Will some one say from what cause the feathers of canaries come off in patches, leaving bald places, and what can be done to remedy it?—J. G.

Parrots Losing their Feathers.—My parrot, which has been suffering from moples and losing its feathers, and been in general ill-health, has been much benefited by dried chillies; about six a day. I have so frequently seen enquiries on this subject in GARDENING that I thought some reader might be glad to know of this remedy.—M. J. S.

THE HOUSEHOLD.

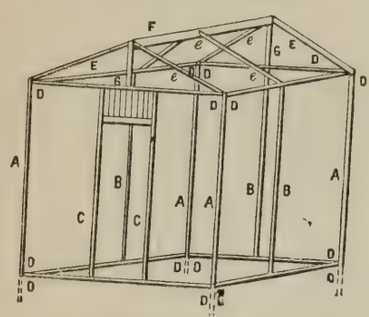
Cooking Cabbage.—Permit me to dissent altogether from the writer in last week's GARDENING, who advocates steaming Cabbage. The cooking of this vegetable may seem scarcely worthy of attention by some persons, but it really is an important matter; and it is generally cooked badly in London restaurants. How anybody who has thought of the matter can suppose that steaming would suit Cabbage is beyond me altogether, inasmuch as the extraction of some of the not very pleasant component parts of the Cabbage by abundance of water is essential to its proper cooking. I have seen steamed Cabbage, but I should not like to see it again.—B.

STUFFED CABBAGE.—For this dish we must choose small or medium-sized Cabbages. Take off their outer leaves, cut them in two, take out the heart and blanch them. Take sufficient sausage meat, thicken it with yolk of egg beaten up and beef marrow. Fill the cavity of the Cabbages and as many of the interstices between the leaves as possible with the forcemeat, tying up the whole with string. Place them in a stewpan with saveloy or Frankfort sausage with Onions, Carrots, a Clove or two, mace, pepper, and salt to taste. Pour stock over the whole, cover the Cabbages with good slices of fat bacon, and allow the whole to simmer for half-an-hour or longer according to their size. When done take off the bacon, undo the thread, and serve in their own liquor.

POULTRY.

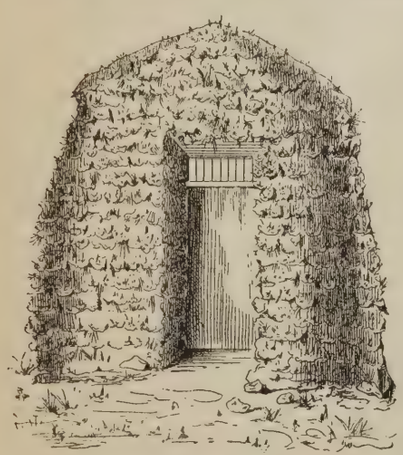
A THIEF-PROOF FOWL HOUSE.

STRICTLY speaking, it is very difficult to build a thief-proof house of any description, but with fowl-houses it is different. Where poultry keepers lose their stock it is generally because they take little, if any, care to secure their birds against



Section of Fowl House.

the visits of tramps and persons of that class, who pay no respect to the difference between *meum* and *tuum*. The fowl stealer will not run any great risk, for if caught and any previous conviction is proved against him his punishment is severe; so, unless he can get the birds easily and without much trouble, he will try his luck elsewhere. I have just completed a fowl-house which, I think, will answer very well. Here is my *modus operandi*: I cut four pieces of quartering, 7 ft. long, 4 in. by 3 in., to form the corner post (A), which I bury in the ground 1 ft. having previously tarred or charred the end to prevent rot. Next cut five pieces 6 ft. long, 3 in. by 2 in.—three for intermediate supports (B) and two for door-posts (C), eight pieces 6 ft., 3 in. by 2 in., to mortice into corner posts, top and bottom (D); the rafters for roof (E) are of 1½ in. by 2½ in. stuff, keeping narrow side up. The length will depend



Fowl House completed.

upon the pitch given to the roof, 18 in. or even 15 in. in 3 ft. will be sufficient to ensure the wet running off. The top plate (F) is 3½ in. by 2in. but must be placed on edge the same as the rafters, as much greater strength will be given to the roof this way; the supports (G) will keep the top plate steady. Now proceed to cover all round, and roof in with feather-edged boards, commencing at the bottom and finishing at the top; the same with the roof, taking care to bring the first feather-edged board over the sides a little, to form an eave, which will prevent the wet getting in should the outer roof become at all damaged at any time. When it is completed, two holes must be cut, one in each side of the roof, to form windows to admit the light; they need only be 4 in. wide by 12 in. long, and cut down the slope the same way as the rafters run. The door I make in three thicknesses of 1 in. each; in the two outside ones the boards are placed perpendicularly, and the inside or middle one horizontally; these are then screwed together and fitted into the doorway. The aperture above the door can either be of bars, as in the plan, or an iron grating; either will do for ventilation. The house is now complete as far as woodwork goes; for to enter into a description of hatching-boxes, nests, perches, &c., would occupy too much space here. This house stands upon a new piece of ground I have for gardening purposes, from which I have cut all the turf, and stacked it all round the house and over the roof, commencing 3 ft. wide at the bottom, gradually decreasing to about 18 in. at the top. In making the wall, when I have built the turves four or five high I drive some pegs pointed at one end, 12 in. long and 1 in. square, through the turves into the ground, each peg 18 in. apart only, every way. When five more turves higher are built up, I peg them on to the last row, and so on to the top; in this manner the wall will be one solid piece, and, if properly built, cannot be pulled down without the aid of pickaxe and shovel, and then only with considerable labour. The roof is covered in the same way (leaving an opening for the roof windows) to the depth of 12 in. to 15 in.; and after beating with a flat piece of wood to make it level and firm, I run some heated coal-tar mixed with fine sand over it to make it waterproof. To prevent the wet getting in at the roof windows, place a piece of glass in a frame over each opening, and by exercising a little ingenuity these windows may be made to open and ventilate the house.

This description of structure will answer two purposes—that of keeping the birds warm in the winter (a most important consideration where a supply of eggs is desired in severe weather), and providing them with a cool roosting-place in the height of summer.

H. BALL.

Gapes in Chickens.—Shut the chickens up in a coop; dust in some slaked lime (which has got cold, but not old), taking care not to let it touch the birds' eyes; keep the coop closely covered for a few minutes.—J. B. T.

Pullets not Laying.—I have not the slightest doubt that if "W. H. S." feeds the pullets with warm food in the morning, and gives them corn before going to roost, that they will lay. Four or five meals a day is too much.—C. W. A.

Fowls Pecking each other.—Can any reader suggest the cause of my fowls disagreeing. I had cross-bred Brahma pullets and a Dorking cock. As they disagreed so, I sold all but two, and bought some cross-bred Hamburgs and a Spanish cross-bred Hamburg cock. These I find disagree the same as the others. I feed them liberally, and they have a good run and are well sheltered and kept quite clean.—A GARDENER.

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REGISTERED FOR TRANSMISSION ABROAD.

ANNUAL ASTERS.

SEEDSMEN offer, under the terms Victoria, Pæony-flowered, Crown-flowered or Cocardeau, Chrysanthemum, Bouquet, Emperor, Porcupine, and Quilled, some two dozen kinds of these Asters, that are largely increased in each case by several diversities of colour, so that a complete collection of all the kinds offered by any one Continental grower would probably comprise some 200 forms or hues of colour. It is scarcely possible, however, to grow all in a circumscribed space. There are several distinctive methods by which the Aster may be classed, such as comparative height, habit, character of flower, suitability for exhibition, for pot culture, or for bedding. Tall Asters comprise the fine Pæony-flowered (which we here figure), the tall Chrysanthemum, the Emperor, the tall Victoria, the Quilled, and a few others. Kinds of medium height are found in the dwarfer forms of the Victoria, the Cocardeau, the Rose, and the Porcupine; the dwarf forms comprise the short Chrysanthemums, the dwarf Pyramidal, and specially the dwarf Bouquet, which is one of the most beautiful of all for pot culture. The best bedding kinds are found in the medium-growing Victorias, the Rose, and the dwarf Chrysanthemum, as these vary from 9 in. to 12 in. in height, and form good bunches of blooms on each plant, and collectively fine masses of colour. The dwarf Bouquet kinds, whilst specially good for pot culture, are also valuable as edgings to beds of taller kinds. For pot culture for exhibition the best are the medium-growing Victorias, as these, if of a good strain, possess unequalled quality and present handsome and even heads of bloom. The distinctive forms, as found in these flowers, are those in request for exhibition purposes, as it is the custom in schedules to invite exhibits under the heads of Incurved, Reflexed, and Quilled flowers, or in some cases it is expressed as Flat-petalled and Quilled, and in others as French and German, the French including the Flat-petalled kinds, and the German the Quilled. These latter distinctions are, however, too arbitrary, and are giving place to those previously named, being more easily comprehended. The best examples of the incurved flowers are found in what is popularly known as Truffaut's Pœony-flowered Asters, formerly esteemed a grand exhibition strain, but which has given way, to some extent, to the more even and massive Victoria. An incurved flower shows all the tips of the petals converging inwards, as is seen in a Chrysanthemum, and the more solid and rotund the form of the flower, the better its prospect on an exhibition stand. All of these have flat petals, and, as a rule, have broader petals than any other kinds have. The most complete examples of solidity and perfection of form are found in the quilled varieties, as these would appear to be made rather than grown. Though not more than half the size of the flat-petalled kinds, they present a mass of quilled petals most evenly set, and in outline almost semi-circular. One is almost inclined to believe that such perfection of evenness could only be obtained by artificial means. It is, however, but the result of that constant care in seed selection which is ever the aim of the grower who prides himself in putting before the public things that are of the finest kind, and of the most meritorious quality.

LARGE PÆONY-FLOWERED ASTER.

The Cocardeau, or Crown-flowered, Asters are partly flat-petalled and partly quilled, the outer margin of the petals being of a dark red or blue, and the centre disc of pure white. These are grown more for their novelty than as presenting special decorative features. This bi-coloured form is, however, also found in some of the finest show quilled kinds, rendering them both valuable and attractive. The charming Bouquet Asters are also of a semi-quilled character, the petals being stiff and closely set. The blooms are of medium size and very compact, and most acceptable for nosegays. For this latter purpose, however, those who grow the Victoria forms will find that the later blooms that start out from the main stems are admirable, the clear bright hues and excellent forms being exceedingly effective however employed. Asters usually bloom through the months of August and September, and are therefore most fittingly described as autumn flowers. The date of blooming can, with some degree of accuracy, be secured by the time of sowing the seed, which should range from the end of March to the end of April, as may be desirable. Classed as a tender annual, although in reality fairly hardy in the autumn, it is necessary to sow the seeds under glass; and if a gentle warmth can be given to assist the germination of such as may be imperfectly matured or are rather aged, so much the better. Sown in pots, pans, or shallow boxes, in fine sandy soil, in any frame or cool house, at any time in the month of April, good seed should germinate freely; and it is

most necessary, to ensure a robust blooming plant, that the young seedlings should be pricked out into a frame or other sheltered place as early as it is safe to do so, that the plants may get strong and stout before being placed in their blooming quarters. Asters like rich soil; they are, in fact, like the Balsam, gross feeders, and prefer both manure and moisture. A rich soil induces robust leafage and rapid root action, and when so excited, the flower-stalk is not so soon developed. If properly treated, the Aster should always be well established in its positions before the upward direction of the stem of the plant is developed.

Asters make fine bedding masses, and admirably succeed some of the late spring-flowering plants that bloom freely until midsummer. When too late for ordinary bedding plants a good body of Asters, removed with balls of soil from the bed where first pricked into, and well soaked with water, soon makes a fine mass of colour, and such a brilliant and varied display of bloom is produced as scarcely any other bedding plant can give. Although it is a common rule to write of some kinds as best adapted for pot culture, yet it is by no means a good plan to give to any pot culture, as the Aster lifts even when in full bloom better, perhaps, than any other annual. Given the size of pot to be filled, and three or six plants may be lifted from the open ground with small balls of soil and be packed in as close as possible together in the pot, the soil fixed firmly around them; let the plants stand for a short time in a shady place, and not a bloom will hang its head or a plant flag, and once established these will continue fresh and beautiful for several weeks. Six good plants, with some five or six expanded flowers on each, packed into a 10-in. pot, form grand bunches for the verandah or corridor, or indeed for any situation where not too much exposed to heat or wind; whilst from nine to twelve plants of the beautiful Bouquet Aster may be planted thickly in pans or vases. These latter, grown in any fashion, are so very neat and effective that no garden should be without them in the late summer months.

The cultivation of the Aster for exhibition purposes renders more than average care and attention necessary. The soil should be deeply and heavily manured, the plants strong, robust, and free from all aphis or other insects; water freely during the hot months of July and August, and especially at blooming time if drought prevails. The plants should be placed in lines at sufficient width apart to enable the required attention in the shape of watering, mulching, tying up to sticks, thinning, shading, &c., to be given. Each stem should have its separate support, as it is of the first importance to keep the blooms from damaging each other. The centre bloom should at all times be removed, as this is invariably coarse, and a strong plant not allowed to carry more than five flowers; four perhaps would be better. A week before the blooms are required for show, temporary shades, made of card, linen, or similar material, should be placed over the blooms, as the desired purity and freshness of colour depends much upon the exclusion of the sun's rays or heavy rains for several days before the time of cutting. Asters may be set up on green-painted, sloping boxes, in lines of three or four deep, as may be desired. Neat circular pieces of white paper—sometimes these have ornamental edgings—should be used to back up each bloom, as these undoubtedly lend a certain air of elegance and refinement to the group of flowers. Exhibition blooms should show

Quilled Aster.

good size, fine form, full centres, solidity of petals, and variety of colour. The saving of good seed by home growers is not a matter of difficulty; indeed, it is not that Continental growers excel us in quality but in quantity, as it is too frequently the case that we get heavy rains just about the blooming time. As the massive double

Pyramidal Aster.

flowers absorb much moisture, it is difficult during dull weather to expel this until too late to save the flower from rot or decay. Seed that will reproduce blooms of the finest quality may be saved here—and indeed is saved, as all our finest Quilled Asters are the products of home-saved seed. Experience has shown that, because of the lesser quantity of petal with which the Quilled Aster is loaded, the seed is much more freely produced by them than with the Victorias or other fine flat-petalled strains. The blooms should be thinned and seed saved from the best flowers only, and should not be cut until the seeds are showing signs of ripeness; then laid out to fully dry on sheets of paper. They may soon be cleaned out, and the seed extracted and stored. Asters, as a rule, sport but little, this element being most found in the bicoloured flowers. A. D.

CHILDREN'S FLOWER SHOWS.

A BETTER idea than the institution of a Childrens' Flower Show could scarcely be imagined; and as spring is just upon us, it is well that little folks should be acquainted with the intentions of its promoters. Many exhibitions are held towards the end of July or commencement of August, which time of the year seems most suited; therefore it is necessary for children who delight in growing and gathering the flowers to know early, in order that time may be given for them to devote all spare moments in cultivating their plants, and will also afford opportunity for those who might wish to show their ingenuity in making floral devices or models to plan out their ideas. By adopting this important method there will undoubtedly be far more entries than would be the case were the matter delayed.

The first and foremost part of the business is for a dozen or more friends to meet and organise the affair, pledge their support, and circulate their intentions by small bills, inviting children to do their best to make the show as attractive as possible by bringing both garden and wild flowers, Ferns, collections of Grasses, floral devices, models (floral or otherwise), and offer prizes, which should consist of good books, ornamental and useful articles, &c., which would be appreciated equally as much as money, and probably do more good, and be valued and prized more highly. A large hall or school-room will be found quite as convenient as going to the expense of erecting booths and tents in a meadow or open space, although the latter is preferable for more extensive exhibitions.

A platform should be erected for the performance of vocal or instrumental music at intervals during the show, and which would answer the purpose of holding an entertainment (by the children, if possible) in the evening, and at which the prizes should be distributed.

Rules for exhibiting must be drawn up and printed, accompanied with a list of the different classes under which plants and flowers can be shown, making special reference to the time at which all names to be given in will close, also the hour at which exhibits will cease to be received. All plants should be under a child's care and attention at least three months before the show. The regulations should be most strictly carried out, as this will avoid all unnecessary confusion when the plants, &c., are brought. Vacant spaces could be well filled up with plants not intended for competition; and it is as well to have a table specially provided for any overplus.

The greatest difficulty is in judging. It is certainly advisable to employ a practical gardener, assisted by at least four others, for this tedious work; for tedious indeed it is, more especially at country shows, where children have every chance in this respect of getting good assortments of wild flowers and Grasses. In London little else but plants and cut garden flowers are obtainable; consequently, the difficulties in judging are more easily overcome.

Some consider that a flower show is hardly complete without an entertainment of some kind to wind up the day. By all means have it if possible, and let the children perform by giving readings and recitations, interspersed with music and singing. The charges of admission I would suggest in the following way:—From 12 to 2 o'clock, 2s.; 2 to 3, 1s.; and from 3 to 5, 6d; or the prices may be modified according to circumstances. Visitors holding 2s. tickets should be entitled to a front seat at the entertainment free; those with 1s. tickets to a second seat; and those who pay 6d. be charged again, as the committee of management think best. Should the show close at 5, and the entertain-

ment commence at 8 o'clock, there would be ample time to have the whole of the plants and flowers taken away if found necessary, in order to give room. The entire success greatly depends on favourable weather and the number of visitors, as even a children's flower show cannot be held without involving considerable expense. But such an institution should command the patronage and encouragement of everybody, and thereby be a means of promoting in the minds of children a greater interest in the growth of plants and flowers. NEWT.

FRUIT.

HOW TO GROW VINES ON THE LONG-ROD SYSTEM.

THE main points of this system are very simple, viz., grow the young rods this year and continue to do so every spring from the lowest bud. These will bear next year at every joint a bunch of Grapes. In autumn the (then two years old) wood which has carried the crop is clean cut out at the bottom, leaving during the winter only the young rods which have been grown during the present season. In these few words the whole system is embodied. To explain the management, I give the treatment suitable for a greenhouse, Vinery, or open walls. I grow all on this plan:—Two houses, one 60 ft. and one 30 ft. long; I refer to the latter. The Vinery—30 ft. long, 16 ft. rafters—is planted with one Black Hamburgh and one Frankenthal, each occupying one-half the house. Each carries six young rods every year, all of which always reach to the top of the 16-ft. long rafters by the end of May or June, when the young wood will be formed and has time to ripen during the whole of summer, which it does up to the top. The laterals or side shoots are never stopped at all. Remember this—it sounds ridiculous to many—at every eye of the rod, at the foot of the lateral, a bud will form, like a filbert almost in size, which must become a fruit bud next year if the laterals have not been interfered with. If they are stopped, this sleeping bud of this year would start to grow into a leaf bud at once, and no crop could be expected next year, When the leaves have fallen, in December, cut all laterals clean off, leaving only bare rods of this year's wood, which, as the season comes round in March, every bud (like a filbert) will break and will be quite certain to be a fruit bud, and will bear a bunch of Grapes. These bare young rods, each about 16 ft. long, grown in one season, and six of them are neatly tied 2½ ft. apart, and between each one of these the young shoots which are to grow this spring are trained up. By midsummer the greenhouse roof is densely crowded with foliage. One would almost be inclined to say "too much;" but not so: the more shade the better grown and coloured are the Grapes. The bare rods of last year's growth are all allowed to break, and their shoots are all stopped two leaves beyond the bunch of Grapes, and all and every succeeding lateral growth is totally stopped as soon as it appears: but only on these old bearing rods which are all bodily cut out at the lowest part in autumn. To induce a strong growth for the intended this year's rods, it is advisable to grow them already a season earlier, and cut them back to a low bud in winter, as a cut-back shoot always grows away far better than a fresh started bud, the sap flowing then already in its proper channel. Thus the bearing wood, cut down to the last eye, starts with a strong push, and forms again the new shoot for the following season. On each of my Vines (six bearing rods of 16 ft. each) I always have a show of above 250 bunches of Grapes in bloom in spring. Of course they are not so large and heavy in autumn (when ripe) as on the spur system; but I can carry double the quantity in regard to weight, and with a judicious thinning out to about fifty to eighty bunches left on each Vine, each weighing from ¾ lb. to 1 lb., I have as large berries, as well grown, coloured and ripened early in September as any of my neighbours; but the bunches are not so large as on the English spur system.

My Vines have stood this simple treatment for twelve years, and are all the better for it, without additional root-pruning or assistance. I give abundance of ventilation after June until the end of September, both front and back all night and day, assisting with a moist atmosphere, syringing every evening until the Grapes begin to colour; they are then kept without dampness touching them, but continue moistening the floor of the house, which, with plenty of ventilation, will keep the foliage in perfect health and all insects down. I never have red spider or scale, nor old wood in the Vinery.

I conclude these remarks by advising all to grow young wood this year for sure crop to follow the next season; and if variety is wanted, I have grafted many kinds on the above-mentioned Vines to grow if a satisfaction; or if not, to be cut out again after the trial given them. My wires are run horizontal, instead of the English longitudinal way, which suits better. This system, to grow Vines, and Grapes too, is the one adopted in most of our German vineyards. J. G. K.

Yorkshire.

Mildew on Vines.—A damp stagnant atmosphere favours the development of mildew, which often attacks Vines in all stages of growth. On Vines planted out it appears on the wood, on the foliage, and on the berries. It generally seizes on the leaves first, and looks like a small speck of mould, similar to that which appears on decayed fruit. These specks very soon multiply in number and increase in size, until the entire leaf is speckled. Before the disease has reached this stage the berries are generally affected as well, and in much the same way. It may be rubbed off them with the hand, but not before the damage is done. The part soon shows signs of a small brown spot and decays. When mildew extends to the wood, it remains on it until it is matured, and when ripened brown the spots of a dark colour are still visible upon the affected parts. Abundance of fresh, dry, warm air will stay the progress of but not eradicate the disease. Liberal dustings with flowers of sulphur are the most effectual remedy, and, if applied in time, will save all. Machines are manufactured for distributing sulphur, and they do their work efficiently. Those who have not got them may use a large pepper-box with a piece of thin gauze cloth tied over the mouth. On young Vines every leaf should be dusted all over every third day until the mildew has altogether disappeared. Other Vines must be treated in a similar way. Bunches affected should have the sulphur well shaken through them. As soon as there is a certainty of its being overcome, the sulphur should all be syringed from the leaves and fruit with clean water. Traces of it generally remain, however, and any Vines affected during the time of their growth should be well washed, and afterwards painted with sulphur when the pruning and cleaning is done. If care in this respect be not taken, it may appear again next season, when the Vines are started into growth; and the consequences may then be more serious. If young Vines are propagated from wood which has been affected with mildew, it appears on them immediately they begin to grow; so that a good deal of caution is necessary wherever its presence is suspected.—J. M.

Birds in Fruit Gardens.—We put bread-crumbs every morning on the window-sill, and the birds soon find them out and come for them every day. This is supposed to take "the sharp edge" off a bird's appetite; and certainly for many years we have not had such a good fruit crop as in 1879, when we tried this plan. I have heard that the same plan has been tried elsewhere with success.—E. R.

VEGETABLES.

Labelling Kitchen Garden Crops.—I find it to be an excellent plan not only to name each variety of vegetable grown in the kitchen garden, but also to add the date of sowing or transplanting, as by referring to these dates when the crop arrives at perfection one may get many useful hints for future guidance. For instance, Cauliflowers or Broccoli we have cut from the open ground for years past with scarcely an interval or blank in the supply. But in order to do this the sorts must be well selected, the dates of sowing and transplanting must be known to a certainty, and situations to suit various soils and seasons must be selected with care, or a protracted drought in summer will cause as great a failure as a protracted frost in winter. And the same applies to all crops. Peas may come in too quickly or at too long intervals apart, even if sown at what was supposed to be the most favourable date for ensuring a constant supply; and if we have no trustworthy reference to depend on we cannot correct the error in succeeding operations. Celery and such crops as are liable to prematurely run to seed if sown too soon, and which we are also anxious to have fit for use as early as possible, can only be grown satisfactorily through close observation to apparently trifling details of culture, and by classifying for special purposes. The labels for all such crops should be at least 1 ft. 6 in. long and 2 in. wide, made of soft yellow deal planed quite smooth and painted white, and the name should be written in large characters with Wolff's garden pencils. Such labels defy the weather, and remain perfectly legible as long as any crop will stand in one position. Herbs, salads, and medicinal plants ordinarily grown in kitchen gardens should have the name by which they are most generally known conspicuously placed on each bed or compartment, so that it may be readily found by the most casual observer. It is only by such means that one can satisfy oneself which varie-

The Chrysanthemum-flowered Aster.

ties of vegetables are really distinct and which are not. A constant supply does not depend on the number of varieties which one may have, nor even on "complete collections," but on the best sorts in each class.—J.

Planting Asparagus.—The worst way of growing Asparagus with which I am acquainted is in the old-fashioned beds, which devour annually as much stable manure as would suffice to dress five times their extent of surface in other parts of the garden, and usually with anything but a satisfactory result. I grow single plants in a single row with an interval of 30 in. from plant to plant. Grown in this manner, without a second row near them, they are able to extend their roots as far as they like on either side. I was induced to try this method three years ago, from having noticed for the last few years a single plant which had come up self-sown near the branches of an old espalier Apple tree. This plant has never been dressed with manure of any sort, and I have observed that what was cut from it was always finer than the average produce of the beds. I took the hint offered me by this intruder, and have profited by it. My single row produced largely last year, and now it has received for the first time a top-dressing of manure. Along one side of the row there runs a wide path, and on the other is an ordinary kitchen garden border, and all that we have to attend to is not to dig or crop too near the row. An occasional dressing of salt, or soot and salt mixed, and rarely one of stable litter, will probably be quite sufficient to maintain the plants in full vigour for several years; but by growing them on this system we can change our ground as often as we like, and plant in other parts of the garden new rows when we think it is time for any of the old ones to be uprooted and destroyed. There are probably few plants that require root-room more than does the Asparagus; hence the impropriety of crowding it in beds, where, owing to the seedlings which are continually being produced, it has often to struggle even for existence. I have just put in a row of plants, one-year-old, which were raised here from seed.—B. S.

Dwarf Kidney and Scarlet Runner Beans.—The dwarf Kidney Bean is one of the most useful vegetables grown as an outdoor crop, and it is also most accommodating if cultivated under glass. It is very impatient of cold, and therefore a warm sheltered situation should be chosen for it. Crops of it are often damaged by being sown too soon; the second week in May is a good time to sow the first crop, and a second sowing at the end of May will furnish a supply till Scarlet Runners come in, after which the Dwarf Beans are seldom asked for. The latter should have 2 ft. between the rows, and 10 in. in the row, and the tall growers 2 ft. 6 in. row from row, and 1 ft. apart in the row; they like a good, rich soil that has been well manured for a previous crop, which is better than rank manure, in which the plants are apt to run too much to foliage instead of fruitfulness. In very hot weather they enjoy a good damping over the foliage about five o'clock in the evening through a fine-rosed watering pot or garden engine. Such treatment strengthens the plants and prolongs the gatherings; it also obviates attacks from red spider, to which they are liable. For the first sowing Early Prolific is an excellent cropper and comes in early, and Pale Dun is a good kind for a general crop, with Canadian Wonder for large pods. Runner Beans require similar treatment to the Dwarf kinds, with the exception of the distance between the rows, which should be 4 ft. apart and 1 ft. in the row. They can be grown with sticks in the same way as Peas, pinching out the points when they reach the top, or they may be run up strings. They are a very valuable crop for both the amateur and the cottager. They do not take up much room, and they can be run on strings against boards or a building, on which the old Scarlet, which is one of the best for general cropping, has, when in flower, a fine appearance. Even in some of the most confined town gardens may often be seen Scarlet Runners flowering profusely and bearing pods in abundance.—S. W.

Growing Peas in Trenches.—As a precaution against drought in the case of mid-season crops, I consider this a decidedly beneficial and satisfactory mode of growing Peas. Our crops of Peas treated in this way have always been excellent. The trenches were prepared as for single rows of Celery, about 6 ft. apart, with a good quantity of old Mushroom-bed manure forked into them, and as soon as the Peas were up and staked, a good mulching of half-decayed manure was applied, by means of which one good soaking of water kept the soil moist for a considerable period. Thus managed, tall sorts, such as British Queen, Ne Plus Ultra, and Champion of England, continued to furnish successional gatherings quite as long as we have had them in more favourable seasons when grown on level ground. In the case of Scarlet Runners, Cauliflowers, and similar crops, some portion of the crops should also be planted in trenches as a precaution against drought.—H.

House and Window Gardening.

Woodwardia radicans.—This is one of the best of Ferns for growing in light airy, but not necessarily sunny windows, especially as a centre-piece for a vase, or for placing on a pedestal, as seen in our illustration. Its fronds being broad and gracefully-arched, it is, when grown in baskets, very pleasing. The fronds produce young plants at their extremities—a circumstance of which advantage is taken when young plants are wanted. All that is necessary is to take a frond furnished with a number of these embryo plants and to lay it on the surface of a broad seed-pan filled with peat and sand in about equal proportions. Peg down the frond

Woodwardia radicans.

quite flat on the mould, keeping the upper surface still upwards, and sprinkle a little silver sand over the whole. Do not, however, bury the frond; but, on the contrary, let the sand just nestle about the axils of the pinnæ and the base of each young bud. The whole must be kept moderately moist and the young plants will strike root. In a cool Fernery the fronds of W. radicans not unfrequently acquire a length of 8 ft. or 10 ft. Woodwardias like a loamy soil; and when confined to small pots are much benefited by frequent applications of manure water, or a top-dressing of some good artificial manure—such as Clay's or Standen's.

Ferns for Rooms.—Two good Ferns for cultivation in sitting-rooms are the common Sea Spleenwort (Asplenium marinum), and Polystychium capense. The stouter texture of the fronds enable them to be easily washed and to bear the somewhat rougher treatment that such plants usually get. The latter is a very rapid grower, but does not care for very much water.—C.

Primula purpurea as a Table Plant at Night.—A few evenings ago I introduced this beautiful hardy Primula to the table after the gas was lighted, and the effect was most striking, for the clear mauve-purple of the blossoms, so perceptible by day, appeared at night to be of a charming pink hue. A plant with the leaves pretty well developed, and having five or six flower-stems, is by no means an ungainly object on the table. There is a tendency now-a-days to make certain plants, such as Palms, Crotons, Ferns, Dracænas, &c., the regulation plants for the table, and any departure from these is regarded as a breach of good taste. But there is no reason why any charming plan should not be utilised for the purpose; and confidently commend to the notice of plant cultivators the subject that heads this note.—D.

The Smilax as a Window Plant.—The Myrsiphyllum asparagoides, commonly known as Smilax, is one of the prettiest climbing plants with which I am acquainted. There are no large and showy leaves or gaudy-coloured flowers to attract attention, but everything about the plant, from its long, slender, Grass-like stem to its small, delicate, fragrant, white flowers, is the very perfection of grace and neatness. The roots, being small, require but little pot room or soil, and the vines shoot up rapidly, clinging to any slight support given in the form of twine, wire, or trellis. Plants are easily produced from seed, or they can be had of any good nurseryman. I do not think the merits of this neat little climbing plant are as fully appreciated as they deserve by those who take delight in cultivating window plants, as it is especially adapted to this purpose. While a majority of plants of a similar habit become large, coarse, and cumbersome when fully developed, this Smilax never reaches such a stage, but is always light and graceful, no matter how strong and vigorous the growth. It is extensively cultivated by American florists, the gentler sex being their principal customers, for Smilax enters largely into those "little nothings" which add so much to the grace and beauty of the final touches of a lady's toilet. Although the Vine of the Smilax appears to be very delicate and fragile, it is quite the reverse, for the stems are almost as tough as wire, and the leaves remain fresh without wilting a long time after the twigs are separated from the parent plant, even in a warm and dry atmosphere; hence the special adaptability to the purpose named.—E. S. F.

Management of Conservatory (1511)—A conservatory, in the strict sense of the word is a glass structure in which plants remain during their blooming period, in which case the only care required is to attend carefully to the watering and ventilation, and screen them from the hot sun, so as to prolong the flowering season as much as possible. Presuming, however, that in the present instance the plants will have to remain in the same structure the whole year through, the main point to observe will be to so arrange the inmates that each one gets the treatment best calculated to bring it to perfection. This would be a more easy matter, and more variety and better results would be obtained, were the house in two divisions—one to be devoted to Ferns and other shade and moisture-loving subjects, the other to such plants as delight in a maximum of light and air. In the first class may be placed many kinds of fine-foliaged plants—such as Aspidistra lurida variegata; Dracænas rubra, congesta, and indivisa; Palms—Chamærops Fortunei, Rhapis flabelliformis, and Corypha australis; Lycopodiums Kraussiana and helvetica; Aralias trifoliata and reticulata; Panicum variegatum and Tradescantia zebrina for hanging baskets; the beautiful flowering climbers, Lapagerias alba and rosea, for training up the roof; and the interesting and varied family of Ferns. This may be considered as a representative list, and comprises some of the most beautiful of those plants which, although requiring a certain amount of light, yet love a somewhat close and at all times moisture-laden atmosphere. It will therefore be seen that if a varied collection of plants is desired some system of grouping must be observed. In any case, even where no separate compartment exists, plants of a like nature may be now placed together, so that the admission of air may be regulated according to their respective natures. This is a point often overlooked by amateurs, but which is really the keystone of success. Provision should be made for shading in hot weather, and it would be preferable to make arrangements for shading one-half or a third of the house at will, as it will be readily seen that the amount of sun required by such flowering-plants as Geraniums, Lobelias, Lantanas, succulents, &c., is greatly in excess of that necessary for the shade-loving subjects mentioned above. The French lath blinds, as supplied by Messrs. Richardson & Co., of Darlington, are best calculated to give satisfaction, as they can be made to any required length, and do not need a roller of any kind.

In lieu of this, rush mats may be used, or that portion of the house devoted to shade-loving plants may be freely sprinkled with flour and water. All soft-wooded flowering plants that bloom during the summer months should only be screened from the hottest sun, and should get air night and day during the summer season. If there is a back wall, we would plant out Camellias to be trained to it, and would plant in the front border, or in a large box, some such climbing plant as Tacsonia Van Volxemi, Passiflora Impératrice Eugénie, and Maréchal Neil Rose. Cobea scandens variegata is also a very free-growing, pretty, and effective climber. What is really required in connection with a greenhouse is a cold frame, in which may be raised and grown along some Chinese Primulas, Cinerarias, Calceolarias, and Cyclamens for winter blooming. It is difficult to grow these plants amongst the miscellaneous contents of a greenhouse. Amongst desirable plants may be mentioned Abutilons, Paris Daisies, Azaleas, Cytisus racemosus, Habrothamnus fascicularis, Coronilla glauca, Sollya lineraris,, Rochea falcata, Echeveria retusa, Kalosanthes, Acacia armata, and Cereus flagelifiormis. These are all of easy culture, requiring plenty of light and air, and are very effective when in bloom.—J. C., *Byfleet.*

Hints on Cuttings.—When we enquire into the conditions favourable to the development of the life latent in the detached portion of a plant which we call a cutting, we find, firstly, that as plants can only absorb liquids it will be necessary that the base of the cutting should be in contact with some moist substance; but as its power of absorption and demand for nourishment is small; so must the amount of moisture and supply of food be limited. It is in order to fulfil these conditions that cuttings are placed in sand, fibrous composts, or some medium which affords moisture, thorough drainage, and that circulation of air which is necessary as well for the life and development of the parts below ground as of those above. Secondly, it will be necessary to establish a certain equilibrium between the evaporation and the absorption, for if a cutting evaporates more than it absorbs it will perish; and as evaporation is principally excited by the plant's contact with the air, it will frequently be necessary to prevent this contact or to diminish its effects. The more leaves a cutting may possess, so much the more necessary will it be to protect it from the air. The exceptions to this law are few, being found chiefly among succulent plants such as the Cactus, Opuntia, and Sedum, and a few others such as the Pelargonium. These succeed without protection from the air and even in sunny positions, whereas all the others should be protected from the direct rays of the sun. The conditions named above are practically obtained by the use of such protections as glasshouses, frames, bell-glasses, &c. Cuttings in general may be grouped under two divisions: those taken during the repose of vegetation, or without leaves; and those taken during active vegetation with leaves attached. Those in the first division will not require to be protected from the air, or at least only exceptionally, and chiefly in order to preserve tender varieties from cold. Those in the second division, excepting succulents, require protection. In order that a plant may live its absorption must be at least equal to its evaporation; and when a portion is detached, as in taking a cutting, then absorption should be greater than evaporation. This is what happens when we make use of glass coverings, and explains their frequent employment, their indispensability when the cutting is herbaceous, taken from young and tender shoots, or covered with leaves, and also how it is possible under such conditions for a leaf, or even a portion of a leaf, to live and develop roots, which leaf if exposed to the contact of dry air would almost immediately perish.—Ombu.

Simple Propagating.—Make a strong box not less than 3 ft. square, 18 in. deep; stand in any part of greenhouse or frame, fill to within 3 in. of top with fresh horse manure made firm (the firmer it is made the better); prepare a mixture of old sawdust or Cocoa-nut fibre, with plenty of sand, mixed together, fill the box to the top; in about four days it will be ready to receive any cuttings you may wish to strike. This plan is most useful for the amateur dahlia grower, as by planting the tubers in the sawdust they soon start into growth.—J. T.

TREES AND SHRUBS.

The Laurustinus in Pots or Tubs.—The Laurustinus, so long employed to ornament our gardens, both large and small, makes a pretty pot plant, and may be forced into bloom at a very early period of the year. It is useful either as a small compact plant for general decorative purposes, or large specimens may be grown in tubs, as shown in our illustration, to be introduced as required into the greenhouse, and they by no means require the lighest and best part of the structure—where they will yield, from Christmas onwards, an abundance of flowers for cutting. Any one who has a warm house may utilise the Laurustinus to great advantage, as the plants may be placed in a light shed or cold frame, from whence they may be introduced into warmer quarters. Where there are corridors and draughty places to decorate, these forced plants will be found as useful as any plant in cultivation, inasmuch as they last so long in flower, and do not show any signs of suffering when exposed to vicissitudes of temperature. It would be well if every one made a point of keeping a stock of Laurustinus in pots, as, apart from the enjoyment to be derived from them early in the year, they serve to guarantee us against exceptionally severe winters. We from time to time experience a season which cuts off a portion of the outdoor plants, and our gardens are denuded of this pretty shrub. Plants of the Laurustinus for forcing, for supplying flowers to the London markets, are generally obtained from the Continent or from nurseries in which they are largely grown for supplying the trade. They are potted in October and November, and introduced into a warm temperature, under which, with plenty of water at the roots and frequent syringing overhead, they soon open their bloom. After flowering, the plants are either plunged in beds of ashes or soil out-of-doors, or are turned out of their pots into good soil in the following autumn, when they are forced as before. A few growers, however, raise their own plants, and dispose of a quantity of them when in a small state for window decoration, &c. In this case cuttings are taken off in August and September, when the wood is becoming firm, and are inserted thickly in pits or frames, into which have been introduced a few inches in depth of sandy soil, made firm. They are kept close for a few weeks, after which air is freely admitted. By the spring they will have made good roots, and they are then transplanted into prepared beds of rich sandy soil in the open air. Here they remain for about two years, when they are lifted and potted, allowing a little room for the roots to expand. After this the pots are plunged in a sunny position, and shifted on into larger pots as may be required. Some have their stems kept clear of shoots, so as to form standards; others are allowed to grow naturally into sturdy bushes. When they have become well-established plants in 6-in., 8-in., or 9-in pots, well set with buds, they are moved into the houses in November and December, to open their flowers. By inserting a quantity of cuttings every year, a succession of good plants is kept up.

Standard Laurustinus.

Shrubs for the Seashore.—I live on the west coast of the county of Ayr, and my experience enables me to state that I would plant, next to Sea Buckthorn and Australian Pines, common Hollies; then evergreen Oak, Arbutus, Noble or Sweet Bay, and the finer evergreens, Pines, &c., all of which will live and thrive, notwithstanding the salt in the air, if they have only protection from the wind. The evergreen Oak (on a dry soil) grows with us into a splendid tree, and should be planted more extensively than it is in England. The Araucaria, Taxus, and Cypress tribe will not form specimens without shelter from the wind, although 20° of cold do no harm whatever.—D.

Flower-pot Stoves.—Some time ago I tried the plan suggested in Gardening for heating a small greenhouse by the means of two flower-pots, and at first experienced two disadvantages—namely, the breaking of the pots, and a deficiency of moisture. I, however, overcame these difficulties by having two pots made of fire-clay, exactly the same as ordinary ones; the lower one of a large size, and the upper a little smaller to fit into it, at the cost of 2s. each. I then had three iron bands put round the lowest pot, and to the top band a couple of handles fixed for the convenience of lifting, and also from the lowest one two slight bars passing under the pot to make it more secure. Then I had a tin pan made and placed on the top of the upper pot, and filled with water, the pipe forming the chimney passing through an open space in the centre of the pan. The water soon gets heated, and a nice steam is diffused throughout the house. In making the fire, care should be taken to put a few small pieces of coal at the bottom of the pot; then fill nearly up with cinders, and on the top of that light the fire with wood and a few more pieces of coal; when that is well ignited fill the remaining space with cinders. I have given this a very fair trial through some of the most severe weather, and find it will keep up a steady growing heat for sixteen or eighteen hours without any attention. It is of great importance to keep the aperture of the chimney where it fits into the pot perfectly clean, as it is apt to get choked, and impede the burning of the fire.—H. M. D. B.

Unheated Greenhouses.—I differ greatly from the writer of an article in Gardening under this heading. I therefore give my experience of an unheated greenhouse, and show how I have kept my plants. I possess a greenhouse 26 ft. by 7 ft., and during the last winter have lost only four Geraniums. I keep Primulas, show and fancy Zonal Pelargoniums, Fuchsias, Azaleas, and Cinerarias. The way I have succeeded is by the use of large sheets of "brown paper." On a frosty night I place the tenderest plants on the floor of the house, cover them with brown paper, and then cover the outsides and the roof with the same material. This plan may be laughed at in England, but in the south of Ireland we find it most efficacious. I have no heat of any kind, and just now all my plants are in fine foliage and healthy in every way. Necessarily they will be rather late, but many would not object to this. I am sheltered by high walls on north and west, and only nine miles from the sea, while the tide washes up to my garden. Perhaps this may account for same. But some nights during the winter we had 16° of frost. Brown paper is a marvellous aid to the preservation of plants.—Amateur.

Manuring Gardens.—As the days lengthen, many readers will be looking out for a good jobbing gardener, and in many cases, I have little doubt, they will fail to find him. I hope my remarks wont give offence to any gardener who may chance to read them; they are intended to apply to the men who "know how to do everything in gardening," and who find fault with everything your previous man thought proper to do. One of their great failings is to spare manure when the supply is abundant, especially if they have to wheel it very far. I have found this the case; therefore I offer a word of caution to those who have plenty of good manure to see—if possible, that it is liberally used; and be careful how you trust the pruning of your trees to such a man.—Rustic.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

April 5.—Sowing the following sorts of flower seeds—viz., Primulas, Cinerarias, Asters, Stocks, Mignonette, Heart's-ease, Polyanthus, and Nasturtium; potting Balsams, Petunias, and scented-leaved Pelargoniums; removing bedding plants from Vineries to colder quarters; potting Achimenes in 6-in. pots, putting sixteen plants in each pot; potting spring-struck Centaureas, Nasturtiums, Veronica Andersoni variegata, Cedronella cana, Lobelia Paxtoni, various Petunias, and Viola cornuta; shifting Caladiums, Tuberoses, Azaleas, Cytisus, and Camellias into larger pots; also pot Vines; sowing Asparagus; planting two rows of Globe Artichokes, and second pit of Melons; pricking off Marigolds, Prince's Feather, and one light of second sown Cauliflower plants; tying up late Vines; cutting all the old wood out of Deutzias so as to encourage the growth of young shoots; planting a quantity of small Ashleaf Kidney Potatoes to produce seed for next year; finishing levelling down Celery trenches for Peas; thinning fruit in Peach-houses where too thickly set; salting Asparagus beds; clearing manure from Rhubarb crowns out-of-doors; turfing blank places in lawn; digging land for Spinach, and cleaning Herb beds; putting rimmed saucers under Strawberry plants, swelling their fruit, and staking Sweet Peas in open ground; hoeing between vegetable crops, and taking litter off Vinery borders; putting Seakale seed in water to soak, in order to hasten germination.

April 6.—Sowing Dwarf Crimson and Incomparable Dwarf White Celery in a frame for the main crop; also Spinach and Radishes; potting Caladiums, Chrysanthemums, and large Camellias; putting in cuttings of Dahlias and Alternantheras; planting out a four-light pit with Melons and three manure frames with Cucumbers, and earthing up those in a more forward state; getting out trenches for two early rows of Scarlet Runner Beans; clearing off Seakale beds and getting them forked up; watering Mushroom beds with manure-water; potting Tree Mignonette, using half loam, half cow manure, and some silver-sand, and giving but a small shift at a time; sowing Altrincham and Long Orange Carrots, Champion of England and Victoria Marrow Peas, Long-pod Beans, Early Stone, and White Dutch Turnips, Red and White Celery, Seakale, Sorrel, and Green-fleshed Melons, and a row of Sweet Peas; planting Strawberries and Larkspurs; pricking out Tagetes signata and Lettuce plants; getting all established bedding plants out-of-doors; thinning earliest-sown Turnips; earthing up Cauliflowers; clearing away Winter Greens that are running to seed.

April 7.—Potting Feverfew, Penstemons, Hydrangeas, Balsams, and seedling Cyclamens; shaking out and repotting scented Pelargoniums; shifting Cissus discolor in. pots; and Fuchsias into 6-in. pots; sowing French Beans under the protection of a wall; sowing also Cabbage, Winter Greens, Lettuce, and Autumn Giant, Early London, and Walcheren Cauliflower, Sweet Basil, Marjorum, Australian and American Cress; planting Beet for seed and a good breadth of Asparagus; pricking off Asters, Picotees, Carnations, Wigandias, Salvia argentea, and Zinnias; putting Broccoli fit for use into cellars in order to prolong its season as much as possible; salting Cabbage ground; putting annuals from Vineries in sheltered spots out-of-doors; covering Asparagus beds with soil where shoots are peeping; hoeing among Strawberry plants; manuring Rose trees; sowing the following sorts of Peas, viz., Fortyfold, Giant Emerald Marrow, and Omega; also the following sorts of Broad Beans, viz., Johnson's Wonderful, Longpod, Seville Longpod, and Hardy's Pedigree, Windsor; potting Dracænas, Palms, and a few stove plants; pricking off Perilla and Golden Feverthrum; clearing the litter from early Rhubarb, putting manure on the ground, and forking it in round the plants.

April 8.—Potting Daturas in flowering pots and Sweet Peas in 12-in. ones; sowing Radishes, Malope grandiflora, Spinach, Vegetable Marrows, and Ice plants; also Cucumbers, Melons, and Gherkins; likewise Scotch and Buda Kales; transplanting earliest Celery into manure; pricking out Arabis; sowing French Beans under a south wall; potting off Alternantheras, Coleus, and Dahlias; pricking out Celery in boxes, also from boxes into frames; giving early Vinery where the bunches are thinned a good soaking of guano-water, and getting all vacant ground dug up.

April 9.—Sowing a collection of ornamental Grasses, also Mustard and Cress; pricking out Brussels Sprouts and Cauliflower plants in frames; planting out spring-sown All the Year Round and Giant White Cos Lettuce; getting all Broccoli into the store-shed as fast as it becomes fit for use; Dutch hoeing amongst Strawberries, Gooseberries, and Currants; turning over gravel walks to give them a fresh appearance. Potting blue Salvias, spring-struck Verbenas, Iresines, and young tree Carnations; potting off Cockscombs; sowing French Beans and Grass seeds; planting out all frame Violets; pricking off Perilla and Stocks; putting in cuttings of Mrs. Pollock, Goldfinch, and Cloth of Gold Pelargoniums, and placing them in heat; also Plumbago, Bouvardias, and scented Verbenas; throwing out trenches for main crop of Celery.

April 10.—Cleaning off Broccoli stumps and other vegetable refuse, and getting manure on to the ground; earthing up and sticking Peas; getting nets put over Broccoli seeds to keep them from small birds; potting off Wigandias and other fine-leaved plants for conservatory; potting off Balsams and seedling Lobelias; sowing ornamental Grasses and Gourds, Incomparable and London Colewort, Fearnought Cabbage, Couve Tronchuda, and Seakale; planting Lettuce and picking off annuals in frames; washing Gardenias to free them from scale; covering Potatoes peeping above-ground with fine soil; watering Cauliflower plants under hand-lights with sewage; getting all established bedding plants out-of-doors; also Balm.

Flower Garden.

Auriculas.—Choice named varieties of these should now be removed into the greenhouse. Many of the pips are opening, but the best pips will not open without a little heat; they will do fairly well in frames, should the weather be mild; but dull, cloudy weather, and the temperature but little above the freezing point night and day, will be productive of mischief. The air of ordinary Auricula frames is too cold and damp for the most tender flowers. Placing mats on the frames at night and removing them in the morning is also troublesome. Alpine Auriculas are much more hardy than other kinds.

Carnations and Picotees.—The weather has been comparatively favourable for plants of these that have been potted into their flowering pots and placed out-of-doors. Athough the east winds have been cold enough, there have been no heavy rains. See that the plants are quite secure, and if any of them show, by their foliage shrinking, that a wireworm is at the root, remove the plants and destroy the intruder. Now is a good time to sow seeds to produce strong flowering plants for next year. Sow in pots or pans, which may be placed either in a cold frame or on a gentle hotbed, on which the seeds will vegetate rather more freely. The frame might also be available for many other subjects, such as Asters, Stocks, Zinnias, Rhodanthes, and other half-tender annuals which may be sown at this time. See that the ground is in a friable state between rows of seedlings that are expected to bloom this year. Look for slugs and the leather-coated grub, which still does mischief if unchecked.

Dahlias.—Success in reference to these can only be attained by good treatment now. See that they are not coddled too long in heat, nor exposed to cold east winds. The soil where the plants are to be placed should be turned over in fine weather, and a reserve of suitable compost may be prepared to place round the roots at planting-out time. Supports for them should be prepared.

Gladioli.—The general collection of these may now be planted out; and of all the plants with which we have had to deal, the Gladiolus, more than any other, requires a light, deep, rich, well-prepared soil. A change of stock is essential to the production of the best flowers. Plant them from 1 ft. apart, with a little sharp white sand under and over each bulb; then fill up the drills with loam well pulverised.

Phloxes in Pots.—If the frames are wanted for more tender subjects, these may well be placed out-of-doors in a sheltered situation. See that the plants are potted at once, if not already done.

Flower Beds.—Where it is intended to form new beds for flowers or fine-foliaged plants, they should be prepared at once. The soil should be taken out to a depth of 2 ft. to 3 ft.; a layer of brick rubbish from 6 in. to 1 ft. in thickness should then be placed in the bottom and covered lightly with partly decayed manure, and filled up with a mixture of soil suitable for the plants intended to be used. Towards the middle of next month, it is probable that Hyacinths and some varieties of Tulips may require support; a method of doing this is to have stiff wires, about 15 in. length, bent round at one end to form an eye; these can be readily inserted into the ground. Pass the matting used for tying through the eye, and tie it just under the blooms, and as the stalk lengthens the wires are lifted to the required height. Such supports are much neater than small sticks, and with a little trouble the wires might be made to clasp the stems, thus dispensing with the tying. Seeds of annuals, such as Mignonette, Beet, Iberis. Carduus, Larkspurs, Love-lies-bleeding, Prince's Feather, Sweet Peas, Linums, &c., may now be freely sown. As the majority of annuals are short-lived as regards flowers, the best plan to adopt when a succession is desired is to sow at intervals of a fortnight—the main point tending to success being that fine seeds are not buried too deeply nor sown too thickly.

Grass should be thoroughly freed of weeds, the growth of which will soon be rapid; roll and mow frequently. Also roll and weed roads and paths as often as may be necessary; tar-paved walks which show signs of deterioration should be painted over with tar, and covered thickly with fine sea-shells, sand, or similar materials. This time of the year, provided the walks be dry, is preferable to the summer time for this work. The tar should be put on hot with long-handled brushes, and the shell or other materials should be spread over the surface before the tar has set or become dry.

Shrubbery.

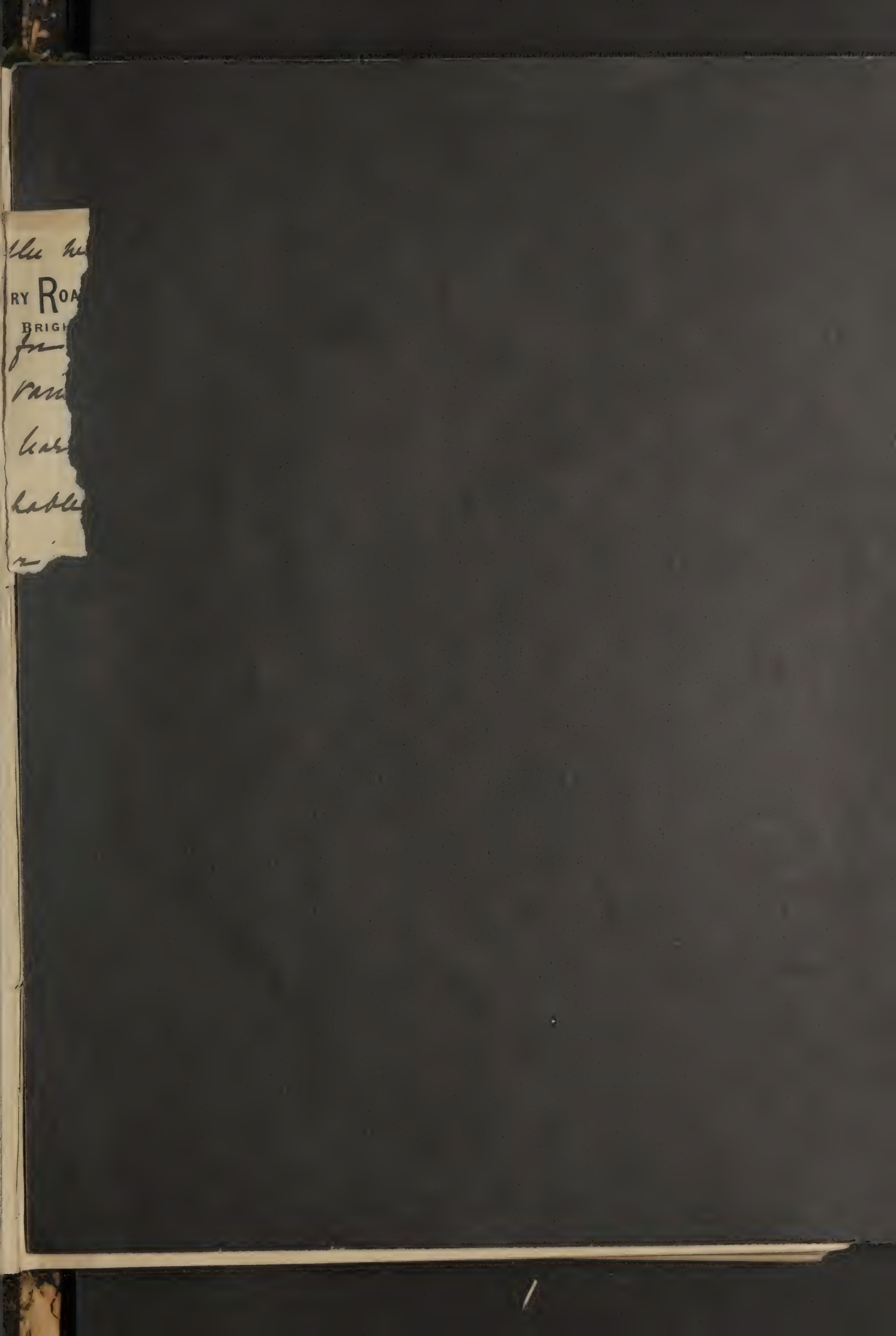
Pruning.—Where pruning is necessary in consequence of shrubs having become overgrown, or from other causes, the general character of each must be preserved as far as possible. The beauty of shrubs, and also their utility, lies very much in their individuality. Those whose habit is spreading should not be pruned to form close bushes, and *vice versâ*. The same applies to trees; and where it is necessary or desirable to prune with the object of preventing injury from high winds, my opinion is that it is much better to take out whole branches close to the stem than prune the branches themselves; this method, whilst thinning out the superabundant wood, does not destroy the character of the tree thus operated on.

Ivy and other Edgings.—These, when kept in good condition, are extremely effective, but the contrary is the case if neglected. Ivy and Euonymus radicans are useful town plants, and edgings of these, from 1 ft. to 2 ft. in width, are especially adapted for small open spaces, as, for instance, squares. The decaying shoots of each should be carefully pruned out, and all dead foliage removed. Then the best and strongest of the young wood should be retained and regularly pegged down, putting in new plants where required. A light dressing of thoroughly decayed manure will also be found very beneficial.

Fruit.

Vines.—At the present time, perhaps the most important matter connected with late Vines, which will now be starting into rapid growth, is to be certain that the borders have had a sufficiency of water to thoroughly moisten them throughout—a not very easy matter, taking into account the long time that water has had to be withholden from them, more particularly in cases where the Grapes were left to hang on the Vines; therefore, if any doubt exists as to deficiency on this score, fork down to the very bottom of the borders in one or two places that seem likely to be the driest, and if the soil on being pressed in the hand does not adhere, then water is still required. Mulch the borders thinly with stable litter, and keep up a humid temperature of 60° in the coldest weather; and whenever it is sunny give air early, and as carefully as if for early Vines, closing up by 2.30 with a renewed application of humidity, when, if 85° are reached, the Vines will revel in the extra warmth. Disbud as soon as the best bunches can be discerned, leaving two shoots on each spur in the case of old Vines, but one only in the case of young and vigorous ones. Those in flower, Muscats more particularly, demand hourly attention to secure a good "set." If a circulation of warm, dry air, to disturb the pollen, could at all times be maintained, artificial fertilisation would be best left alone; but as this is impossible (at all events, in spring, when biting easterly winds are the rule), it is best to resort to artificial aid, which should be used when the highest temperature has been attained. The removal of surplus bunches before blossoming rather than after that period would tend to ensure a better "set." Lateral growths should be left intact till after the fruit is set. Grapes that are stoning should be kept at as equable a temperature as possible—say 65° at night and 75° by day, declining proportionately in exceptionally cold weather. A moderately humid, ammonia-charged atmosphere should still be maintained, but as the Grapes approach the saccharine state, moisture should be gradually withheld. Supply pot Vines that are bearing full crops with an abundance of clear manure-water, which, as a matter of course, should be of about the same temperature as that of the soil, and, where there is space for development let the lateral growths extend without restraint.

Melons.—It is now time to sow for the principal summer crop. The seeds should be sown singly, or at most a couple, in a 3-in. pot or other, that no potting off or division be required; for, however carefully this may be done, a severe check is the result. When the early plants show fruit, select about four of the finest on each plant, and fertilise at one and the same time. Some varieties fail to swell off more than one or two fruits, and the reason frequently is because they have been set at different times, and the one that has got the lead has retained



it. Till brighter weather arrives, apply air and moisture somewhat sparingly, and also keep the bed rather dry than moist for the present.

Hardy Fruit.—The present, as far as fruit culture is concerned, is the most critical period of the whole year, for a single night's frost may do a large amount of injury; hence the importance of adopting preventive measures to ward off frost, let the cost of labour to do so be what it may. Evergreen boughs and Birch or Hazel spray, straw or hay bands, netting or canvas fixed to short poles, are all handy and effective protectors for walls that have not—as walls should have—proper movable blinds. Small bushes, lines of cordons, and espaliers can be protected in the same way as wall fruits, the labour of doing so being by no means so formidable as one might imagine. Where there are movable curtains to walls, they should be kept down during bright sunshine, to retard the opening of the blossoms in hopes that the advanced season may bring freedom from frost when the flowers are fully expanded; and, no matter what the weather may be, the coverings should be let down nightly, and on frosty mornings be allowed to remain down for some time after the sun shines, and during the prevalence of keen cast and north-easterly winds they should also be left down. A plot of ground should now be prepared on which to plant out, as soon as sufficiently hardened, the earliest forced Strawberry plants. These, if the flowers be kept picked off, will produce early runners for another season's forcing, and some varieties—notably Vicomtesse Héricart de Thury—will produce fine fruits in the autumn.

Vegetables.

The earliest Potatoes will soon be above ground, and vigilance will be required to keep the soil well drawn over them till the haulm gets too high for this being done, when stable litter or Bracken shaken lightly over them will form an efficient protection against any ordinary frost. In dry weather the hoe is a great economiser of labour, and at this early season, though the weeds are barely discernible, it should be in full swing among all growing crops, such as Spinach, Cabbage, Broccoli, Lettuces, and Parsley, when it will both aid growth and destroy weeds. In the event of showery weather a sharp look-out for slugs will be requisite, or Cauliflowers, Lettuces, and similar plants will soon disappear. The best trap for these is bran put down in small heaps, of about a tablespoonful each, near the plants, early in the morning and late at night. On this they will be found feeding, and can be destroyed. Lime, soot, and wood ashes all more or less deter them, but bran is the best remedy. It is yet rather soon to sow the general stock of Broccoli and Kales, not but what they would do best if sown now and grown on without check; but, as oftener than not they have to be planted on land that has been cropped with early Peas or Potatoes, the plants are apt to get stunted ere the ground is at liberty for them, so it is best to sow late; still, the early kinds should now be sown, and also a few Savoys and Scotch Kale. We usually sow thinly in drills 1 ft. apart, and then no transplanting, other than the final one, is required. Potatoes, Carrots, and Radishes in frames should be well aired—indeed, on bright days the lights should now be entirely off; more water will also be required, and a spindly growth of Carrots and Radishes prevented by timely thinning. French Beans in frames may be kept rather close until they begin to show flower, after which, air freely, support with Birch twigs, and water liberally; a check from want of water would be the precusor of red spider. All the Seakale intended to be forced this season should now be covered up.

Celery for Rheumatism.—There is no definite limit to the quantity of Celery that should be taken in severe cases of rheumatism or gout. Too much cannot be taken while it is digested. The cause of rheumatism and gout is a deficiency of alkalies in the blood and an excess of fibrin; both caused by flesh-eating, and consequently a deficiency of oxygen in the blood. The whole evil is certainly and completely remedied by ceasing to eat flesh at all, and eating fruit and vegetables. But Celery, of all vegetables, does the work required more effectually and rapidly, cooked for meat for dinner in milk, as detailed in pamphlet "Food for the Million," by W. G. Ward. Another way: Boil whole sticks of Celery; when soft take out, cut lengthwise in slices and dip in butter, then fry in olive-oil. It may be eaten raw as long as digestible as well. In severe cases of rheumatism it is to be drunk as well as eaten; the water Celery is boiled in, as above, to be drunk. Or a stick a day, boiled down until all is dissolved except a little stringiness; remove it, add the juice of one Lemon, and drink it. Such a thorough plan of eating and drinking Celery will remove rheumatism or gout in a month or two. Of course, no flesh should be eaten, or alcohol drunk. More, it is certain—indeed infallible—if attended to as above.—Wm. G. Ward.

CHEAP AND GOOD GREENHOUSES.

In several nurseries there are now greenhouses erected on a novel principle, the most noticable feature being the system of glazing adopted, putty being entirely dispensed with. Mr. R. Wetherall, of Whetstone, has erected in this way four span-roofed greenhouses, each 150 ft. in length, and about 18 ft. wide. The sides of the houses are about 3 ft. 6 in. in height and are of timber, stout posts being placed into the ground a short distance apart sufficiently deep to ensure the requisite firmness and strength to carry the superstructure. Oak is the best of all timber for posts; the boards should be about 1 in. or 1½ in. in thickness; they should be rabbeted together, and secured to the posts with screws, which are better than nails, because it is easier to take the structure to pieces and remove it at any time. The ventilation required for the side of the houses can be easily provided by having one of the boards hinged and so arranged that the external atmosphere will come into contact with the hot-water pipes, and thus become warmed before it is diffused into the house. This hinged board can be allowed to lift up or drop down when opened as may be preferred; an iron button will be all that is required to keep the ventilator closed when air is not wanted. When expense is not a matter to be studied, of course these lifting, or rather movable, boards can be opened and shut by the well known crank system, by which plan much time is saved in ventilating. When the sides are completed, and the posts are sawn off to the requisite height, the plate that carries the roof should be put on and also attached to the supports with screws; indeed, no nails at all should be employed, and thus the structure is always portable. The roof itself of these houses is formed of rafters of stout deal quartering placed about every 5 ft. or 6 ft. apart, with ridge piece, precisely in the same manner as that adopted for ordinary span-roofed houses intended to be fitted with sashes. When this frame-work is constructed and screwed together, lighter pieces of timber are carried lengthwise throughout the roof, at distances of about 2 ft. apart; they are all well screwed together, and rabbeted so as to form a resting place for the glass. At distances of about 18 in. a groove or notch should be cut in the cross frame-work so that no water may lodge. Give, before placing on the glass, three good coats of paint, and when dry commence to glaze; the glass used should be of the best 21-oz. quality and 24 in. square is a good and useful size for each pane. Simply lay the squares on the framework without any lap, butting the edges close together. There is no fear of drip, the rabbet in the framework prevents the glass from slipping, and it only requires security from removal by the wind to complete the operation. This is done in Mr. Wetherall's houses by a metal button working on a screw attached to the frame-work, and when the pane of glass is laid in its place by simply turning the button round and placing a little strip of felt between the glass and the metal fastening; it is then held tightly in its place, and the felt is a safeguard against danger of breakage through the expansion and contraction of the iron button. If by any chance a square becomes broken, it is easily replaced in a few seconds by simply turning the button, taking away the damaged pane and replacing it by a new one in the manner described. The ventilators for the top of the house are constructed and made to open in the usual manner. These structures when finished have a very light appearance, and plants thrive admirably in them; therefore they are adapted to the requirements of any and every garden, but for nurserymen and growers for market they are the best that can be adopted, seeing that they are cheap, effective, and, above all, the landlord cannot claim them, because they are screwed together in every part, and a tenant at the expiration of the term of occupation can remove them.

H. B.

GLASSHOUSES AND FRAMES.

White Lilac.—We have lately cut this in great quantities, and of the purest white. We dig up large bushes, 8 ft. or 9 ft. high, of the common large-flowered purple kind, with good balls, and set them in corners of early Vineries and Peach houses. A temporary box of bricks is constructed for enclosing soil round their roots. They are kept syringed and watered, like other occupants of the houses, and, with the exception of the partial shade obtained from the Vine leaves, they have had all the light that there has been. The branches have been tied up to economise space, and thus bundled together they have looked like pillars of snow. Lilac produced in this way is preferable to that grown in darkness, as the foliage is of its natural colour, and in the case of flowers, even for table decoration, there is nothing like their own foliage for garnishing.—L. P. M.

The Sensitive Plant (Mimosa pudica.)—This is an interesting little annual, which may be grown by any one possessing a warm greenhouse. The seed may be sown at once in small pots, one seed in each, filled with fine, light, sandy soil, and placed in a warm house with a bell-glass over them, or a sheet of glass. If they can be placed in a little bottom heat all the better. When well up, and the pots are getting filled with roots, put them into 5 in. pots—a size which will be plenty large enough for them—using peat, sand, and light loam. The plants must not be syringed during the day, or the leaves will close at once. A well-grown plant affords amusement by its leaves closing immediately they are touched with the finger.—S.

Sensitive Plant (Mimosa pudica).

Covering bare walls in Ferneries.—Nothing adds more to the beauties of an indoor Fernery than well-covered walls of green verdure. No matter how choice the collection of Ferns, if the walls are bare, or, as often is the case, whitewashed, the fernery looks wanting. The following simple efficient covering, therefore, will be found to give entire satisfaction. Prepare a sufficient quantity of wooden pegs, 1 in. square, 4 inches long, tapered, wedge-shaped at one end. Begin at the top row of bricks in the wall, and at intervals of 18 inches make a hole with a chisel, and put in one of the pegs, again in the fourth row of bricks, and so place pegs in the wall over. Then get some wire netting, 2-in. mesh, sufficient to cover the wall. Begin at the bottom row of pegs, and, with some wire staples sold for the purpose, fasten your first length of netting. Have ready a quantity of rough Sphagnum Moss, also some rotten turf and lumpy peat mixed well together with a good addition of sand; the Sphagnum is to be first put inside the space left between the netting and the wall, filling in the back with the above compost, so that when finished the Sphagnum alone will be visible. When finished get some little plants

of the pretty Moss Selaginella denticulata, and prick in carefully a few inches apart over the whole of the Sphagnum. You may also add at the time of filling some small plants of any of the Maiden-hair Ferns, also Pteris serrulata, P. cretica albo lineata, or other small Ferns, all of which add to the beauties of the house. When finished, an occasional syringing with a fine rose until established is all that is requisite; and, as now is the best time of year for such work, you will soon be rewarded for your labours. I may mention this covering is equally adapted for the cool or warm fernery.—J. S.

Seedling Ferns.—Few plants are more serviceable than seedling Ferns, especially the Maiden-hairs and Pteris serrulata and longifolia, all of which are easily raised from seed. Where large specimens of these Ferns are grown, seedlings are usually found springing up abundantly on all moist surfaces, as the seed-spores are so light as to be carried and deposited over the whole house. If sown in pans, or on lumps of peat, the seed must not be covered, but merely shaken on the surface, which must be kept constantly moist. The seedlings also enjoy a humid, brisk atmosphere, but when required for decorative purposes they should be gradually inured to a cool and moderately dry atmosphere, so as to harden the fronds and render them capable of withstanding the fluctuations of temperature to which they are invariably exposed. In Covent Garden, Maiden-hair Ferns are in great request for these and other purposes. They are grown in small pots for the most part alone; but sometimes mixed with Tulips and other bulbous plants. Their fronds, too, in a cut state, are so much in demand that long, span-roofed houses are wholly devoted to their growth.—H.

Deutzia gracilis.—This charming little Japanese shrub might with propriety be called everybody's plant, as it will grow and flower under almost any sort of treatment, and it can be had in bloom from Christmas to midsummer. It is one of the most useful of plants for conservatory decoration, and also for furnishing cut flowers; and the cultivator may always depend on being well rewarded for any extra care which he may bestow on its cultivation. It strikes freely from cuttings taken from the young growth and put in thumb-pots in sand and leaf-soil in a temperature of 60° or 70°. As soon as rooted, they should be potted on into 3-in. pots and replaced in heat, and as soon as the roots have reached the sides of the pots they should be shifted into 5-in. pots, using a strong fibrous loam with a little clean coarse sand at each potting, making the soil firm. Keep the plants in a good moist heat till they have made their growth, when they require a drier atmosphere in which to ripen the young wood before they are turned out-of-doors. If this be not attended to, plants of it started in November and December will be a failure, through the blooms going blind at a time when flowers are of most value. When the growth is finished and well ripened, harden the plants off by degrees, and plunge the pots up to their rims in ashes in a sheltered situation well exposed to the sun. If any of the plants require larger pots, shift them before plunging them, as they force better than when it is left till they are taken into the forcing house. Plants required to be in bloom at Christmas should be started in an atmosphere of from 55° to 60° about November 20, and a few should be introduced into heat once a fortnight where a succession is required. For late blooming set the plants behind a north wall until they are required. When they are in growth and the pots are full of roots, supply them freely with liquid manure, and when in bloom keep them cool and shade them from the sun, in order to prolong the bloom. When the flowers have faded cut out all the old wood, allowing nothing to grow but the young shoots from the bottom, and as they advance in growth draw them towards the rim of the pot, so that when in bloom the flowers will hang gracefully over the side.—J. S.

Clematis indivisa.—This is a capital greenhouse climbing plant for supplying cut flowers, and in a light, airy house with a mean temperature of 55° its sprays of snow-white, star-like blossoms, opening early in spring when flowers are scarce, are most acceptable. Its foliage, too, is dark and glossy, and free from attacks of insects.—B.

GLOXINIAS AND THEIR CULTURE.

THESE are very easy to increase, either from seed or by cuttings; they are also easily grown, and most useful for decorating the stove or intermediate-house in the summer season, continuing to bloom more or less for a considerable period; while the flowers are very useful for cutting, and if placed in water they will last for several days, provided the plants have made their growth and produced their blooms in a thoroughly light and airy situation.

In raising Gloxinias from seed, it should be sown early in the spring, so as to allow the plants an opportunity of attaining a sufficient size, in order that they may flower during the summer in a way that will exhibit their true character; if sown about the middle of March they will have the requisite time. The seed should be sown in an ordinary pan with 1 in. of drainage at the bottom, on which place a little Sphagnum; the soil should consist of equal parts of loam, peat, and leaf-soil, all sifted; add to the whole one-sixth its bulk of sand, it being essential to have the material of a loose open nature, or the roots of the young seedlings will be injured in transplanting them; fill the pan with the soil to within ½ in. of the rim, pressing it down moderately firm; then water with a fine rose, so as to close up the surface, and on this sow the seeds, not too closely, or they will become crowded

Spotted Gloxinia.

and consequently drawn up before they are large enough to pot off; cover very lightly, and place in a temperature of 65°. As soon as the young plants appear, elevate them close up to the light, screen from the midday sun, and supply them with water, giving a little air during the day. When the leaves are 1 in. long, move singly into 3-in. pots, using soil similar to that in which the seeds were sown, and at once replace them near the light, raising the temperature as the days increase in length. By the end of June they will require shifting into 4-in. pots, using the soil without sifting, and should receive the treatment previously recommended. The best kinds should be marked for propagation and the inferior ones discarded. When the flowering is over, give them less water, discontinue shading, and admit more air, so as to ripen the growth. When the leaves have died down, the soil must be allowed to become quite dry, and be kept for the winter in a temperature of 50°—cooler than this is not safe for any length of time. They generally winter the best when the bulbs are allowed to remain in the soil and pots in which they have been grown; but as they become large and are in pots of a considerable size, this is not always convenient, in which case they should be stored in paper bags filled with dry sand to preserve them from the air, otherwise they shrivel, and thereby receive serious injury.

To give a succession of flowers through the summer a portion of the plants may be started about the middle of February, and a further supply in March; let the pots be proportionate to the size of the tubers—7 in. in diameter will be large enough for the second season. In potting just leave the crowns of the tubers on a a level with the surface of the soil, and immediately they are potted place them in a temperature of 60° at night and 5° or 10° warmer by day; if not put in heat as soon as potted, the roots will rot; the soil ought to be in a slightly moist state when used, and little water should be given until growth has commenced. Treat them throughout the season as recommended for the preceding summer as to heat, shade, air, light and moisture. As already pointed out, their satisfactory flowering will depend upon their receiving abundance of light; a shelf over a path within a few inches of the roof is the best place for them, for in such a situation not only do they get the requisite amount of light, but they also receive more air, both of which are so essential to short sturdy growth. This summer they will bloom well, and increase considerably in the size of their roots, yet it it is in the third and fourth years after sowing that they will make the finest display.

When the bulbs get large they may be divided, retaining to each portion some of the buds with which the crown is furnished; but the most general method of propagation, and by far the most expeditious, is by leaf-cuttings. If the leaves be taken off in the summer when fully matured with a portion of the leaf-stalks, and this portion inserted in 5-in. pots, drained and filled with half peat, or loam and sand, with ½ in. of sand on the top, and kept in a brisk heat slightly shaded, and the soil moist, they will form healthy bulbs before autumn; or, if the variety that is to be increased be scarce, several may be produced from single leaves by cutting through the midrib on the under side in four or five places, and laying the leaves flat down on the soil in pots or pans, prepared as above, but sufficiently wide to admit of their being so placed; over each place where the midrib has been severed secure the cut parts on the soil with a pebble about the size of a cockle, at which points bulbs will be formed, which when the top has decayed in the autumn will require to be wintered, and afterwards grown on in every way as recommended for the plants raised from seed.

An Elegant Palm (Cocos Weddelliana).—Where plants are in much request for table decoration, Palms are almost indispensable; and none are more light and elegant in appearance, or so well suited in every respect for the above purposes, as Cocos Weddelliana. Unfortunately, the majority of other kinds soon get too large for table embellishment; but by keeping these confined to 6-in. or 8-in. pots, they may be preserved in perfect health for at least a couple of years, if well supplied with water at the roots, of which at most times they enjoy rather liberal supplies. Areca lutescens is a Palm of remarkably graceful habit, and comes next in order of merit to the above, and as it will stand in a cool stove or moderately warm greenhouse, it is a very desirable variety to cultivate. The yellow stems of this show in pleasing contrast with its delicately pale-coloured leaves, and give the plant a very striking appearance. There is one advantage in growing Palms for table decoration, independent of their great beauty and general suitableness for the work, and that is, they are constantly increasing in value for other purposes, such as the decoration of conservatories, halls, &c., for which no plants are more suitable or better adapted in every respect. Cocos Weddelliana, when grown into a large specimen, makes a handsome object for a warm greenhouse or stove. The best soil for it is half peat and half turfy loam, with plenty of sand added; or it will grow fairly well in any ordinary good potting mould. Plenty of moisture overhead and at the roots, and a warm temperature, are its chief requirements, and it should be placed in a rather shady position.

Destroying the Gooseberry Caterpillar.—I find the Gooseberry caterpillar one of the easiest of pests to destroy. Every time it attacks my trees I dissolve 2 oz. of white Hellebore powder in a gallon of water, and apply it with a syringe in the evening after a fine day. —CLIFTON TERRACE.

ANSWERS TO QUERIES.

173.—**Sweet-scented Plants for a Greenhouse.**—We would plant some Tea Roses to be trained up the roof, which would give a succession of fragrant flowers. Violets may be potted in autumn, and placed under cover at the commencement of the winter. Narcissi and Hyacinths also, potted in the autumn, will afford fragrance in the spring months. There is also the Lemon-scented Verbena, and Musk and Mignonette may be sown, so as to come into flower at an early period. Triteleia uniflora, if potted in September, will bloom freely in early spring. It is delicately scented, but is not suitable for cutting, owing to the strong Garlic-like odour which the stems exhale when cut. Then there are Pinks, of which any admirable varieties exist, not omitting the old Clove Pink.—J. C. B.

1743.—**Culture of Kalosanthes.**—Pot off the cuttings at once into small pots in a compost of two-thirds turfy loam and one-third leaf-mould, keeping them rather close for a time until fairly established. Stop the points of the shoots, to induce a bushy formation, and shift when necessary into 4-in. pots, placing the plants in a sunny, well-ventilated position in the greenhouse. The Kalosanthes, being of a rather succulent nature, requires a considerable amount of solar heat to mature the wood, without which the flowerheads do not form. During the early part of September the plants will be benefited by full exposure to sun and air, wintering them in a cool greenhouse, and ventilating freely during the early spring months.—J. C. B.

1563.—**Growing Mushrooms in Cellars.**—The great secret of success in Mushroom culture consists in properly preparing the manure. Horse droppings are best, but should ordinary stable manure be used it should be turned over several times until the rank steam is evaporated, at the same time rejecting the littery matter. About 1 ft. of manure will suffice for use in cellars, and the beds may be made at any time during the year—that is to say, if the cellars are so situated that a cool equable temperature can be maintained in them during the hot summer months. A bottom-heat thermometer should be placed in the beds when made, and when it marks 70° to 80° the spawn may be put in.—B.

1571.—**Greenhouse in Town.**—The best plants for "V. P.'s" greenhouse would be, for spring and summer—Geraniums; Pelargoniums, zonal, show and fancy; Cinerarias, Calceolarias, and, as a rule, the older and some of the more robust varieties of Fuchsias; also Campanulas and Balsams. Ferns would do well in such a house, but only the more robust kinds, such as Asplenium bulbiferum, &c. For the winter Chinese Primulas, Chrysanthemums, Hyacinths, Tulips, Narcissus, &c., will be found to bloom freely. Nearly all these (except the bulbs, of course, which must be purchased) may be grown from seeds or cuttings, and with care will give good result; but in anything like a large house too hard-wooded or shrubby plants, such as Azaleas, Deutzias, &c., will succeed; the blooms are poorer and scantier every year. In the way of climbers a Passion-flower is the only thing I would recommend for such a situation.—R.

1626.—**Small Gardens near Towns.**—"Amateur" does not say whether he wishes to grow vegetables or flowers; but, supposing the latter to be desired, I append a list of bedding and foliaged plants, with their colours, that will do well almost anywhere if taken care of. For flowering plants—Geraniums, all colours; Calceolarias, yellow; *Verbenas, various colours; *Petunias, ditto; *Phlox Drummondii, ditto; *Indian Pinks, ditto; *Stocks and Asters in variety; and *Lobelias, blue. Foliage plants—*Amarantus melancholicus ruber, crimson leaves, very effective; Perilla nankensis, dark bronze; *Pyrethrum (golden feather), yellow; *Cineraria maritima or candidissima, silvery. These are nearly all that will be found to do well near a large town of this class. Among taller-growing things, suitable for mixed borders, Chrysanthemums, *Dahlias, Delphiniums, Hollyhocks, and Herbaceous Lobelias (tall) are the best; also Lilies, the hardier sorts, and *Iris. Those marked with an asterisk (*) may be found to do better or in more unfavourable situations than the others. In the way of climbers, Nasturtiums and Major Convolvulus are the best; and in annuals, Mignonette, Venus's Looking-glass, and Corn-flowers.—R.

1779.—**Culture of Statice Halfordi.**—Cuttings root readily in sandy peat in a warm pit, or under a bell-glass in a warm greenhouse. When potted into single pots keep close for a time till established, then move to an airy greenhouse, shifting into larger pots when required. They will grow in good peat or in equal parts of turfy loam and peat, adding some sand and crushed charcoal to keep the soil open. The plants require a good deal of water, therefore the pots must be well drained. Pick off the first blooms that show to ensure a fine head of bloom.—E. H.

1792.—**Soot and Lime for Crops.**—In most cases I should prefer the soot without the lime. Onions will be benefited by very heavy dressing of the former, given in showery weather. A bushel to the square rod will not be too much. It is best applied in a liquid form to Peas, except in cases where birds are troublesome, in spring; then a little soot dusted over the rows will make the Peas distasteful to the birds, and act as a stimulant to the plants. At the same time, soot and salt in combination is an excellent stimulant for Wheat, about fifty bushels per acre of the former to 3 cwt. of the latter, sown broadcast in spring.—E. H.

1777.—**Cucumbers not Growing.**—I do not think there is anything wrong in the management. We are all at times annoyed by matters turning out differently to what we expect; and often we experience the truth of the old adage, "The more haste the less speed." I always like to use new seeds for raising plants for early work; there is more vigour in them, and strength is everything in the short days. In the case under consideration I should expect to find either that old seeds had been used, or that the plants had received some check at some time or other, which has stunted them. A little thing does it early in the season—potting in cold soil, watering with cold water, or any little omission in some cultural detail—some oversight perhaps now forgotten.—H.

1774.—**Growing Herbs.**—For a good supply of fruit all the season plant a few roots in a warm, sunny place to come early, and a few roots in some cool position for use during hot weather. Mint is easily increased by separating the young shoots with a bit of root attached in spring, and planting in rows 6 in. or 8 in. apart. Thyme and Sage are best increased from cuttings in April, planted firmly with a dibble, to be watered and shaded for a time till they begin to grow. Make a new bed every year, as young plantations are the most reliable and stand the winter best. Sow Parsley now, and again in July; thin to 6 in. apart in August. Cut the largest leaves off a part of the crop to induce a new growth for winter. Plant a few roots in a warm spot for early use.—E. H.

1773.—**Plants for Screens.**—If a box or a border can be made outside the window—either to stand on the sill, if a box, or beneath, if a border—in either case creepers may be planted, trained up on each side of the window, and festooned across and allowed to hang down from the top. The Virginian Creeper, Clematis Jackmani, Canary Creeper, and Cobea scandens will make a good and cheap mixture. The two latter are summer creepers only. For winter, Ivies may be substituted. Another way, either in combination with a little light drapery outside or without, will be to have a few wire baskets made and filled with creeping or drooping plants, such as Campanulas, Sedums, Saxifrages, Tropæolums, Convolvuluses, Ivy-leaf Geraniums, &c.; the baskets to be hung from the top of the window, and the drooping growth to meet, or nearly so, the tops of the plants growing at the bottom of the window in pots or boxes in the usual way.—E.

1283.—**American Blackberries.**—I have seen no answer to the above, so I venture to offer my Canadian experience. I presume the querist means the Black Raspberry or Thimbleberry (Rubus occidentalis), as the American Blackberry (R. villosus) is almost identical with our own, and is not cultivated. The fruit of the Thimbleberry is abundant, and equal in flavour to the Red Raspberry; but it is much less juicy, the drooplets being so small. This might be corrected by cultivation; but I do not think it would answer in England, as the rampant growth would require a larger space than most gardens could afford; and I doubt whether the fruit would ripen well without the forcing heat of an American July.—Junia.

1747.—**Shrubs for Various Positions.**—I am afraid I scarcely understand the whole purport of "Wanderer's" question; but we will suppose he requires a few good shrubs for a shrubbery. The background.—There is plenty of choice among the smaller kinds of Coniferæ, the various forms of Cypress, Juniper, and Yew. If larger forms are admissible, the Deodar Cedar, Cryptomeria japonica, and Wellingtonia will suit. Among deciduous plants of rather large growth are Thorn, Laburnum, the Catalpa, Weeping Birch, Magnolias, and a host of others. Next may come Hollies—a host in themselves—Evergreen Oaks, Portugal Laurels, Boxes, a large family; and among flowering shrubs Lilacs, Guelder Rose, Syringas, and flowering Currants. Then, for the front, there are Rhododendrons, Berberries, Daphnes, Laurustinuses, Aucubas, Heaths, Azaleas, Pernet-

Cocos Weddelliana

tias, Spiræas, &c. I think "Wanderer's" difficulty would be met in most instances if he were to make a confidant of his nurseryman. We will say he requires a plant for a position that must, when fully grown, be no more than 10 ft. high. Any respectable man would, if on or near the spot, advise him what to plant, at the same time taking into consideration the climate and soil, as mistakes are often made in this respect. An interesting way of arranging shrubberies would be to group them according to families, not, as a botanist would do, but for effect, taking the best forms in each class only. Here we might say, for example, have a plantation of Hollies; elsewhere a bed of Berberries; then a mass of Spiræas, Magnolias, Thorns, and so on, giving each plant space to show its true character. Between those character groups might come in mixtures to heighten their effect. The Conifers, of course, would enter largely into any arrangement of the kind. Thus we might have groups of Cypress, Retinospora, &c.; only the dark, gloomy plants should, I think, be in contrast with the lighter and more cheerful colours of variegated Holly and deciduous plants.—E. H.

1715.—**How to Make a Garden Pay.**—Although the books mentioned in the question are doubtless unreliable, yet it should be understood that all books written specially to enforce garden facts are not to be read strictly in a literal sense, but rather as pointing out the direction in which learners and novices should go. Thus, statements as to prices of materials and payments for labour may be correct of one locality and wrong in another; but they must be read as indicative rather than as exact. Having an acre of ground, which it is desirable should be made to pay, considerations, such as the following enter: Is it proposed to market the produce, and if so, how convenient or otherwise is the market? Then, at what price can manure be purchased? as without a liberal supply of manure, the land being poor, the labour of cultivation would be largely in vain. Then, what is the local price of labour, and what is the rent and rate charges? All these things vary locally, and all must be understood and reckoned before the question of paying can be decided. The chief elements of success will be found in plenty of manure dressing, good and deep cultivation, and the growth of such crops as the soil may be specially adapted for. One man may cultivate an acre of ground into the highest possible condition, and profitably, if he grows some flower roots for sale, bush fruits, Strawberries, choice vegetables, early Potatoes, Marrows, Cucumbers in frames, and similar things, that cannot be produced except where there is considerable outlay of labour and incessant attention. All such things will command double the price paid for products grown under ordinary market garden culture. Capital and energy well directed may make a success out of only an acre of ground.—A. D.

1736.—**Potatoes for Exhibition.**—Good cultivation has usually more to do with the production of handsome samples of Potatoes than mixtures; but those who have stiff, close soils are at a disadvantage when in competition with those who have a nice light friable soil of good quality. To bring stiff soils into suitable condition for Potato cultivation, it is well to throw up into sharp ridges early in the winter, not less than 3 ft. in width. Early in the spring lay into the furrows a moderate dressing of fresh stable manure and fork in deeply. About the end of March add, if to be had, a dressing of wood-ashes, or pounded charcoal, or soot, and with it some good artificial manure, all of which fork in again very lightly; and, drawing a shallow drill with a hoe, plant the sets, earthing over by covering with a fork sufficiently to bury the sets about 4 in., and fork down the intervening spaces when convenient, so as to have the soil as fine as possible for earthing. There are also in the growth of Potatoes for exhibition such important features as the selection of sorts, preparation of sets, best times for planting and lifting, selection of show samples, care of them after lifting, and many other points that growers should have at their fingers' ends. It may be of interest to say that having during the past winter had a large piece of exhausted Strawberry plants growing on very stiff soil trenched in, we are now preparing to plant by having shallow furrows thrown out, and in these shall place the sets, and employ as dressing, as an important trial, malt-dust, Amies' manure, Clay's fertiliser, and two kinds of Hill's manure for Potatoes; and we look for some very interesting results.—A. D.

1789.—**Blue Flower for North Aspect.**—We know of nothing better than Blue Lobelia. The seed, must, however, be sown under glass. In a window would do, covering the pot with a pane of glass, and shading until the plants are above ground. For another season we would, however, recommend the varieties of Viola cornuta, the seed of which may be sown in August, planting out the following March. This is a hardy perennial of dwarf habit, flowering continually throughout the summer, and would probably succeed better than most summer-flowering plants in such a sun secluded situation.—B.

1727.—**Cats in Gardens.**—You must catch them, and drown them as fast as you catch them. Have a large trap made with a falling door at each end, and bait it with valerian. You will catch one every night.—MAJOR.

1771.—**Lawn Tennis Court.**—Take up the turf, level the ground (or at least reduce the incline as much as possible), make it firm by ramming or otherwise; spread over the firm surface 1 in. or so of sifted coal-ashes, and on this lay the turf. The coal-ashes will keep out worms, and tend to make the turf finer and thicker. It should be 100 ft. long, and 80 ft. wide.—E. H.

1772.—**Uses of Sulphate of Ammonia.**—Sulphate of ammonia is a white crystallized substance, and may be used in a liquid form—about 1 oz. to 4 gals. of water—and given to growing crops; or it may be sprinkled over the beds at the rate of 2 lb. to the square rod or perch in spring.—E. H.

1778.—**A Good Winter Vegetable.**—To obtain large white Leeks, treat them as Celery plants are treated; that is, sow a few seeds in a gentle hotbed at once; prick off as soon as large enough, and plant out finally in trenches when the plants are strong. The plants may be 1 ft. apart in the trenches; earth up to blanch as required. For ordinary use very good results are obtained by sowing this month in the open air, and transplanting into the trenches when the plants are large enough.—E. H.

1790.—**Budding Plum Stocks.**—Graft the Plum stocks where they now are, and move them in the autumn. Apples will not come to perfection grafted on Plum suckers.—E. H.

1742.—**Fern Cases.**—Isolepis gracilis or any of the free-growing Selaginellas, such as Martensi, serpens, or the true denticulata, would produce an excellent effect in a basket. Selaginella cæsia arborea is a beautiful climbing mass; and Lygodium scandens is a pretty Fern of climbing habit.—C.

1716.—**Packing Trees for a Voyage.**—The best time for packing the trees would be in the autumn, when the leaves are fallen. We would, however, advise you to get them packed by a nursery firm accustomed to that kind of work.—J. C.

1740.—**Treatment of Dracænas.**—When a foliage plant has gone bad it is difficult to reinstate it in health. All that can be done is—sponge the leaves frequently, water carefully (that is, allowing the soil to dry out, and then giving enough water to thoroughly moisten it), and admit air on favourable occasions.—J. C.

1741.—**Last Year's Seeds.**—If the seeds in question have been kept in a dry, cool place they will germinate very well, perhaps better even than those saved during the past summer, which was generally so unfavourable to the production of well-matured seeds.—J. C.

1730.—**Pruning Roses.**—In order to induce the trees to flower freely at the close of the summer, they should be liberally treated during the summer months. By frequently and copiously watering in hot weather with liquid manure, a succession of good blooms will be maintained. The foliage should also be freely syringed after hot days. Pruning, if not completed, should be done at once.—J. C.

1719.—**New Zealand Flax** (Phormium tenax).—Sow now in well-drained pans of sandy loam and leaf-mould. Cover the pan with a pane of glass, place in a warm house, and shade from the hot sun. Or the seed may be sown in May in a cold frame.—C.

1718.—**Nitrate for Plants.**—The proper way to use this is as a top-dressing, sprinkling a little on the surface soil around the plants, choosing a rainy period for the operation.—C. B.

1752.—**Clematises for Bedding.**—Clematises may be safely planted during the next three weeks. The soil should be deeply dug and well manured. Begin in the centre with a single plant, around which the remaining plants may be set in circles 18 in. apart, and the same distance from plant to plant, placing them alternately. Water freely in dry weather. Lanuginosa candida and L. nivea (white); Jackmani and rubro-violacea (purple); Lady Bovill (blue); and viticella rubra grandiflora (claret-red).—C.

1738.—**Climbers for Walls.**—Your Magnolia was probably the shy-flowering variety. We would procure a plant of the Exmouth variety, which flowers in a young state. There is also Ampelopsis Veitchi (so beautiful in the autumn), Clematises, and Cotoneaster microphylla.—J. C. B.

1567.—**Worms in Gardens.**—Take 1 quart of fresh slaked lime, and put it into 6 gallons of water; stir it well; then let it stand till quite clear. Roll the lawn or walk, or beat the ground gently with the spade; this should be done in the morning. Then leave it till the next morning; this will give the worms time to come and clear the mouths of their hole. They being then near the surface, take a watering-can with a rose on, and draw off the lime-water quite clear, and water the ground; the worms will all come out on the surface directly; then sweep them up, and do what you like with them.—J. SEAGRAVE.

1414.—**Best Sorts of Willows.**—Some of the best kinds of Willow are—Salex viminalis, rods 9 ft. to 12 ft. long; Salex vitellina, yellowish bark, rods 3 ft. to 6 ft. long (this is the best kind for garden work); Salex rubra, reddish colour, rods 4 ft. to 6 ft. long. Make cuttings in spring; the wood may be either one or two years old the cuttings to be about the thickness of a man's finger and 1 ft. long. Plant in rows 12 in. to 16 in. apart, and 8 in. to 12 in. between the cuttings. Drive the cuttings deeply into the ground, leaving not more than 1 in. of the cutting above the surface; the plants in one row to be opposite the spaces in the rows on either side of it.—OMBRI.

1717.—**Rhododendron Leaves Going Brown.** Transplanted Rhododendrons have in many instances suffered this winter. The plants in question will probably make healthy growth this season, if attended to in the way of watering. We would not prune them.—C.

1862.—**Coronilla glauca.**—*Bot.*—You probably mean this plant. You can make the plants more bushy by placing a stake in the centre of each, and tying the shoots in to it. In May the plants may be planted out in a sunny border in a rich soil; and if lifted autumn will make fine plants for winter blooming.

1863.—**Propagating Yuccas.**—I have Yucca, from the root of which two small ones have sprung up. What should I do with these?—F. A. [Let them grow for another month or so, then partly sever them from the parent plant, and earth fine soil round the root. Keep this soil moist, and they may root into it. At August completely sever them from the parent plant, and in a week or two after pot them and place them in a shady place till established.]

1864.—**Propagating Frame.**—I have propagating frame heated by pipes passing through cemented cistern filled with water; the cistern is covered with slates. I have put 6 in. of cocoa-nut-fibre part of the slates, and on the other part 1 in. of sand. The water in the cistern can be raised to a temperature 120°; the slates also attain nearly the same, but the heat will neither rise through the cocoa-nut fibre nor sand; consequently the temperature in upper part of frame is never above 60°. Both cuttings and seeds are doing badly. Please tell me the cause and remedy, as, when I put up the place, I thought anything would strike with the greatest facility.—K. [One of the pipes would pass round or along the front of the frame to apply top-heat.]

1865.—**Crops Under Orchard Trees.**—What is the best crop to grow under standard Apples, which are 16 ft. apart? Will Currants, Gooseberries, dwarf Plums or Cherries, or vegetables answer?—J. [If the trees are not too large, Gooseberries and Cats will do well; so will Rhubarb, Brussels Sprouts, Kales, &c. Morello Cherries would also do, and apples dwarf Plums; also Nuts.]

1866.—**Pelargoniums and Cacti.**—What kind of soil would be the best for Pelargoniums Cacti, and what is the best aspect for them?—HENRY. [Sandy loam and decayed cow manure for Pelaums; and sandy loam and old mortar-rubbish for C Pelargoniums want a light, sunny, and airy posit Cacti will do nearly anywhere.]

1867.—**Bulbs after Flowering.**—Will be better to leave Tulips, Snowdrops, Crocuses, Hyahs, &c., in the ground, or take them up and plare them in the autumn?—ANN. [Leave them in the gro]

1868.—**Tuberoses Out-of-doors.**—Will Tuberoses grow without heat?—W. A. R. [Yes, in a frame or greenhouse. Out-of-doors they will grow the flowers will not be open before cold weather set

1869.—**Pruning Eschallonias.**—Is a fine Eschallonia rubra, which flowered incely all last summer; it is much cut up by frost, is shooting again from the larger branches. Shoube cut back? how much? and when?—JUNIA. [Aflowering you might prune it so as to make the bushy and shapely.]

1870.—**Celery for Seed.**—I have two roots of Celery for seed; how must I treat th—A NOVICE. [Plant them in good soil, and keep thell watered. Do not earth them up.]

1871.—**Gooseberries Throwing Suckers.**—My Gooseberry trees send up a numbshoots from the roots, spoiling the appearance of thes. What is the cause and what the remedy?—A RY VICAR. [The cause is difficult to ascertain. Fo among the trees will sometimes cause it. The remeo cut them out.]

1872.—**Permanent Bulbs.**—I havting now in my garden Lilies of various sorts—Nus, Crown Imperials, Tulips, Hyacinths, Crocus, s, English and Spanish Irises. I wish to have as is possible permanently in the ground, to save trou which is it absolutely necessary to take up after flg?—BULBOUS. [None of the bulbs named ought taken up. Give them a mulching of rotten manure imer and a coat of ashes in winter, and all will be w

Soot and Lime for Onions.—*J.*—These help to kill grubs in Onion beds. If put efore the Onions are sown, all the better; but a litt may be applied after the Onions are even above d. Lime is not so good as a little salt.

C. Andrews.—You may pluck the bud fr aréchal Niel Rose without in any way injuring th. Send your volume of GARDENING to our office nding—price 3s.

Pipes for Greenhouse.—*Dundee.*—See advertising columns.

Bedding Plants in Pots.—*J. M. A* aniums always flower better when planted in the n pots than when turned out. The size of the is immaterial.

Perennial Phloxes.—*C. M. H.*—See NING, March 6th, 1880.

W. S., Belvedere.—Send us a bit of the pl

QUERIES.

1873.—**Lilies in Windows.**—Having received some bulbs of the hardy Japanese Lily, and not knowing the best way to manage them, I should be obliged by a few hints on the subject. Also whether they are fit for pot culture in a room facing east, and the best means of propagating them.—PHŒBUS.

1874.—**Cesspools in Gardens.**—In my garden are two cesspools—one for the house drains and one for the water from the baths, pantry, and scullery. I shall be obliged if some one will tell me how I may best utilise the contents of these in the garden. I must keep them emptied somehow, as the subsoil is clay, and nothing will soak away. I have no stable, and manure is expensive, so I shall be glad, if possible, to use the contents instead. I should like also to know the best plan of disposing of the cut Grass, &c., during the summer, so as to make it useful, and yet not to have an untidy rubbish heap. The soil of the garden is a good loam.—COUNTRY VICAR.

1875.—**Keeping a Window Gay.**—I have a sunny bay-window not far from London, which I wish to keep as gay as possible throughout the year. I have an unheated frame, but it gets very little sun. Will any one tell me what plants to grow?—W.

1876.—**Plants for Small Greenhouse.**—Will some one give me a short list of the most suitable hard-wooded and soft-wooded plants for a small house 15 ft. long, to be heated in winter by one of Gillingham's generators? Also, if not too much trouble, the names and number of greenhouse climbers suitable for the above?—G. P.

1877.—**Gardenias.**—What treatment do these require to grow them well?—AMATEUR.

1878.—**How to Grow Aconites.**—Can any one tell me how to grow Aconites?—MONTE CHRISTO.

1879.—**Propagating Aralia Sieboldi.**—How can I propagate this plant?—BOT.

1880.—**Camellias from Seed.**—I have upon two occasions sown Camellia seeds, but none ever came up. I am about to repeat the experiment this year; will some one inform me what should be done to ensure success?—O. G. K. Y.

1881.—**Plants for Baskets.**—I have nine hanging wire baskets. Will some one inform me what seeds I had better obtain, so that I can have a good display in them this summer; they will be hung in a glass passage.—NELSON.

1882.—**Unheated Greenhouses.**—Under this head a very useful article appeared in No. 51 of GARDENING. Will Mr. Grieve, the writer of it, kindly inform us if his pipes, placed quite flat, as he says, for the whole length of 18 ft., will not be a failure as regards the smoke passing freely up them? or, more strictly speaking, will not the draught be very imperfect? I am about trying it.—A. W. G.

1883.—**Rose Leaves Spotted.**—Can anyone tell me the reason why the leaves of my Maréchal Niel Rose in the greenhouse have become suddenly covered with large brown spots?—PINK MAY.

1884.—**Propagating Bouvardias.**—How can I propagate scarlet and white Bouvardias; and what treatment should they have now they have done flowering.—PINK MAY.

1885.—**The May-flower** (Epigæa repens).—The late Mr. Masters, of Canterbury, told me he had once had the May-flower, but had lost it, and that it was very difficult, almost impossible, to grow it in England. I was not, however, discouraged, but have beeen unable to procure it anywhere, and should be glad if any of your correspondents could tell me where it is to be had.—JUNIA.

1886.—**Hardy Annuals, &c.**—I want to know the name of about a dozen hardy annuals that I can sow now in pots and outdoor in a very small back garden (in a town), having only three to four hours' sun, from 9 a.m. to 1 p.m., that will flower the best, the most, and the longest during the year, and that I can cut bunches of flowers from in the summer and autumn. Of course, the pots can have the sun in the window for five or six hours from mid-day.—P. M. C.

1887.—**Water in Aquaria Turning Green.**—I have three small plants of the Cape Pond weed and a small Arum Lily growing in an inverted bell-glass for some time. The water has been changed occasionally, and the plants have grown well. About a fortnight since a slimy greenish substance appeared on the water and on the stems. How can this be obviated?—T. B. M.

1888.—**Blooms Falling off Roses.**—I have a Maréchal Niel Rose tree in a 12-in. pot in a greenhouse trained to the wall. There has been a many buds on which have partly opened, then dropped and died off: the tree itself appears healthy enough, and has made a deal of new wood. Can any reader tell me the cause of this?—S. E.

1889.—**Cones on the Deodar.**—Have any of your readers noticed cones on the Deodar this year? Ours has had several, which we believe to be an unusual circumstance.—M. W.

1890.—**Clematis from Seed.**—Can any reader give me any hints on growing Clematis from seed?—A. B.

1891.—**Cobea scandens from Seed.**—I grow this from seed and get nice plants, but they never flower, and they die in the winter. I grow them in a greenhouse heated by a flue. How can I make them bloom?—A. B.

1892.—**A Trap for Birds.**—Could any one suggest a way of making an inexpensive bird-trap, by which I may preserve the birds for stuffing? I do not like gins.—LOCO.

1893.—**Management of Fern Case.**—I have a large earthenware Fern stand or case covered with a glass that fits it very tightly. I have had it filled at a nursery with choice Ferns, and would be glad to know the proper management of Ferns in such cases.—J.

1894.—**Cyclamens and Cacti Blooming.**—What should be done with these when they have done blooming?—G. B.

1895.—**Green Flower Pots.**—Is there any way of restoring the colour of and removing the stains from garden-pots? I have not found scrubbing of any use.—G. B.

1896.—**Narcissi Failing.**—I potted some bulbs of Polyanthus Narcissus in the autumn, at the same time and in the same manner as some Hyacinths. The latter all came up and are blooming beautifully, but all of the Narcissi except one have failed. They have made no roots, and have decayed in the pots. They were all plunged in ashes until the spikes came up, and were treated, as directed, exactly like Hyacinths. What is the cause of their failure? They had begun to grow out rather before they were potted.—A HARMLESS BULLFINCH.

1897.—**Cucumbers on a Landing.**—I have a recess from the half-landing of my house facing the sun. It has a glass roof, glass front, and one side glass and one brick; it is open to the house; the dimensions are as follows—height 8 ft., width 7 ft., and 3 ft. 6in. deep. Would any one inform me if I can grow Cucumbers in such a place, and what size pot I should require; also the sort that would do best? I presume the shoots would have to be trained on wires up and across. Also the time for planting, and soil, &c.—A. J.

1898.—**Camellia in Open Air.**—I have a Camellia in my garden which has stood the winter without any protection. It looks in a very forlorn condition, but it is not dead. Can I do anything to save its life?—LEICESTERSHIRE.

1899.—**Plants for Lancashire.**—Will any reader inform me what plant or seeds will suit and live in Lancashire, about half a mile from large blast furnaces, from which the wind brings gas and sulphur, which is poisonous? I have had Rhodendron and ordinary white Rose trees, but they are dying gradually. Also, what seeds are the most hardy ones, for flowering in the open garden this year? When am I to sow the seeds; or will plants do best? What kind of shrubs are likely to stand this climate and gas?—H. A.

1900.—**Cats in Gardens.**—My small garden is damaged by the visits of cats. I have heard that essence of Valerian is very attractive to them. As I have a number of plants of this growing here, would this be one of the reasons for there fondness for scampering over my beds? Would any one say if they know of any plant to which they take special objection?—H. P. S.

BEES.

Starting Beekeeping.—If you are going to have a swarm it would be advisable to have it as soon as hived, which would probably be about the end of May or early in June. You would get the most honey by slinging. There is a great variety of hives; I should advise a bar frame. The bees would require feeding on their arrival, and afterwards if the weather was bad. Nearly any situation would suit them excepting being shaded entirely from the sun, as they would be under a wall facing the north. They should be packed in a box with lid of perforated zinc. An average stock would produce 30 lbs. of honey at least in a good year and good district.—E. W.

—— It is usually considered the best plan to get in stocks of bees in the late autumn in preference to the spring, as the bees get more accustomed to the new locality ere the active spring season comes; but if not so obtained, then the sooner now the better. Whatever kind of hive the bees may be in when sent on a journey there should be a piece of perforated zinc fixed securely over the entrance hole, and then the hive with its floor-board may be packed into a case, not too close fitting, but secure; or some strips may be fixed with screws to the floor-board, and from these others carried crosswise over the top of the hive, all firmly screwed; and this will enable the hive to be carried any distance in perfect safety. The simplest hives are the straw skeps so commonly used, and these are most suitable for novices. It is only practised hands who can safely employ the bar-frame and other patent hives. The floor-board should be of Elm, and instead of cutting the straw of the hive a groove about ⅛ in. deep and 1½ in. in width should be cut in the board, gradually deepening outwards. This throws off all rain or other moisture. In the top of the hive should be a hole 2 in. across, over which should be placed the straw super which is usually put on after the first swarm has come out. Into this super the bees convey their honey, and when that is removed in the autumn it is well to let the insects have what honey is left in the hive for their winter's sustenance; but if there is not enough, then feeding with properly-made syrup from a bottle inverted over the hole at the top must take place. It may be cheaper to take the honey and feed up again, but it is not quite the proper thing to do, and the gain is doubtful. As to produce, a strong stock in a good season may give from 15 lbs. to 20 lbs. of honey, but all this depends upon so many local conditions that it is impossible to give an exact estimate.—A. D.

AQUARIA.

HOW TO MAKE AND STOCK AN AQUARIUM.

AFTER I got my aquarium from the tinsmith (for it is made of tin, for lightness), I gave it two coats of white paint inside and out. When it was dry, I got my glass cut to the size required, which is 22½ in. long, 14½ in. high, and 14 in. broad, without the stand (which is made of wood). The glass I bought was 21 oz. to the foot; 32 oz. might be used. I then thought that white lead made into a soft putty must be better than red lead and other materials commonly used, and have found it better for the purpose. In bedding the glass into the frame, I put it as close up to the frame as possible; to do so, the glass should be quite flat, and cut to meet at the edges and no more. After this I let it stand to dry for two or three weeks. I then cleaned the glass, and painted the tin and wood outside with two more coats of white paint, and then finished with two coats of enamel white varnish, and after gilding the four top corners it was ready for use.

To keep the dust out I got an ordinary stretching frame made to rest on the top of corners, and covered it with very open muslin, with edging round like an awning; and the aquarium, now standing on a level with the eye when sitting, looks very well indeed. I then made my rockery of petrified Moss—a very light rock found round all ponds in the country (as light as pumice stone), in pieces as big as my hand; which I fastened together with Portland cement round a piece of wire, and bent to the size of the rock I required, making a passage through the rock both ways. With a little patience and taste you can make a very pretty rockery with the above (but virgin cork I think, would never do). I built my rockery on a roofing slate to make it stand firm. I then got some very small gravel, washed it and boiled it, and washed it after it was boiled to purify it, and put it round the rock all over the bottom 2 in. deep to set the plants in. As to a fountain, if you wish to keep your fish alive, you must not have one at all, as the plants and snails keep the water clean, while fresh water kills the fish.

As to stocking an aquarium, I think the best plants are Vallisneria spiralis and the Anacharis; but the first mentioned look the best, and grows the fastest, and accordingly gives the most vegetable matter and oxygen to the water. I would have, for an aquarium 36 in. by 12 in. by 14 in., three dozen trumpet snails and one dozen pladden snails, for they are the scavengers, and keep the plants clean. Then as to fish, for such an aquarium as "Mellgate" intends to have, I would put in thirty gold-fish and ten minnows, and no others. For the quantity of plants I would recommend four dozen plants of Vallisnera set in rows of four together. The above is about what I have in mine and it looks very well. It must be shaded when the sun shines on it.

H. G. SUNDERLAND.

POULTRY.

Serious Loss of Fowls.—I have lost seventeen fancy fowls, and no one can tell me the cause. Six died one day and eleven the next. Some moped for a few hours before their death, and others were ill only half-an-hour before they died. In each case their intestines and egg organs came out and occasioned much suffering, and ultimately the death of the bird. I have had them analysed for poison by Dr. Lapper, analyst, but none has been found. Their food was pollard, oats, bran, potatoes, and Indian meal, besides greens and household scraps. There was lime for building in the yard where they were kept, but I should not think eating it caused death, as these were healthy fowls where they were bought.—N. S. DURRANT.

Weight of Eggs.—Poultry-keepers are fond of telling the number of eggs laid to them by their fowls during the year, and taking credit for so much profit resulting from them. As I have always kept my fowls for pleasure and the particular gratification of having bonâ fide new-laid eggs for my own table, or a nice chicken when wanted that could be guaranteed tender, I have never entered into any pecuniary estimate of profit and loss. But it is evident there are eggs, and eggs. I have just weighed several

from my own fowls, mostly half-bred Dorkings, and find they vary in weight from 2½, 2¼, 2 and 1¾ oz., there thus being a difference of just ¾ oz. between the smallest and the largest. Perhaps the fairest estimate of egg produce per annum would be found in the weight of the total, and not in the number, as the hens that lay the most eggs may also lay the smallest ones.—H. D.

Houdan Fowls.—I can bear testimony to the excellence of these fowls, both as layers and for the table. I have kept many sorts, and made as much as £65 in one year; but I certainly prefer Houdans. They are essentially non-sitters. Ours laid last year from early in February until the last week in August, the eggs being very fine and of an excellent flavour; while for table I consider the chickens equal to Dorking.—E. W.

Fowls Paralysed.—My fowls get partly paralysed in their legs. Can any one tell me the reason and remedy for it.—BELMONT.

Eggs for Hatching.—I have two black Spanish fowls—a cock and a hen, about ten months old. Will the eggs from the hen be fit for hatching, or are the birds too young?—E. S. W.

Fowls' Claw-nails Coming off.—I have a young black Spanish cock, about six months old, whose claw nails all went black, and subsequently rotted off. Will the nails grow again?—J. SICE.

Leghorn Fowls.—I should be glad if anyone could give me a little information about Leghorn fowls, as I thought of getting a few. Will they stand confinement well? Are they hardy, good layers, and non-sitters, and are the white or brown ones best?—NEW-LAID.

Pale-yolked Eggs.—I keep about twenty fowls; half of them are Black Hamburgh, and the others cross-bred. They seem in good health, and lay fairly well, but the yolks of the eggs are very pale. Will any one kindly tell me the cause and remedy?—B. H.

Fowls Plucking Each Other.—Can any reader tell me how to prevent fowls from pecking the feathers off each other and swallowing them? They commenced doing so about a month ago, and now they have but very few feathers left on their bodies and necks. Since they have been in that state they have laid but few eggs.—H. J. W.

HOTBED FOR RAISING SEEDS.

THE annexed illustration represents a hotbed or heated frame which I have in my greenhouse, and which I found very useful for raising seeds and cuttings.

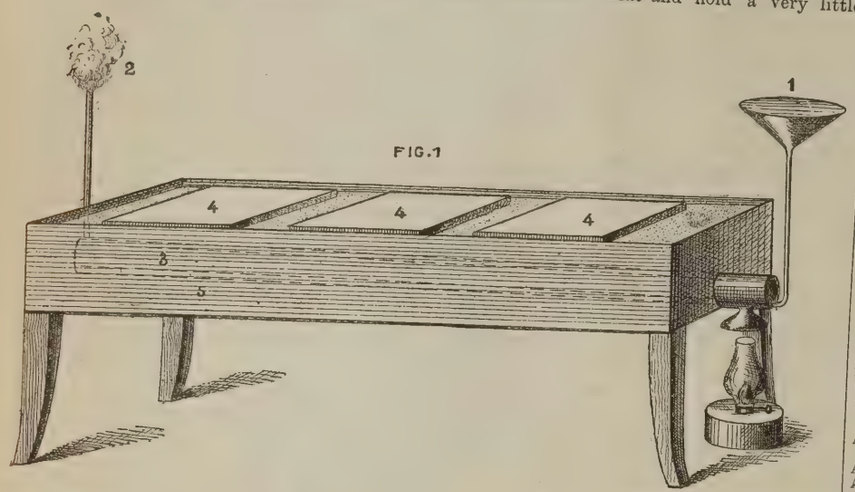


FIG. 1

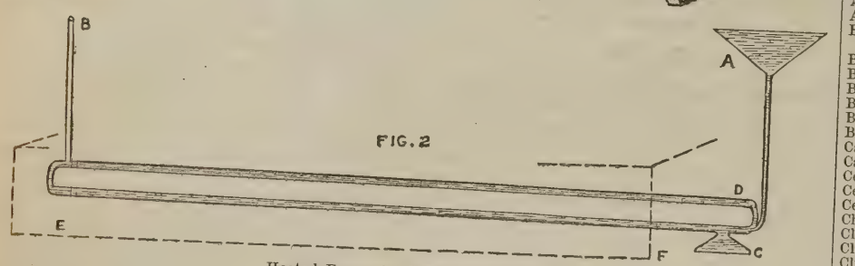


FIG. 2

Heated Frame for Seeds and Cuttings.

Length of Pipe D, made of zinc, 48 in.; diameter of pipe (outer one) 4½ in.; diameter of pipe, (inner one) 3¾ in. Cistern (A) to hold about one gill or so, and to be about the height of the top of the box; or it need only be a few inches above the pipe D. Air-pipe (B) must be about 2 in. higher than cistern (A).; the little boiler (C) about the size of an inverted tea-saucer.; length of box 44 in., depth 10 in., width 10 in. The lamp should have a glass or tin chimney, and the wick, if 1¼ in. or 1½ in. wide, will make the water very hot. The pipe D should be 1 in. higher at E than F, as the hot water will rise to the highest point. Put Cocoa-nut fibre in the box to cover the pipe about 1 in. or so, and keep moist; also cover the box with glass to keep in the moisture. The dimensions need not be exactly as I have given them, but could be made suitable to the space where it is to be fixed. The idea of the inner pipe is so that the outer one will have a good surface of heat and hold a very little water; and when the water is once hot it will require but a small flame to keep it so.

A Cheap Hotbed for Raising Cucumbers.—I procured an ordinary bloater box, filled it with Cocoa-nut fibre, into which I plunged my pots with one seed in each. I covered the box with a sheet of glass, and placed it on a sheet of tin on the stage of my greenhouse, the stage being composed of pantile laths 2 in. apart. I have a stove with 1½-in. burner, which I place underneath the box; the lid of the stove removed gives sufficient heat to raise the young plants in four days and nights. An ordinary 1s. lamp would answer the same purpose, but requires filling oftener.—BROCKLESBY.

Law respecting Greenhouses.—I regret to have to inform you and your readers that in a case tried to-day (March 23) in the Worship Street Police Court the sitting magistrate decided diametrically opposite to the decision in the Clerkenwell Court quoted in your issue of December 20, 1879. I was summoned for "constructing the enclosing walls below the sashes of less thickness than required by the 1st schedule, and without the damp course required by By-law No. 2." I took my stand on cap. vi., part i., par. 14: "All party fence walls are exempt." The magistrate referred to interpretation of terms for "party fence walls," and finding no definition of same, held that "party fence walls" only meant walls separating one ownership from another. I maintained that "party fence walls" mean any fence or wall intended to include, exclude, or part off anything, and not to act as a support. My greenhouse, 12 ft. by 10 ft., being constructed of a self-supporting frame, consisting of doors, windows, and sashes, I therefore contended that the filling up with bricks and cement did not constitute a wall within the meaning of the act, or that, at any rate, if a wall at all, it was simply a party fence wall, and as such exempt. The case has been adjourned for three weeks; and having, in the interests of the gardening world, asked the magistrate to grant me a case, I would suggest that joint action should be taken, and shall be glad to hear from any of your readers who may feel disposed to assist me in trying the question in a superior court.—UPFIELD GREEN.

Garden Labels.—At this season of the year, when a great number of labels are required for seed-pans, boxes, cuttings, &c., amateurs who do not wish to buy can most easily make them out of the top and bottom sides of an old band-box; fifty to one hundred, according to size, can be cut, with a strong pair of scissors, out of one top and bottom. The paper can easily be removed by soaking in water, and if a little white paint be rubbed on them the names may be written with a carbon or "solid ink" pencil. —THRIFT.

Solanums and Mice.—Mice have a particular fondness for the berries of the Solanum, but as soon as their depredations are discovered I have checked them in the case of standard plants by putting a collar made of cardboard half-way up the stem, beyond which they could not pass. In the case of bush plants the simple expedient of placing them upon inverted pots, so as to elevate them several inches above the pots of the surrounding plants, proved to be an effectual bar to their incursions. Of course traps were not neglected. The old figure 4 trap is one of the best in my experience, and it can be made in five minutes or so.—A.

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We shall be greatly obliged to any readers who call the attention of cottagers and working men to the aid which all who cultivate their own gardens may derive from the numerous articles, notes, and answers, in this journal. No periodical ever published contains so much purely practical and trustworthy information on the art of gardening.

GARDENING
ILLUSTRATED.

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FINE-LEAVED HOTHOUSE PLANTS.

AMONG plants grown for the beauty of their foliage alone, there are few that better repay good culture than the Alocasias They are rapid-growing plants, and may therefore soon be grown into large specimens for exhibition, or for occupying prominent positions in the hothouse. Alocasias delight in shade and plenty of atmospheric moisture, which can be secured by placing them on inverted pots over tanks, that the bottoms of those in which they are growing may stand an inch or two clear of the water. In such positions they are very easy to cultivate, and rarely show any disfigurement round the edges of the leaves, as they sometimes do when there are sudden fluctuations in the amount of humidity immediately surrounding them. Young plants of Alocasias must be kept well above the rim of the pot when shifting them into others of larger size. Well drain by the use of plenty of crocks, and put in a mixture of rough fibry peat and Sphagnum, packing it closely and securely round the collars of the plants, taking care not to injure the points of the large fleshy roots protruding through the old ball. When packing the fresh material about them, shake in a little silver sand, and place a few pieces of charcoal amongst the peat and Sphagnum to ensure its porosity; after which water freely during the remainder of the growing season. A. macrorhiza variegata requires different treatment as to soil and the way it is potted, for which purpose good fibry loam and peat, used in a rough state, is the most suitable. This, like the others, requires plenty of water while growing, and must therefore be well drained. The same conditions as to atmospheric moisture and shade necessary for the others will suit this perfectly. This variety has, unfortunately, a tendency to revert to the green form and lose its variegation; therefore, in making the requisite divisions for potting, only those showing the best marked leaves should be retained for growing on. Alocasia intermedia, which we now figure, is one of the most handsome kinds. When well grown it is a noble fine-foliaged plant, suitable alike for the decoration of the plant stove or for purposes of exhibition. In habit it somewhat resembles A. Lowi, but it is even more stately than that species, while its leaf-stalks are conspicuously mottled or barred in a very beautiful manner. This plant is propagated by dividing its fleshy rhizomes; and, being of vigorous habit, it soon makes a good specimen if potted carefully in a fresh open compost, consisting of fibrous peat, turfy loam, and leaf-mould, with sufficient coarse sandstone grit to keep the whole open and porous; and if a covering of fresh living Sphagnum be placed over the tops of the pots, near the root-stocks, fresh roots soon make their appearance there, a circumstance which adds considerably to the health of the plants. Alocasia metallica is one of the oldest and most distinct and beautiful of fine-foliaged stove plants, striking in the form of a large specimen, and also serviceable and effective as a small vase or table plant, the young foliage being especially lustrous and handsome. For very large specimens select five or six of the strongest crowns or root-stocks, and taking some 15-in. pots, fill them one-third full of crocks, over which is placed a good layer of fresh Sphagnum Moss, to keep the soil from being washed down and blocking up the drainage, as during the growing season abundance of water, both at the roots and overhead, is required. The compost which

A FINE LEAVED STOVE PLANT (ALOCASIA INTERMEDIA).

we use consists of fibry turf, peat, charcoal, broken potsherds, and chopped Sphagnum Moss. The crowns or root-stocks, which are long in shape, are raised well up in the centre, packing the soil amongst them, so as to form a cone. If potted in February, they will throw up a quantity of flower-spathes before the foliage, but these should be broken off as soon as they appear, in order to direct the whole energy of the plants to the formation of fine foliage. Smaller crowns, placed three in a 6-in. pot, make fine vase plants in autumn and winter; and single crowns in 3-in. pots are also highly effective in table and plant stands, their polished shield-like leaves contrasting well with whatever they may be associated. They are not liable to attacks from insects, but a sponging occasionally ensures cleanliness, and greatly enhances the beauty of their leaves. The following is a list of the best kinds of Alocasias in cultivation in the best nurseries about London, viz.—gigantea, hybrida, intermedia, Jenningsi, Lowi, macrorrhiza variegata, Marshalli, metallica, Sedeni, Veitchi, and zebrina.

Caladium esculentum is a noble-leaved plant when well grown; and for adding a semi-tropical character to the flower garden through the summer and early autumn months, few plants are better adapted than this Caladium. In warm, sheltered localities it makes a free and rapid growth, especially when planted in prepared soil of a light and sandy character, well enriched with rotten manure. For large clumps or masses it is well adapted, as a strong tuber planted in a warm nook soon establishes itself, and forms a good specimen. This species is no more difficult to manage than a common Canna, while its bold foliage is unique and strikingly effective, especially in the vicinity of water. It is extremely easy to propagate by dividing large tubers, and it may be kept through the winter in any shed or cellar where frost is not admitted. Being a gross feeder and of rapid growth, it follows that an abundant supply of water at the root must be given when growing, while when the roots are removed indoors in autumn they may be preserved through the winter in moist sand or earth. When grown under glass in a warm, moist atmosphere, its leaves attain an immense size, and it also makes an excellent conservatory or window plant when grown in small pots. When growing, liberal supplies of manure-water will greatly improve its growth.

Indian Kale (Caladium esculentum).

Monstera deliciosa is another fine-leaved plant which under good culture may be induced to bear large edible fruits. The elements of success in the culture of this tropical fruit are heat, light, and moisture, and, provided these necessary conditions be one and all supplied, success will be ensured. Any form of training may be adopted which will bring the plant well up towards the glass. It may be made to cover a portion or the whole of the back wall trellis, or, what is preferable, it may be trained round forked tree stumps, a system which suits it admirably. It may be grown in a tub, but it is best planted out in a good body of fibrous peat and loam in equal proportions, which should rest upon a good drainage of brick rubble. Thus placed, unlimited supplies of water may be given in hot weather, and the fruit will be fine in quality and abundant. Although the Monstera will thrive in a low temperature, it will not develop its true character as a fruit-bearing plant unless a brisk growing heat be maintained during the spring and early summer months. In a conservatory or greenhouse it is, however, well worth growing for its foliage alone, and it is often used in the sub-tropical garden during the summer months.

Sanchezia nobilis is an excellent fine-leaved plant for conservatory decoration during the summer months. It is alike remarkable for the size of its leaves and the rich yellow bands of colour traversing each side of the principal veins. From the great substance of the foliage, and the comparatively hardy nature of the plant over most other stove subjects, it stands well in the cool, dry air of a conservatory and in positions where it would be quite unsafe to place Crotons, with many of which in point of leaf-markings the Sanchezia will compare most favourably. Cuttings put in now under hand-lights in any shady part of the stove will soon root; and, if grown freely on during the summer, make fine useful plants for next season. To get the leaves of large size, they must be potted in good fibry loam and leaf-soil, with sufficient sand to keep the whole porous and open, that water, of which they take liberal supplies when growing, may pass freely through. Any about to be removed for decorative purposes should first be placed in a cooler and more airy house than that in which they have been grown, so as to harden them gradually and prepare them for the change. In order to have their leaves in the best possible condition, they should be frequently sponged, to remove dust or other deposit that may have gathered on them from the impurity of water used in syringing.

Propagation of Fine-leaved Plants.—Cuttings of Cyanophyllums, Aralias, Crotons, Dracænas, Ficuses, &c., should be taken off as soon as they are large enough for the purpose. In the case of most of them the young shoots that are formed after heading back root much more readily than the points of the strong branches, especially when obtained with a heel, as they can be got at this stage of their growth. All the larger-leaved plants of this description require sufficient room in the cutting-pots, or they are liable to damp off; and every effort should be made to retain in perfect condition the whole of the leaves which they possess, as upon being clothed with perfect foliage down to the base depends their appearance afterwards. Plants that require to be increased by division of the crowns are easiest managed about the time when they commence growth. Some of the species of Pandanus, Musas, Hedychiums, Cyperus, Anthuriums, &c., may therefore now be divided as wanted, potting the pieces separated singly and keeping them close until they have become established.

Moss Balls for Bedding Plants.—Most of our bedding plants, when potted off early in April, are each tied up roughly in a coating of Moss and then plunged out in frames, &c., in soil. The plants root into and through this Moss, and are very easily transplanted to their final positions in it without any injury whatever. The Moss is (of course) not disturbed in planting, the roots passing readily through it into the earth. We find this an excellent plan.—R.

Shading.—A house of any form facing the south, where the sun in the middle of the day comes directly upon the occupants, needs shading for a time on the sun-exposed side for almost any kind of plants; whereas, in the case of structures placed in the opposite direction, the bars and rafters break the force of the sunshine, and this, coupled with its striking them obliquely, much reduces the necessity for shading. Large numbers of tender-leaved, fine-foliaged plants, such as Cyanophyllums, Caladiums, Alocasias, Palms, and Ferns absolutely require shade when the sun is powerful, as otherwise, if the foliage be not positively burnt, it gets so brown as to make it unsightly. It is much the best plan to put those plants, both flowering and fine-leaved, that want shade, at one end of the house, using shade there only. It cannot be too often impressed upon beginners in the cultivation of plants that the blinds in all cases should be movable, and that they should never be down before there is absolute necessity for it, nor to fail in rolling them up as soon in the afternoons as they can be dispensed with. The material used should also not be thicker than just to break the force of the sun's rays.

Achimenes and Caladiums.—Achimenes for late blooming that have not been started should at once be put into heat. Those first started in pans will shortly be ready for placing in the pots or hanging baskets in which they are to be grown. For large houses there is nothing more effective than these plants in good-sized wire baskets suspended from the roof. For general purposes pots of small or medium size will be found the most useful. Their rapid growth necessitates a liberal supply of water through the growing season, for which reason see that the drainage is efficient. Any Caladiums not yet started should immediately be shaken out and repotted. These will be serviceable, retaining, as they do, their leaves fresh and in good condition through the autumn. If there be a deficiency of any kind when the young crowns have got 6 in. or 8 in. in length, they may be cut out from the tubers, placed singly in small pots, and treated as is usual in the case of cuttings, in which way they will shortly get established.

Common Pinks for Winter.—Anne Boleyn and the common white are desirable Pinks for winter flowering in pots. In the preparation of the plants an early start is half the battle; and to obtain this early start the cuttings or pipings must be taken from plants that have been forced. Any one who may wish to make a beginning should take up a few plants, pot them, and introduce them into a gentle moist warmth. The cuttings should be taken as soon as the new growth is in a fit condition for striking, which is when the young shoots begin to acquire just a little solidity or firmness at the base. They must be inserted under a hand-light or in a close frame, where just a little bottom-heat can be had. The cuttings must not be permitted to lie about exposed to the air whilst being prepared, as they are more susceptible of injury from this cause than most plants. As they are trimmed they should be placed in a pan or some other vessel containing water, till a sufficient number be prepared. If only a few are required, they may be rooted in pots or pans; but the first-named plan is the best, and produces the most vigorous plants. They must be shaded from bright sunshine and kept in a moist condition without too much saturation. A light sprinkling of water when the shading is removed on bright afternoons will be beneficial. Under such conditions the cuttings will soon root, when air should be given, gradually increasing its quantity till fully exposed. As soon as they are sufficiently hardened to bear full exposure, take them up carefully and plant them out in a prepared bed in an open situation, about 9 in. apart. A fresh loamy soil, slightly enriched with old cow manure, suits them best. The summer management, which will not involve much trouble, consists in maintaining a loose friable surface by frequent stirring, and watering occasionally in dry weather. Early in October the plants must

be carefully lifted, with balls, and all the root possible, and potted in 5-in. or 6-in. pots, putting the strongest in the larger size. Some of the strongest plants of Anne Boleyn may perhaps require pots a size larger, if the cuttings were obtained early. After potting, the plants may remain in the open air on a coal-ash bed for a time, but must not be exposed to severe frost. From the open air they should be taken to a cold pit, where they must remain till moved into a warm greenhouse to force them into bloom. The stronger and better established the plants, the better they will bloom when forced; but if started early, the forcing should begin gently, and the plants should occupy a light position. —H.

Pink Lady Blanche.—This is a free-blooming Pink, and one very valuable for forcing; it is easily grown and useful in the conservatory, as well as for cutting for bouquets, white flowers being always in request. The blooms, too, do not burst like those of other varieties. My mode of culture is as follows:—About the end of the present month, or as soon as there are plenty of cuttings, which there will be if the plants have been forced on in a little heat, I insert them in the same way as I do those of Verbenas; I plunge the pots in a gentle bottom-heat under a hand-light, or place a square of glass over the pot, shading them when the sun is very powerful; when well rooted, I gradually harden them off. About the end of April I plant them out about 10 in. apart in good soil, during the summer they will take care of themselves. About the middle of October they will require to be potted in 5-in. pots, and kept in a cold frame through the winter, or till they are required for forcing.—W.

Soil for Camellias.—It is frequently urged that Camellias require peat and other ingredients almost out of the reach of ordinary cultivators. That they will grow in peat we all know, but its quality varies so much that the majority of growers would do better, when making a bed or border for them, to form it as they would a Vine border, simply omitting all noxious rank manures, and relying on a top spit of an old pasture to supply nourishment. This would maintain a healthy growth longer than any kind of compost ever put together. A little dry cow or sheep manure, or sand if the soil be deficient in that respect, might be added with advantage. If at any time the plants need stimulating, liquid manure or a rich top-dressing keeps all going on satisfactorily. This is the best season for planting Camellias, and I would recommend any one having plants in an unsatisfactory condition to plant a portion of them out-of-doors, not under the shade or drip of trees, but where they would be subjected to moderate exposure, *i.e.*, where the force of cutting winds would be moderated by trees or shrubs or buildings. Our most flourishing beds of them are on Grass in openings in the Pinetum and pleasure-grounds, where dense specimen Conifers grow in luxuriance without shading them. Camellias out-of-doors, though perfectly hardy, will never supply the place of those under glass, as spring frosts are so liable to damage their flowers. Under glass they are the very best winter-flowering plants which we have. Their season of flowering, too, may be lengthened by having plants that mature their growth early and that begin to expand their blooms before winter sets in. Thus a continuous succession may be maintained all through the dull months until Roses are abundant.—G.

Gorse for Gooseberry Caterpillar.—For some years I have found that placing small pieces of gorse round the stems and in the hearts of Gooseberry trees effectually gets rid of caterpillars. It should be placed there fresh on their first appearance.

Destroying Ants.—Our conservatory was infested with ants last summer. I tried many of the Infallible Insect Destroyers, with little or no effect. I observed one day a dense column crawling up the window-frame; some of them were winged. It occurred to me that they might not like pepper, so while the gardener swept as many as he could into a pail of hot water, I gave the rest the benefit of the contents of the pepper-box. They retired quickly, and have not re-appeared.—E. B.

FRUIT.

Renovating Old Pear Trees.—The following may be interesting to some of your readers concerned in the treatment of old Pear trees that have become so cankered that they do no more than bear a few poor fruit at the extremity of the branches, and even if they make any young wood it dies almost as soon as the leaves fall. I had three or four such trees on a wall, covering at least 70 ft.; so, instead of taking them up and planting young ones, I had them cut back to within about 9 in. of the main stem, and on the portions left I grafted the Winter Nelis Pear, which took well. Although this was only done three years ago this spring, the walls are now well and regularly covered for from 4 ft. to 6 ft. on either side of the old trees with beautiful young wood; and last year, although a bad season for Pears, I picked about ten dozen fruit, possessing very fine flavour, and there is now a promise of a good crop. I this spring intend to graft another tree with a different sort of Pear, to see if it will answer equally well; but there is no finer Pear grown than the Winter Nelis, as it is a good and regular cropper, and a perfect dessert fruit, both as regards flavour and appearance. I have also put in buds in old trees, which have taken well, but they do not fruit so soon. In one case I put eight buds in one tree seven years ago; four of them came away well the first year, and have borne fruit for two seasons. Last spring another of these buds started, and made a shoot of about 3 ft. In the autumn the sixth bud started, and is now strong, although not more than 3 in. long; but I have no doubt it will grow well this year, and make up for lost time. Is not this an extraordinary case of buds lying dormant for a number of years before starting? In either grafting or budding old trees, I should recommend that the top branch on either side be left for the first year to draw the sap, or the stems will bleed so much that damage may be done to the grafts or buds.—E. D. S., in *Field*.

Mulching for Fruit Trees.—For many years past I have mulched fruit trees with the long manure as brought from the stables. In the matter of bush trees, such as Gooseberries and Currants, it serves two or three purposes: first, it manures the land; secondly, it keeps the fruit clean. The heavy summer rains, unless the trees are mulched, splash the fruit and make it useless. Peaches, Nectarines, and Apricots all share in this annual dressing, which, I believe, does much good and saves watering.—R.

Growing Strawberries.—Good Strawberries cannot be had without labour or space in which to grow them. The following is a plan which we have found to be most successful:—The earliest runners are selected and layered on pieces of turf let into the ground. As soon as they are well rooted they are severed from the parent plants and transferred to permanent quarters, on well-enriched and deeply-dug ground. They are planted in rows 2 ft. apart, and 1½ ft. asunder in the row. All the runners are kept pinched off during summer and autumn, and the following year they produce a few very fine fruit, but the second year they bear prodigiously, yielding fruit of the largest size and finest quality; the next year they deteriorate somewhat, and after fruiting a third time they are destroyed, thus necessitating successional beds; and, no matter how limited your space may be, you must resolve to have successional beds if you wish to have good fruit. We never yet saw fruit worth the name that had been grown year after year on the same plants and ground. The following are free-bearing kinds, hardy, and good, either for dessert or preserving—Vicomtesse Héricart de Thury, President, Sir Charles Napier, and Sir Joseph Paxton.—W.

Monstera deliciosa.

HINTS FOR AMATEURS.

Those who are fortunate enough to possess a little patch of garden in any suburban district should now be busy, morning and evening, sowing or planting. One of the most frequent of all questions asked by amateurs is, "How deep shall I sow my seed?" To this question we can only reply that it depends on the kind of seeds sown. The amateur must be guided, to some extent, by the size of his seeds; for example, Sunflowers, Sweet Peas, Convolvulus, and Nasturtiums have large seeds, and these will find their way through nearly any depth of soil; but the best depth to sow these is, say, 1 in. to 1½ in. deep. Now, if we were to bury some of the smaller and more tender of flower seeds 1 in. under the soil we should never see the young plants come through the surface, and it it possible that the seedsman would be blamed for supplying bad seeds, when in reality the fault was our own. All small dust-like seeds should be sown on the surface of finely-raked ground, and then just enough of finely-pulverised soil should be sprinkled over to cover them completely. Many seeds, as Mignonette, Larkspurs, Wallflowers, and many annuals, will grow well if simply thrown over the surface of newly-dug earth and then raked in with a small-toothed rake. The object in covering the seeds is two-fold, viz., to keep them moist and dark until germination takes place, and to hide them from the birds. Everywhere in Nature we see the seeds sown as soon as they are ripe, and the falling leaves cover them over and eventually supply the young plants with the best of all manure. For the generality of large seed ½ in. deep is quite enough, and this depth is best for all except the smallest or dust-like seeds. If the flower-garden and borders are to be gay with a variety of hardy annuals, now is the best time to sow them, and not a day must be lost. A dozen showy varieties will only cost a shilling, and these will add much interest to any little suburban or town garden, however small.

Now, it is, unfortunately, but too true that there are many amateurs who do not know the names of half the plants they admire in the

market, or in the gardens of their neighbours; so we will just name a selection of plants which will bloom during the ensuing summer if sown at the present time, and carefully watered every evening in dry weather. This latter operation will be an interesting one, as it will bring the amateur into close communion with his plants, and much will be learned as to their individual peculiarities and requirements. A garden is of little use to its possessor unless he takes a personal interest in its management, and in time this attention will grow into a pleasure; and no part of the day will be more pleasantly spent than an hour or two in the cool of the evening when the pet plants are being duly attended to. One of the easiest of all plants to grow, and one of the most deliciously-fragrant of all plants, is the common Mignonette, or "Little Darling," a name bestowed on it when first introduced into French gardens. We should like to see every bare inch of soil in all our parks, squares, and gardens covered with this "fragrant weed;" and one way of obtaining this is to buy an ounce or two of seed at the cost of a few halfpence. This should be emptied into one of your pockets, and then, on passing any bare spot, a pinch of seed might be sprinkled over it, and some are almost sure to grow; and they will perfume the evening air with their refreshing fragrance.

Most people like flowers, but they neglect their culture for the want of definite information how to proceed. Sweet Peas are showy and fragrant; their flowers being borne on long slender stalks makes them suitable for cut flowers, and they, moreover, last remarkably well in water. Convolvulus major, or "Morning Glory," is a handsome and quick-growing climber, and a few seeds of this should be pricked in close to any bare wall or fence, as it makes an excellent trellis-plant, or it can be trained up strings beside the door or window—positions in which its rich ruby, or purple-tinted flowers show to the best advantage. The common Canary Creeper is a general favourite, and grows well treated like the last. It has fresh green leaves, divided into about five lobes, its flowers being of a bright golden-yellow colour, not unlike little canary birds; hence its popular name. Growing up a string by the cottage porch, or scrambling over a low fence, this is one of the most beautiful of all climbing plants. Its botanical name is Tropæolum peregrinum, and it is nearly related to the common Nasturtium, another elegant and free-flowering climber, well known in nearly every cottage garden. Ten-week Stocks should now be sown in patches, and they will bloom in the course of a few months; while their flowers are nearly as sweet as Mignonette. Asters may be sown in the same manner, and hardly ever fail to produce their large richly-tinted double flowers. In addition to these, Larkspurs (purple and white), Snapdragons (Antirrhinum), Soapworts (Saponaria), and Clarkias should find a place along with Collinsia bicolor, Love-lies-Bleeding (Amaranthus), Candytuft (Iberis), Eschscholtzia californica, Lupins, Nemophila, and the rosy cushion Pinks (Silene pendula). The above will grow and flower freely in any ordinary garden soil, and are quite as well worth growing as Geraniums and other summer bedding plants; though, if possible, include both in your arrangement. As to the question of expense, any of the above seeds can be bought at any seed-shop in penny or two-penny packets; so that the cost is no serious obstacle to their culture. B.

Graveyard Gardens.—There are few open spaces either in town or country that present features more depressing than those found in cemeteries or country graveyards. A few sombre trees may be seen here and there, sometime planted with judgment, sometimes without, but generally of a heavy, funereal aspect; and nearly all the rest is a wilderness of mounds, headstones, pretentious tombs and monuments, much long rank Grass, and seldom any attempt to produce elements of beauty or of cheerfulness. The surfaces of all graves should be little gardens, surrounded by an edging of wirework or some other elegantly made material, and on each should be cultivated a few dwarf flowers, such as the taste of the surviving relatives might dictate or their circumstances enable them to obtain. Here at once are introduced elements of beauty and cheerfulness, and, not least, of cheapness, as the requisites may be obtained at a comparatively trivial cost, whilst the attention necessary in all future time may well be the duty of the graveyard attendant, who should receive a sufficient salary to enable him to keep his garden so neat and so pleasant as to make it at all times a loved resort of the living. Only one such a grave garden have I yet seen; it is in a humble churchyard, and is now all abloom with pretty spring flowers, Daisies, Primroses, Forget-me-nots. Hepaticas, and top-dressed over with fine Cocoa-nut fibre refuse, and enclosed with a low edging of wirework. To maintain the neatness is but a labour of love, and grave gardens will more fully than in any other way serve to perpetuate a sentiment for the dead, which should ever be that of fond remembrance.—A. D.

House and Window Gardening.

Periwinkles as Window Plants.—The pretty little blue-flowered Vinca minor, or Lesser Periwinkle, as it is called, is well worth cultivating in pots or baskets in windows. It grows and flowers freely in spring and summer, and its glossy-green leaves resist the dust and smoke bravely. There are variegated and double-flowered varieties of this Vinca which are also well worth growing either inside or outside of windows in town or country. Any garden soil with plenty of road or river sand added will suit the Vincas well, and if a little manure-water is given when they are growing freely it will greatly assist them.

The Lesser Periwinkle (Vinca minor).

Begonia manicata as a Window Plant.—I saw this flowering beautifully in a window at Sunbury the other day, in a sitting-room which seldom has a fire in it. The plants had been in the same position three months.—V.

Window Gardens.—Prepare boxes for window plants. If they are small they may possibly be accommodated indoors for two or three weeks prior to placing them outside, in which case the plants will get well established before they are subjected to outdoor treatment. The boxes, pots, or pans to be used for window plants should be perforated sufficiently to allow superfluous water to escape readily. A layer of potsherds, small chips of brick or sandstone, should be put in the bottom; then the roughest of the soil, filling up with the prepared compost. Good fresh loam mixed with leaf-mould or some well-decayed manure makes an excellent compost, capable of growing almost anything. Pelargoniums of different kinds, but particularly the green-leaved plain and zonal sorts, also the white variegated-leaved varieties, are all suitable for window decoration, as are also Lobelias, Heliotropes, Fuchsias, Tropæolums, Mignonette, and many other plants. Ivy and likewise Ivy-leaved Pelargoniums are excellent plants for this purpose. Succulents, such as the different kinds of Mesembryanthemum, are likewise very suitable for sunny windows; and Musk, Calceolarias, and similar plants for positions where they can be kept moist. The variegated Iris is one of the prettiest plants that can be grown for the ornamentation of a window, and its leaves remain a long time untarnished. Perennial hardy plants, with the exception of Creeping Jenny and one or two others, are but short-lived when so treated; but many annuals may be employed with advantage for windows, and when they have done blooming they can be pulled up and thrown away, thus making room for Pelargoniums and similar plants, which form a useful succession to them.

WINDOW PLANTS.

The usual position occupied by window plants in general is on the ledge, outside in the summer time, inside in the winter. In both cases it will be advisable to have some protection, so as to prevent the plants from toppling into the street on the one hand, or, on the other hand, on to the floor of the room. Any neat little fancy guard will do inside; but I would suggest for the outside a box made sufficiently wide to over-hang the window-sill by 2 in. or 3 in, and to be 6 in. deep. In this the pots might be set, and surrounded with sand or ashes, or, better still, with soil; and if the latter, then at each end a few seeds of climbing Nasturtium, or Convolvulus major, or both mixed together, may be set, and by adjusting a few strings, may be trained up the sides of the window and festooned across the top. Not only is this desirable result (and additional attraction to the room window) attained by adopting the box arrangement outside, but the pots, plunged in the cool material, will not require nearly so much water and attention as when exposed over their whole surface to the action of a blazing summer's sun, which must be the case on an unprotected window-ledge.

Ventilation is a necessity as well in winter as in summer; and though in newly-constructed houses the windows are usually made to open above as well as below, still in many of older date the lower sash only is movable; hence, when opened, the plants are placed in a draught. This is alike prejudicial to the health of plants and human beings, especially in winter. So, if the temperature outside is very cold, set your plants either on one side or on the floor, replacing them after you close the window; but if the air be mild you can close the door, throw the window well up (the higher the opening the less the draught), and leave the plants to enjoy the fresh breeze. Never put your plants on a high shelf, so as to be "out of the way" during night, as the higher their position the hotter is the atmosphere in which they have to exist; consequently the plant is robbed of its fluids by an unnatural evaporation. These remarks are especially applicable to rooms in which gas is used. Rather place your plants on the floor. During summer, if you cannot arrange for your plants outside on the window-ledge as previously suggested, it will not be much trouble to turn them out-of-doors every night, even if it is only into a backyard. The cool refreshing dew of heaven is, in the absence of rain, nature's great restorer of exhausted energies. Leaves exercise during the day their power of evaporating moisture; but they have likewise the power of absorbing moisture during the night. With the coolness then prevailing, the moisture becomes condensed on their surface and forms dew.

Plants in a room are sure to have their leaves coated over with a deposit of dust. Where the leaves are smooth, or I ought to say shiny, this may be readily removed by washing; but where the leaves are soft and covered with hairs, some injury is sure to be done, be the hand ever so gentle that applies the sponge. However, the injury will do less harm than the dirt incrusting the leaves; and as it is much easier to keep one's own face thoroughly clean by washing it every day, so with your plants, in a room especially where fires are in constant use, wash them often, say at least once a week, and before the leaves are dry, sprinkle them well with clean water. When you syringe your plant always lay it on its side; the water used in this process will not then run into the flower-pot. If it does, you may get your plant what is called "water-logged." In the summer-time a day's rain, gentle and continuous—nature's shower bath—will be more effectual than sponging and syringing, even by the most loving hands. So in summer never let your plants miss a genial shower. J. C. N

Arum Lilies.—The culture of this Arum is by no means difficult. It will even thrive amazingly in limited pot space; but the luxuriant growth that displays its finest features is best got out of richer soil, more space, and plenty of moisture. A group of this Arum

placed in a cool hall in front of a disused fireplace, and, fringed by a few dwarf-flowering plants, presents a marked effect in efforts at indoor decoration. Few plants, perhaps, at this time of the year would more fittingly associate with this Arum than strong, well-bloomed specimens of the Chinese Dielytra, one of the most handsome and graceful of all early spring plants; the pendulous growth of both foliage and flower would effectively support the drooping and noble foliage of the Arum, whilst the handsome white spathes project from the mass of luxuriant leaves with a grace that words fail fully to describe. Plants that are so nearly aquatic in habit are doubtless difficult customers to feed in accordance with their entire needs in an entrance hall, but the need might be met by placing the large pots in zinc pans; and further, in occasionally running a damp sponge over the leaves to keep them free from the dust that will inevitably rise in the best conducted house.—A.

Snails and Slugs.—Last year I found that the application of Little's Soluble Phenyle prevented the snails and slugs from attacking my plants: I cannot say whether it killed them or not. I give the result of some experiments. The solution was applied to eleven out of twelve Dahlias, and these were not touched; the twelfth was eaten by slugs. The tall White Lily is a favourite of these pests: where the solution was applied these were not touched; the others were eaten. The same may be said with respect to experiments with the Chrysanthemum, Pyrethrum, and other plants; and I consider that the application was a decided success. If, however, the solution was applied after a plant had been partially eaten it generally died. One tablespoonful of the soluble phenyle, measured by a medicine glass, was poured into a gallon watering-can, which was then filled with cold rain or spring water and the mixture stirred; it was then poured round the stem of each plant, covering a space contained within a circle of about 1 ft. in diameter. This was applied every Monday for a few weeks and then discontinued; but in weather when snails were likely to move a little was added for the sake of precaution.—G. W. O., *Teignmouth*.

When to Move Tree Pæonies.—I notice that these should never be transplanted except in the autumn. If transplanted at any other season they are apt to perish either during the summer or in the ensuing winter. It seems a pity that these beautiful plants should be so little grown. They are at once among the most showy and striking of all hardy plants. Specimens of them in the herbaceous borders and beds are very striking; but massing them among shrubs or as separate groups on lawns is still more striking and effective. As soon as their leaves fall in the autumn is the only safe season to divide or remove them.—T. F.

THE SHRUBBERY.

Aralia spinosa.—This handsome-foliaged shrub or dwarf tree deserves notice on account of its late blooming, and also for retaining its large compound leaves until autumn frosts warn it that winter is approaching. I consider it far superior to its near relation Dimorphanthus mandschuricus. This latter sheds its leaves a month or six weeks earlier than the former, which is, to my thinking, a faulty property in shrubs or trees that are planted for ornament. What should be encouraged in planting is the selection of plants that bloom late and do not drop their leaves early. Spring and summer flowering shrubs are plentiful enough. Aralia spinosa bears its huge panicled inflorescence on the points of its principal shoots of the current season's growth. It is seen to the best advantage on a sloping grassy bank.—B.

Sowing Gorse or Furze.—Land intended for Gorse seed should be prepared much in the same way as Turnip land, that is, deeply stirred and finely pulverised; it should also have a dressing of good lime compost or a little well-rotted manure where a quick growth is desired, though it is a plant that will eventually flourish even upon a poor soil. From the middle to the end of April about 4 lb. of good seed per acre may be either sown or lightly drilled in; this will be found sufficiently thick either for cover or for cutting as food for stock. Where Gorse is intended to form a hedge about 1 lb. of seed to the 100 lineal yards may be sown upon the top of a well-worked ditch bank. This plant is more permanent if it be not allowed to seed, and the best time for trimming it is directly after the flowers are shed, generally about the middle of June. During the severe weather of the past winter rabbits made in many places great havoc among the young Gorse of last year's sowing.—A. J.

Forsythia viridissima.—We are indebted to Mr. Stevens, of Weybridge, for cut flowers of early flowering shrubs, among which were sprays of this beautiful free-flowering

A Hardy Spring-flowering Shrub (Forsythia viridissima).

Forsythia, from which our engraving has been made. It is a perfectly hardy shrub, growing in any ordinary good soil, either in the open in the form of bushes or against a wall or fence. In March and April its shoots are laden with large bright yellow blossoms, which last for a long time, both on the plant or placed in water in a cut state.

Cement for Aquaria.—The "Polytechnisches Notizblatt" gives two receipts for a cement for joining glass, wood, and metal. The first consists of a mixture of equal parts of shellac and powered pumice-stone, to be used while warm; the second is obtained by melting ordinary brimstone in a ladle, and adding an equal proportion of powdered pumice-stone. The pumice-stone in both cases must be thoroughly dried before mixing, as it apt to absorb moisture from the air.—Q.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

April 12.—Potting Achimenes; sowing Autumn Giant and Walcheren Cauliflowers, Veitch's Protecting, Cooling's Matchless, Snow's Early White, and Dilcock's Bride Broccoli, also Red and White Cabbage; planting out frame-sown Lettuce and Cauliflower plants; sowing Cottager's Kale, Asparagus Kale; also following sorts of Broccoli, viz., Snow's Winter White, Leamington and Knight's Protecting; thinning out Carrots in frames, also thinning Lettuces, Radishes, and Turnips.

April 13.—Potting off tender annuals and Fuchsias; shifting all stove plants that require it into larger pots; also Chrysanthemums without stopping their shoots; sowing Mignonette on borders; also Cottager's Kale, Cocoa-nut Cabbage, White Cos, Alexandra and Neapolitan Cabbage Lettuces, Cucumbers, and Melons; planting Globe Artichokes and Lettuces from autumn-sown seedbuds; also planting a border of autumn-sown Cauliflower plants that have previously been pricked out; pricking out Celery in frames; also Sweet Basil, Marjoram, and Ice plants; putting Heaths into cold pits; picking dead flowers off Indian Azaleas and placing the plants in a warm greenhouse; getting bulbs that have been forced in pots and placing them under the protection of a wall out-of-doors; sowing a collection of Everlastings; pricking out Leeks, Chervil, and Borage; potting Caladiums, Balsams, and young Vines; earthing up Potatoes in frames; also putting a little earth over choice ones above ground.

April 14.—Putting Caladiums into 10 in. pots; shifting Tree Mignonette and young Vines; sowing Fulmer's French Beans, Salsafy, Scorzonera, Celery, and Radishes of different kinds; planting out Cerastium tomentosum and Strawberries; spawning Mushroom bed and afterwards firmly beating it down; pricking out first batch of Cinerarias, Primulas, and Herbaceous Calceolarias; Putting in cuttings of Begonia parviflora and Chrysanthemums; thinning autumn-sown Onions; sticking Peas and putting Narcissi in pots just coming into flower under wall out-of-doors, in order to prolong their blooming; sowing Radishes; also Giant White Cos and All the Year Round Lettuces; sticking Peas, and afterwards earthing them up a little; getting all bedding plants out under south walls, to harden as fast as they become fit for exposure; hoeing amongst all growing crops as fast as the weather will permit.

April 15.—Potting Cockscombs, Tuberoses, and Ten-week Stocks; sowing Scarlet Runners in rows 5 ft. apart, and more Mignonette out-of-doors; also Blue-branching Larkspurs; planting Dwarf Curled Borecole for seed, Carnations, Borage, and more Cauliflowers; transplanting spring-sown Onions, to fill up gaps in main bed where plants have failed to come up; pricking out seedling and double red Daisies; hoeing among Raspberry plantations; putting cases over two or three rows of Black Prince Strawberries that are coming into flower; stopping shoots of bedding Calceolarias, and tying up more Lettuces; sowing Scarlet Runners in deep trenches, so that they may be easily protected from frost; also Nasturtiums, Mignonette, Larkspurs, and Convolvulus; and likewise a collection of Antirrhinums; pricking out Lettuces, Celery, Asters, Stocks, and Tagetes; planting out spring-sown Cauliflower plants; also Giant White Cos and All the Year Round Lettuces.

April 16.—Potting Lobelia Paxtoni, Nepetas, and Chamæpeuce diacantha; shifting a few Palms into larger pots, and potting off Celosias and Prince's Feather; sowing Sweet Peas in pots, also Mignonette, Vegetable Marrows, Malope, another frame of Early Horn Carrots, and a border of French Beans; planting out forced Tulips and Lily of the Valley, second-sown Melons, and spring-sown Lettuces; putting in cuttings of Coleus, Ageratums, Salvias, and Gladiolus into cold frames; hoeing among spring-sown Onions; placing forced Roses under back wall, where they can be readily protected with mats in case of cold weather; putting a little soil on Asparagus beds; potting plants of Scented Verbenas, Tricolor Pelargoniums, and Tomatoes; giving Cucumbers a little top dressing, picking off all false blossoms, and stopping them where required.

April 17.—Potting Celosia pyramidalis, coccinea, and aurea; shaking out and re-potting large standard Heliotropes; sowing Nonpareil and Champion of England Peas, Broad Beans, Spinach, and Walcheren Cauliflower; planting Black Prince Strawberries, Gladiolus, Dielytra, and Sweet Briers; putting in Pink cuttings on hotbed; thinning Carrots in frame, also early-sown Turnips; potting off seedling Ageratums, Solanums, and Petunias, also Alternantheras, Coleus, Verbenas, Vegetable Marrows, and Ridge Cucumbers; hoeing between rows of Parsnips, Onions, and Carrots; weeding Box edgings, and cleaning up kitchen garden.

Flower Garden.

The charm of a garden is the constantly-recurring freshness which the various plants present at all seasons. Common Violets, red and white Daisies, Crocuses, Primroses, Anemone apennina, Arabis albida, and Scilla sibirica will soon be in flower; and these will very shortly be supplemented by Omphalodes verna, Irises, Candytufts, Hepaticas, Gentians, and others. All of these should be plentiful in every garden. Expense as regards these plants need be no barrier, as they can all be had for a few pence each, and can be transplanted at almost any season. The denser Sedums and Saxifrages are appropriate plants for association with the foregoing, either as undergrowth or as intermediate patches. The following are now very beautiful, viz.—Sedum aureum, S. acre elegans, S. glaucum, and S. lydium, Saxifraga rosularis, S. hirta, and Thymus hirsutus. The smallest plant of any of these, split up and propagated during the summer, would make several good patches for

next spring time. Lily of the Valley is now starting into vigorous growth, and its flowers will be much improved if the inert surface soil be removed and replaced with fresh loam and well-rotted manure in equal proportions. Beds of Dielytra spectabilis and Spiræa japonica should be treated in the same way, but it will be necessary to protect these in the event of sharp frost occurring. Mats laid on hooped sticks form the simplest protection for them and other spring flowers of doubtful hardiness. Where spring gardening is not practised, and the beds at liberty, a good deal may now be done to advance the summer bedding and prevent a pressure of work at that inevitably busy season. The arrangements can be completed, the designs marked out, and the hardy and half-hardy plants may be at once planted. Edgings, divisional lines, and groundworks of Violas, Echeverias, Sempervivums, Saxifrages, Sedums, Menthas, &c., can all now be planted with safety, and very shortly Calceolarias and Verbenas may follow. Autumn-sown annuals may now be thinned out; the plants are sturdier and flower better than if left too thick. Sow in the open ground Sweet Peas, Mignonette, Candytufts, Eschscholtzias, Larkspurs, and Clarkias, and prick out those sown in frames as soon as they are fit to handle. Bedding plants have driven annuals for summer embellishment out of our flower gardens; and though this is to be regretted it cannot be wondered at, seeing that bedding plants are so much more lasting and amenable to manipulation. Still, there is room for both in most gardens—the bedding plants for the parterre, and the annuals for the mixed borders, supplementary to the herbaceous plants, a purpose for which they are every way adapted. Shrub planting, pruning, hedge clipping, and all other extraneous work, should now be completed, as each week will bring its own work that must be done, such as mowing and rolling lawns, sweeping, weeding, and rolling walks, and planting out bedding plants.

Auriculas.—Exhibitors of these will now have an anxious time of it, as all the trusses of flowers are showing themselves; and the question arises as to whether certain flowers will be in perfection at the time required. No definite instructions on this point can be laid down for those who have not had experience in such matters; suffice it to say, however, that, as a rule, selfs are in good condition early, and that they do not stand so well as the best green, grey, or white-edged flowers. There are exceptions, however, as one of the latest Auriculas to flower is Duke of Argyll, a fine crimson self; and some of the edged flowers lose their character in a few days after the zenith of their beauty has been reached. If it be intended to push forward any late trusses, the plants may be placed in a warm house, near the glass, and air must be admitted rather freely by day, with a little at night. The Auricula shows are fast approaching, and as many growers at long distances off may want to exhibit, but are deterred from doing so owing to the expense, we may mention that if such persons would turn the plants out of their pots, and wrap the balls round with old shading tightly, they might be packed into very small boxes. We have, indeed, seen an exhibitor carrying a box in each hand, in each of which there were thirty plants—as many as most amateurs would be able to exhibit. The societies provide pots and Moss for surfacing them.

Carnations and Picotees.—Look over the plants and remove decayed leaves; also weeds, which will be sure to grow in the fresh compost. Keep all tender sorts under the protection of cold frames as long as it is convenient to do so. If cuttings of perpetual-flowering Carnations have not yet been put in, no time ought to be lost in seeing that this is done. Those who are desirous of having a large stock of plants should put in the small side growths as soon as they are large enough for that purpose. If these be placed under a close glass light in the propagating house, not 5 per cent. will fail to strike root. Cuttings put in early and now well rooted should be potted off singly in small pots, setting the pots in a warm, rather close place, to induce the formation of fresh roots; afterwards place them in a cold frame.

Hollyhocks.—Seeds from the best sorts may now be sown in the open air if there be no glass lights or frames available, but they will germinate more freely in a gentle hotbed, although they must not be coddled under glass after they are above ground. Plants raised in this way will flower well next year. See that no time is lost in getting all named sorts planted out, using the precautions previously recommended.

Pansies.—These are even more deserving of attention than the Hollyhock, as they are attacked by no disease that cannot easily be combated. Plants in pots are now making a charming display, and if the leaves have been kept free from mildew and green fly, a continuation of fine flowers may be expected. When the flowers begin to fall off in quantity, as they will do in time, pick all of them off, surface-dress with rich soil, and on this peg the shoots down; this will produce renewed vigour, and perfect flowers will be the result.

Hardy Primulas,—Sparrows are very destructive to these when planted outdoors. We have hundreds of Primroses and Polyanthuses planted out, and it is disheartening to see the flower buds picked off and dropped on the ground in thousands before they open. Grown in cold frames, the finer forms of Primrose rival even the Auricula and laced Polyanthus. They require but little attention, but that must not be denied them; they must have free ventilation, plenty of water, and the leaves kept free from red spider and green fly. Plants of P. nivalis are now masses of bloom, which is admired by every one. We place the plants under a north wall when they go out of flower, and they make free, healthy growth.

Annuals, &c., as Substitutes for Bedding Plants.—Although annuals do not, as a rule, last long in flower, there are some which may worthily rank with bedding plants, and amongst these may be mentioned the following:—Asters, Balsams, Helichrysums, Nasturtiums, Ten-week Stocks, Phlox Drummondi, Portulacas, Tagetes, Sanvitalias, and Zinnias, as flowering plants, and Beets, Amaranthuses, Perilla, Artemisias, Tobacco, Ice-plants, Solanums, Ricinus, and Salvia argentea as fine foliage plants. There are also a few perennials, biennials, and annuals which may be raised from seed, but which are usually struck from cuttings in order to preserve some special character, viz., Ageratums, Verbenas, Lobelias, Petunias, Cannas, Chamæpeuce, and Pyrethrums; all these are beautiful as regards either foliage or flowers, and, if carefully used, may be induced to produce a display almost equal to that yielded by our most favoured bedding plants. With the exception of Sanvitalia and Beets, the whole may be raised in pots on a slight bottom heat, and as soon as they are fairly out of the ground they should be placed in a greenhouse for a few days to harden off. A cold frame having been prepared with rich soil, the flowering section—with the exception of Ageratums, Balsams, Lobelias, Petunias, Phloxes, Portulacas, and Verbenas, which should be pricked off in pots and kept in moderate heat close to the glass—should be pricked off about 3 in. or 4 in. apart. The whole of the fine-foliaged section should be put into pots, pans, or boxes, and retained in heat. A knowledge of the heights and colours only is then required to make a grand display. A moist, warm day should, if possible, be chosen to put them in the open ground, and if taken up with balls of earth they will be sure to succeed. Sanvitalia and Beets may be sown where they are required to stand and thinned out where necessary. Pyrethrums, Petunias, Lobelias, Ageratums, Cannas, and Chamæpeuce should, to have them in good condition, be sown as early as possible.

Glasshouses.

Cyclamens done flowering should at once be placed in a house or pit where the atmosphere can be kept a little close, with plenty of light, but slightly shaded from the sun; these are also liable through the spring months to get infested with green fly and red spider, which, confining themselves almost exclusively to the undersides of the leaves, frequently go unobserved until the foliage is very much injured, the result of which is that it dwindles away through the summer, and the roots get into a stunted, hard state, which prevents their afterwards growing and flowering satisfactorily. Where means exist, and the hints that have been given are followed for keeping back a few of the latest-flowering kinds of Camellias, these will be found very useful in the conservatory during this month along with Epacrises, Boronias, Eriostemons, Azaleas, Rhododendrons, the last batch of Hyacinths, Tulips, Lily of the Valley, forced Roses, Cinerarias, &c. As the sun's power increases, there will be still more need for attending to shading, or the flowers of most plants will be of comparatively short duration.

Climbers that were cut back during the winter, and that have now commenced growth, must have regular attention in the way of training. Those possessing a twining habit require constant care in this matter, otherwise the shoots get interlaced to such an extent that it is impossible afterwards to get them disentangled, and the young growth of all such plants as these is generally so tender as to scarcely admit of being untwined from anything that it lays hold of without stopping further extension. Plants of this description, either grown in pots, tubs, or planted out in borders, where the root space is limited, will, in most cases, require the assistance of manure water. It is, however, of little use applying this unless growth is actually in progress; for, if given at other times, the fertilising elements which it contains get washed away by the usual waterings, and do no good. In structures of this description the use of ordinary manure water is not admissible, from its offensive odour, but if made from guano, with a little soot, and applied early in the morning, that objection will be obviated; and in places where nothing of the kind can be employed Clay's or Standen's manure dusted on the surface of the pots, tubs, or beds, where it gets washed into the soil with the ordinary waterings, will be found most effectual.

Tuberous-rooted Begonias.—A stock of these should be grown in all places, large or small, on account of their being so useful in many ways. Roots of them started some time ago will now have made some progress, and should be furnished with root-room proportionate to the size of the bulbs. They will thrive under ordinary greenhouse temperature, but will come on faster if kept a little warmer. Any remaining bulbs that may yet be in a dry state should immediately be started; they will come into flower later in the season.

Calceolarias.—The herbaceous varieties will now be growing apace, and should be well attended to with manure-water; they are gross feeders, and the advancing flower-spikes will be much benefited by it. They should be kept in a temperature of 45° at night. There are no plants that require more care as to keeping them free from aphides, for if these be once allowed to get ahead it takes a severer application of Tobacco to kill them than the blooms will bear. The shrubby kinds are equally deserving of cultivation as the softer sorts, although their flowers may not be so conspicuous. There are few more useful subjects for general decoration than the old C. aurea floribunda. It is serviceable in the shape of small plants, such as are grown for the London market; but so managed it is insignificant compared with the character which it assumes when grown on for years and regularly cut back each season after flowering, something like a Pelargonium, part of the soil being removed, and the plant repotted similarly. Any of the stout-habited, dark-flowered kinds are suitable for growing in the same way. The treatment which they want at this time of the year is such as that which answers for the herbaceous sorts.

Cinerarias and Primulas.—Those who intend to save seeds of these should select the best marked forms as seed bearers. In the case of the Primulas they should be set on a dry, airy shelf, where they will get plenty of light, choosing plants that have not been weakened through early flowering, as they will not produce nearly so much seed as those that have only bloomed recently. With Cinerarias it is necessary to keep the colours separate. Put the best forms and colours of red, and also of blue, as well as the white grounds with red tips, each by themselves in small frames from the time they come into flower, selecting for the purpose the latest bloomers. Thus treated, these three colours will produce plenty of variety, including the many shades of purple and violet; but only by keeping them apart can a preponderance of the blues and purples of different shades be avoided. A

little more Cineraria seed may again be sown towards the end of the month, and the plants from the first sowing must be treated so as to prevent their being drawn up weakly. A little Primula seed should also be sown to come into flower before Christmas. Double Primulas may now be propagated by means of cuttings kept a little warm, but not so much confined, or they are liable to damp. They are not nearly so effective for decorative purposes as the single varieties, but where flowers are much in request for cutting the double kinds are a great deal the best, as they last longer than the single ones.

Kitchen Garden.

An additional supply of Broad Beans and more Peas should now be sown. Of the latter, if Champion of England, Veitch's Perfection, and one of the tall varieties, such as Emperor of the Marrows or British Queen, are all put in at once, a successional crop will be obtained. Unless where the land is wet, Peas at this and subsequent sowings should be sown in shallow trenches, so that the soil covering the seed should be about 1 in. below the surface level on each side; this will admit of the liberal application of water, which in dry weather is necessary to them. To further assist them a quantity of manure should be worked in deeply at the bottom of the trenches. Do not sow too thickly. At this and the succeeding sowings half the quantity of seed required earlier, or when there was more to fear from the depredations of slugs and birds, will now suffice. More Spinach should be put in between the rows of Peas or any vacant spaces, and a little more Turnip seed, if required, should also be sown. Of Seakale, if a sufficient quantity of roots be not at hand for planting, seed may now be sown, making holes with a dibber, and covering it with 1 in. of soil. Drop three or four seeds in each hole, which should be 1½ ft. apart in the row, with a similar space between the rows, these distances asunder being best suited to the proper development of plants of this description.

There are no edgings to walks that equal Box in appearance, when well kept. The present is a good time for either replanting or making up any deficiencies that may exist through the Box having died in places. The latter mishap generally occurs where the land is of a heavy, wet, retentive nature, and insufficiently drained; or it is killed through vegetable crops being planted too near it. If the haulms of Potatoes overhang it during the summer, or if Cabbages, Beet, or anything of similar character be too close, it gets killed. Where any considerable portion of the Box is dead it is much better to take up the whole and replant, as where the dead portions are simply replaced it has a patchy look. In the case of existing edgings in the usual positions—viz., bounding gravel walks—that require to be thus treated, remove all the gravel from the sides, placing it in a ridge in the middle of the walk; take up the whole of the Box, which should be heeled in to prevent the roots drying until the ground is prepared; commence at one end and dig over where the Box has stood and is to be replanted, about 1½ ft. or 2 ft. in width, breaking the soil fine.

Care must be taken to have the surface thus dug of the right height, proportionate to the ground which the edging is to enclose; if too high it will have an awkward appearance, and if too low it gets smothered through the rains washing the soil down upon it. Draw the line from end to end, quite straight or gradually curved as the course of the walk requires; with a spade open a trench, cutting straight down so as to have it perpendicular on the off-side, drawing the soil inwards; this trench should be the full depth of the spade. Then commence with the Box, dividing it by hand; it will slip up readily, and care must be used to secure a portion of roots to all that has to be planted. Begin planting it in a thin continuous line, with the tops about 2½ in. or 3 in. above the surface, filling in the trench as the work proceeds with the soil that was taken out to form it, treading it with the feet solid so as to make it lie quite close. After the planting on both sides of the walk is done, replace the gravel, adding more if required. A little practice will enable the operator to plant the Box in a continuous even line, all equal in height and breath. All the subsequent attention necessary for some time will be in the matter of watering the Box in May or June if the weather be very dry.

VEGETABLES.

Substitutes for Spinach.—In gardens where Spinach in summer quickly runs to seed, a trustworthy substitute often saves trouble and annoyance. The Perpetual Spinach, or Spinach Beet, as it is sometimes called, may always be relied upon, no matter how hot and dry the weather may be. It does not possess the peculiar sooty flavour of the true Spinach, and it is hardly so dark in colour, but otherwise it is a most wholesome vegetable, and is exceedingly prolific, and one sowing will last the year. Sow about this time in drills 1½ in. deep and 1½ ft. apart. When the young plants appear, thin gradually, using the young succulent leaves, until finally they are left 8 in. or 9 in. apart in the rows, and afterwards the leaves should be gathered in the same way as Spinach. The Spinach Beet is a biennial, and will not flower till May or June of the following year. It is much sought after in some parts of the country, and used with Parsley and Thyme for stuffing salt meat. For summer use only, the New Zealand Spinach is invaluable. It is a half-hardy annual, and, to have it early, should be sown in March, or early in April, in a hotbed. As it does not transplant well, it will be better to sow it in small pots, two or three seeds in a pot; harden off, and plant out in a sunny spot, 3 ft. or so apart, in May, towards the latter end of the month. It may be sown in the border at once, but will not be ready for gathering so early. It is very productive. Two dozen plants will supply a large family, as, when once well established, it grows with great rapidity, especially if it can have a good soaking of manure water occasionally. It will grow on the hottest and sunniest spots, but the leaves are larger and more succulent when well fed. Lee's Giant Orach may be usefully employed as a substitute for Spinach. It should be sown now in good deep land, and be thinned to at least 1½ ft. apart. —H.

Late Celery.—To have Celery as late as possible without "bolting," the sowing should not take place before April 20, and from that time, whether sown in a frame or on a prepared bed in the open air, it should be grown without checks either from loss of roots in transplanting, or from drought through being insufficiently supplied with water. When the young plants appear thin them out by removing a few at a time, gradually giving them more room as they require it, until they finally stand 2 in. apart, and then (if not already done) prepare the trenches, and before the plants rob each other too much, lift them carefully and plant them in the trenches. Well water and shade them, taking the shading off in the evenings, and replacing it on bright days as long as the plants need it. The planting should be done either early in the morning or late in the evening, or else during a dull day. The soil should never be allowed to become dust-dry. Celery is a marsh plant, and although it may not bolt much before its time if kept too dry, yet there are evils almost as bad as bolting, such as soft pithy stalks, which are mainly the result of checks improperly given. I have at different times grown a good many kinds—so called—but for late use I do not at present know any better than Clarke's Solid Red and Sulham Prize Pink. —E. H.

Staking and General Culture of Peas.—Peas should always be staked before they produce tendrils; besides, the stakes afford them considerable shelter and encourage growth. The rows should be slightly earthed up first, and if ordinary Pea-sticks are used they should be as tall as the Peas are likely to grow. To save expense and trouble in making the stakes, I always use the best of last year's stakes for the early Peas; their bottoms being decayed, they are chopped off, and they are then just tall enough for the earlies and second earlies, which are mostly of a dwarfer habit than late Peas. The lengths most needed are 3 ft., 5 ft., and 7 ft. Where sticks cannot be had conveniently, strong sheep nets stretched along each side of the row, and supported here and there by stout stakes, are an excellent substitute. As regards culture, except keeping the ground clean and stirred between the rows, the Pea wants little attention after staking. In dry seasons, a good thick mulching of rotten manure, litter, or short Grass, spread along the rows on each side, and about 2 ft. out from the stakes, is highly advantageous—not only improving, as it does, the quality and abundance of the crop, but also prolonging it very considerably. Mulching reduces the necessity of watering very much, but water may be given whenever there is time to apply it; there is no danger of over-watering, for the Pea absorbs an enormous amount of moisture from the ground, which is usually dry in the vicinity of the row. In gathering, the most forward should be diligently sought for, as when the pods are allowed to get old, growth soon ceases and the supply soon comes to an end.—J.

ROSES.

PLANTS FOR INTERMIXING WITH ROSES.

Roses are unsurpassed in their attractions by any flowering plants in cultivation when in bloom, but they have an uninviting appearance when their principal display for the season is over, which is not compensated for by the limited number of flowers which even the most continuous bloomers among the Hybrid Perpetuals, assisted by the Chinese and Noisette varieties, produce. This, of course, is not apparent in the case of such plants as are introduced into mixed borders, where the rusty condition which their foliage assumes in the after part of summer is not so prominently noticeable as when they occupy beds or borders by themselves. But to do full justice to Roses they require such liberal applications of manure as will not agree with the majority of flowering subjects; yet much may be done to render Rose-beds and borders attractive from early in spring up to the end of autumn without in any interfering with the flowering or general well-being of the Roses. In the selection of such plants as are adapted for this purpose it is necessary to consider not only the habit and form of the subjects chosen generally, but it is of equal importance that they are such as either possess an immunity from the principal insects with which Roses are so much infested, or that are easily kept clear from their depredations.

Perennials Suitable for Mixing with Roses.—In beds of Roses, where the plants were pegged down, I have found nothing more effective than the common White Lily (Lilium candidum) and the different varieties of L. canadense, three or four bulbs planted together in the openings between the Roses. They are equally suitable for using in this way amongst half or full-sized standards, but when associated with these the Roses should not be planted very close, or the Lilies are liable to be in the way of any one moving amongst them for the purpose of attending to their requirements. To follow these, Gladioli are in every way adapted as to the time they will come into flower, succeeding, as they do, both the Roses themselves and the Lilies (should they be used as well); and, like them, their erect, non-spreading habit of growth and the ease with which green fly can be destroyed by syringing, should it get from the Roses to them, adapts them well for growing in this way. Gladioli for the purpose should now be planted; the Lilies when the tops have died down. Single plants of Campanula pyramidalis, at intervals in the spaces between the rows of Roses, are also very effective. These should be raised from seeds sown in May out-of-doors in the open ground, and grown on through the summer; they should then be taken up, potted singly, wintered in frames, and planted out amongst the Roses in May.

Annuals for Mixing with Roses.—The best of these that I have found adapted for the purpose are Ten-week Stocks, sown about the middle of April, and again at the end of the month, grown on three or four plants together for a time, in 4-in. or 5-in. pots, and then planted out without disturbing their roots. The rich condition of the soil necessary for the Roses keeps the Stocks growing and flowering longer than under ordinary treatment. French and African Marigolds are especially suitable for this purpose. They keep on flowering long, grow freely, and are proof against aphides or other insects, as far as I have ever observed. These

should be sown at once, a few seeds each in a 5-in. pot, and planted out about the middle of May. Mignonette, either sown now in pots and afterwards transferred to the Rose beds, or sown at once where it is to remain, will, by keeping the plants thin enough, continue flowering till near autumn.

Protecting Rose Cuttings.—I find a slight covering of dry Fern to be an excellent protection for Rose cuttings and dwarf Roses when the buds are expanding, and until the young shoots get from ½ in. to 1 in. long. The frost comes and blackens them when unprotected, and in the case of cuttings, they have not the vitality to start again.—R. G. B.

NOTES ON HARDY FLOWERS.

Asters.—No time should now be lost in getting these sown, for the quicker the seed is sown the stronger will be the plants at planting-out time at the end of May.

Annuals.—Now is a good time to sow these. Many annuals are spoilt by being sown thickly on a hard, unbroken surface. If cultivators would only sow a great many of their annuals (at least, the hardiest among them) in autumn, to stand the winter, they would have them very much finer in spring and early summer than they are when sown in April and May. During the winter they root well into the soil; they make a good growth in spring, and come into bloom gradually, freely, and continuously. In early summer dry warm weather brings the plants into flower before they have made their growth, and they are soon over. Those who sow now should stir deeply, use some fine rich soil, and press the whole firmly down. All strong-growing annuals, such as Nasturtiums, Sweet Peas, Convolvulus major, Eschscholtzias, Malope, Lupines, &c., cannot be expected to flourish unless they are growing in a rich holding soil.

Auriculas.—These are fast coming into bloom, and will need abundant supplies of water during dry weather. On no account should the plants be sprinkled overhead, or the water will damage the expanding flowers. We are keeping our plants somewhat close, but fully exposed to light, and they are making a fine growth and throwing up bold trusses. As pot plants the alpine varieties are very beautiful; but in order to have the edging as pure and well defined as possible, they should be grown in poor soil.

Primulas.—These are now very beautiful, especially such kinds as P. nivea. P. ciliata intermedia, P. denticulata, P. pulcherrima, P. purpurea, P. amœna and its varieties, P. marginata, and others; and being on the whole easily cultivated, they should be grown by every one who is fond of hardy flowers.

Double Daisies.—These are now very attractive, and as there are several varieties in cultivation, an interesting collection may soon be formed. Such varieties as Early Gem, Blood Red, Common Red, Giant White, White Globe, Pink Queen, and Pink Beauty make a charming collection. Then it is a pleasing operation to raise some from seed, provided the latter be good. It should be sown now in a shallow box or bed in a cold frame, pricking out the young seedlings when large enough to handle, and in autumn finally planting them out in beds to bloom in spring.

Hyacinths.—Those in pots are now going out of bloom, and many are puzzled to know what to do with them. My plan is to plant them out under the protection of a wall in an out-of-the-way place where they can remain for years. A good deep trench is dug, and the plants are turned out of their pots, and planted in it, pressing the soil firmly about them. From bulbs treated in this way, many a posy of fragrant blooms may be cut in early spring.

Pansies.—Seedlings are now fast opening their flowers, and every day something new will be produced; the best should, therefore, be lifted and re-planted in prepared beds for summer decoration, and the inferior ones may be thrown away. I have planted some of the best-named varieties, both show and fancy kinds, out in beds, and they are growing freely. It is a good plan to peg the shoots firmly to the soil, in order to keep them from wind-waving. If anyone wishes to have the rich-belted white-yellow ground and self-coloured Pansies in full beauty, they should grow the plants in 4½ in. and 6 in. pots, in cold frames, and when coming into bloom, water them with liquid manure. This is how the fine Pansies seen at the exhibitions years ago used to be grown.

Pyrethrums and Ranunculuses.—Double varieties of Pyrethrums, planted out to flower in beds or borders, will now need looking after, as slugs are apt to eat their young growths. Ranunculses must now be encouraged to make all the growth possible, the bulbs having been planted late this spring, owing to the wetness of the season. Many fine Ranunculuses are lost through excessive moisture; therefore it is well to cover the beds during the heavy rains early in spring, before growth commences.

Tulips.—Beds of Tulips need all the light and air possible while the weather is mild. At this time of year the great danger of Tulips is a sharp frost following a heavy rainfall. On this account growers of choice varieties keep a covering on their beds, which can be lifted so as to fully expose the beds, or dropped to cover them, as may be necessary. D.

TULIPS.

THE Duc Van Thol Tulip, well known by florists for its earliness and adaptability for forcing, is a species altogether distinct from the garden Tulip (Tulipa gesneriana), from which so many varieties have been obtained. What are

The early Duc Van Thol Tulip (Tulipa suaveolens).

termed the species of Tulips are always considered more hardy than the Tulips sold by florists; and, moreover, if the species are well planted in the first place, they will improve in vigour yearly if left in the ground undisturbed, whilst the garden varieties of Tulips will greatly deteriorate.

Greig's Tulip (Tulipa Greigi) is a handsome and as yet rather rare early-blooming Tulip. It is a native of Turkestan, whence it was sent by Russian collectors to the Botanical Gardens at St. Petersburg two or three years ago. Of all the known species of Tulip—and there are some twenty-six—this is perhaps the most showy and desirable as a garden plant. It blooms freely in April or May, its large goblet-shaped flowers being generally of a vivid orange-scarlet colour; but there are also purple and yellow-flowered forms of this Tulip. Herr Max Leichtlin, of Baden-Baden, by whom the plant was introduced into commerce, tells us that its bulbs are so extremely hardy that they will withstand freezing and thawing with impunity, and that even when the leaves are half-grown they will endure a temperature as low as that of zero without any protection. The plant is a vigorous grower, attaining a height of from 9 in. to 15 in., and bearing flowers from 4 in. to 6 in. in diameter when fully expanded, and three or four lance-shaped glaucous leaves, with undulated margins, the whole of the upper surface being boldly blotched with purple or chocolate-brown. We have seen it growing well in Mr. Ware's Nursery at Tottenham.

Sowing Sweet Peas.—Everyone who has a garden should have a row or two of Sweet Peas. If sown at once (not too thickly) on deeply cultivated land, they will continue to furnish successional crops of bloom throughout the whole season, and the more the expanded flowers are gathered, the more lasting and satisfactory will be the results, as if allowed to mature seed-pods the plants become quickly exhausted. Sweet Peas may now be had in many distinct colours, but a good mixture will usually yield the best results. I generally drop a few seeds of Convolvulus major in the rows, and these late in autumn form beautiful objects.—J. G.

Variegated Jacob's Ladder (Polemonium cœruleum variegatum).—In some soils and situations this plant is apt to get rusty-looking, and in hot summer weather ceases to grow. A good way to prevent this is to plant it in its permanent position in April, keeping the roots well down in the cool soil, with which should be incorporated a little fresh cow manure. We treated some thus last year and they grew remarkably well—much better than usual. We propagate it by means of offsets taken off about the end of September, dibbing them in 3 in. apart in light sandy soil in ground Vineries or hand-lights, and keeping them close for a few weeks till rooted. There they remain until spring. If the weather is very severe we protect them with a mat or a little dry litter. Like most hardy plants used for bedding purposes, this variety of Polemonium dislikes fire-heat and coddling; simple treatment is best. We find that it associates well with plants having pale blue flowers. We have some forming centres to small circles of Blue King Lobelia resting on a groundwork of Mesembryanthemum variegatum. —H. J. C.

The Double Scarlet Geum.—I had this in flower all the autumn. The flowers were of good size, and as double as those of a good double Geranium, which they much resemble. They are of a deep rich scarlet hue, and, having long stems, are invaluable for bouquets. Now is the time to plant.—D.

Primula denticulata and Veronica Blue Gem.—This Primula is just now in its first flush of beauty; its round heads of lavender blossom and stems thickly powdered with yellow dust are perfectly delightful. Too much cannot be said in praise of Veronica Blue Gem; though for a short time frost cut the flowers, it is now again opening fresh blossoms, and makes, with Snowdrops, Crocuses, and lingering Arbutus berries, quite a glow of colour.—E. E.

Daffodils on Grass. — Conspicuous amongst hardy spring-blooming plants capable of defying the withering influence of an English March stand the Daffodils, the bright yellow flowers of which bend but do not break before the gales that sweep across our meadows. In this district the latter are just now quite yellow with them, large breadths having been allowed to grow undisturbed for years, as, beyond some of the flowers being gathered for indoor decoration by those who have no means of procuring forced exotics for such purposes, the plants are allowed to mature their foliage, as neither cattle nor game ever molest them. Where it is desirable to naturalise Daffodils, good bulbs of them should be procured as early after their foliage has disappeared as possible, and planted in clumps on banks or in semi-wild portions of the grounds where the mowing machine is not an early visitor. Under such conditions they will give unfailing satisfaction.—J. G., *Suffolk*.

Blue Spiderwort.—On p. 40 (March 27) of GARDENING, in a note signed "Lewis W.," Commelyna is called Blue Spiderwort. I beg to inform "Lewis W." that the blue Spiderwort is dark blue, and quite a different plant from Commelyna cœlestis, which is called the Commeline. There is also a white Spiderwort, and the roots and leaves of the Commelyna and Spiderwort are very different. The Commelyna should be treated like the Dahlia, and the tuberous roots lifted every autumn. The Spiderwort is perfectly hardy, and should not be moved at all.—J. M. L. [Commelyna cœlestis is the blue Spiderwort. The plant "J. M. L." alludes to is the Virginian Spiderwort (Tradescantia virginica) of which there are several varieties, some having double lilac, single blue, lilac, and white flowers. Both the Commelyna and Tradescantia belong to the Spiderworts and to the the order Commelynaceæ. It is not necessary to take up the roots of Commelyna cœlestis during winter unless the soil is wet and cold. It is a hardy plant.—ED.

ANSWERS TO QUERIES.

1786.—Soil for Hardy Lady's-slipper.—We should prefer a mixture of good fibrous peat and turfy loam, sifting out all dusty particles and covering the surface with Sphagnum, which encourages the formation of surface-roots, which are really the life of this family of plants. In the case of arietinum and pubescens we would recommend quite two-thirds of peat, mixing with the compost a little crushed charcoal. It is better to employ a compost which, if somewhat poor, is not liable to become sour, as any deficiency of nutriment in the soil may be compensated for by occasional waterings with weak liquid manure when the plants are in full growth.—J. C. B.

1788.—Old-fashioned Flowers.—From the fact of the roots becoming exposed, it would appear that the soil lacks solidity; and to this cause may be attributed the failure of the plants. If the natural staple is of a light, porous, or gravelly nature, it should receive an addition of good loam, marl, or road-scrapings; for although such things as Primroses often grow naturally in light vegetable mould, the roots generally enjoy an extended and somewhat deep root-run, and are, in addition, sheltered by an over-hanging vegetation. To grow them, therefore, successfully in the open the soil at the least must be made firm around them, and a good mulch of leaf-mould or manure should be applied early in the year. If the soil is very light, tread it down hard before planting. It may be also that the soil has become sour and unfit for the roots to work in, in which case it should be turned over, and thoroughly sweetened before planting, mixing a little manure with it. Pansies require a rich and friable soil; cuttings taken off now, and kept growing for a time in a sheltered situation, may be planted out permanently towards the close of the summer. Seed may also be sown from now up to August.—J. C.

1784.—Chrysanthemums for Show.—It is too late to think of striking Chrysanthemum cuttings for the formation of large specimens. If you particularly wish to compete with a prospect of success this year, the better plan would be to purchase some healthy young plants. For exhibition purposes, the cuttings should be struck either early in the winter, or at the latest by the end of February. If the cuttings are taken as soon as the plants go out of flower they may be inserted either separately in small pots or about nine together in a 6-in. pot, and placed in a cold house, where hard frosts are excluded. By March they should be potted into small pots in a compost of half loam and leaf-mould, keeping them in a cold frame, merely protecting against vicissitudes of climate, avoiding all semblance of coddling, and throwing off the sashes in mild weather. Shift on as needed, adding about one-sixth of rotten manure to the compost; and during the summer months place the plants in a sunny situation, half plunging the pots, but never allowing the roots to go through. A centre stake and a few more placed round the edge of the pot will suffice for training purposes, as if stopping has been attended to in the earlier stages of growth there will be an abundance of shoots at the base wherewith the desired pyramidal shape may be worked out. Stop the shoots for the last time about the latter end of August.—J. C., *Byfleet*.

1770.—Climbers for Walls.—Ampelopsis Veitchi, which clings to the wall like Ivy, and which displays such beautiful and striking tints in autumn, should do well in the situation mentioned. We should, however, imagine that either the drainage must be very defective or the soil radically bad, or the Virginian Creeper would not fail. The best way would be to take out about 2 ft. of soil in depth by 3 ft. in width, and replace it with some well-sweetened mould, mixing with it some thoroughly well-decomposed manure. A little silver-sand, mortar rubbish, or anything of a similar nature, would serve to render the soil free and to preserve in a sweet condition. The great point in planting climbers is to give them a good start; once established they generally manage to take care of themselves.—J. C. B.

1750.—Leather Dust in the Garden.—Leather dust contains a high percentage of nitrogenous matter, which is, however, in a very inactive condition, and will therefore only give up this most valuable ingredient of all manures after a long process of decomposition. Being in a fine state of division, it is a very good manure, though not very quick in its results. "H. N." makes a mistake in burning it, as in burning all the nitrogen will be driven off, and the whole converted into a carbonaceous mass, containing a very small percentage of ammonia in an active state, and a small quantity of mineral ingredients. If I understand his question properly, he burns the leather dust along with wood, and if this is so, he positively does harm, inasmuch as the nitrogenous material of the leather will combine with the alkaline bases of the wood, forming cyanides, which are highly prejudicial to plant life. The residue or ash of burnt wood is a very valuable manure, and used in combination with the unburnt leather dust still further increases its value. If the leather dust can be boiled or steamed under pressure it would make it much more active as a manure.—Florist.

1791.—Sowing Begonias.—If sown now and the pots are plunged in a mild hotbed, or placed in a warm house where the day temperature ranges at 60°, the seed will soon germinate, and if the seedlings are pricked off into pans, to be from thence transplanted into small pots, shifting on when necessary, and keeping them in a moist heat, they will attain sufficiently

Greig's Tulip (Tulipa Greigi).

large proportions to flower in a cool greenhouse by the latter end of August. It it better to sow, if possible, by the middle of January; not only do the plants then attain larger proportions, but they come earlier into bloom.—C.

1775.—Gladioli for Exhibition.—Gladioli grown in 6-in. pots would not produce spikes suitable for exhibition. Plant them in good, rich, deep soil, and when about 1 ft. high, mulch them with good manure. As soon as the spikes appear in the foliage, give them a good soaking with liquid manure twice a week. Stake each spike, in order to secure them from damage by wind. As soon as the flowers begin to expand, protect them with shelters made of thin boards nailed to a stake, which will form half a square; tie the spike into this, and it will protect them from boisterous weather.—Weston-super-Mare.

1881.—Plants for Baskets.—Amongst the prettiest of basket plants raised from seed are the Thunbergias, orange, buff, and white, which should be sown at once in a gentle heat. These are creepers, and hang down over the sides of baskets with graceful effect. Phlox Drummondi, in several colours, are also very admirable basket plants; so also are the diverse shaded blues of the Lobelia speciosa. Climbing Tropæolums of the Lobbianum section are too coarse raised from seed, but plants from cuttings will do admirably. The Canary Creeper may do for the purpose. Portulaccas are also very beautiful creeping plants, and flower well if exposed to the sun; and Nemophilas, though much hardier, are also very effective. A few of the dwarfer ornamental Grasses, if sown at once in small pots, should give valuable and effective foliage additions; and some of the Mesembryanthemums would also be useful. In filling baskets it is too commonly the rule to stuff them with Fuchsias, Pelargoniums, Calceolarias, and all kinds of plants that have no affini y either in character or habit with the baskets. All this is very ridiculous, and cannot be too much discountenanced. The great charm of a hanging basket lies in the comparatively untrained free growth of its denizens; and this should specially run about over its sides and hang down in such graceful profusion as should hide the material of the basket from view. Generally there is an attempt to get too much out of a basket: rather it should be the object of the cultivator to get as much beauty as possible out of the least and simplest and at the same time most suitable materials.—A. D.

1886.—Hardy Annuals, &c.—One of the very best and longest blooming of all annuals is Mignonette; but this is not so enduring and lasting in pots as in the open ground, and if bunches of bloom were cut from it often, there would remain little else but bare stems. Calliopsis bicolor, Collinsia bicolor, Chrysanthemum Dunnetti, and C. frutescens are rather tall, but hardy, and offer admirable flowers for cutting. Dwarf Helichrysums, double Larkspurs, and double Clarkias also offer excellent cut flowers, as also do the double and semi-double Indian Pinks (Dianthus Heddiwigi fl.-pl.). White, carmine, and crimson Candytufts are also very good for cutting, and effective in pots. There are many dwarf-growing annuals that are better suited for pot culture, but which would give anything but useful flowers to cut from. Of these Gillia tricolor, Nemophila insignis, Feuzlia diantheflora, and others, are examples. The pots in which the annuals are grown should be at least 6 in. to 7 in. in diameter, and before growing should be filled nearly to the top of the rim with good free loam and well decomposed manure, and a slight mixture of fine sand over the surface. As the soil settles down, it will be found that there is ample room to give water, which, when the plants are full grown, will be largely needed. Some weak manure water would prove very efficacious, and help to sustain growth and bloom for a longer period.—D.

1860.—Woodlice in Melon Frames. Woodlice are troublesome pests in frames and Mushroom houses. I have tried many of the insecticides with but little success. The best remedy I know of is to place several toads in the house; they are ravenous feeders, and soon reduce woodlice, with all other small insects that may chance to come in their way. Toads may easily be obtained in the spring about twilight; they can be picked up by the road sides or in the woods. I caught eighteen in about an hour last spring. I keep several in each house, and am not much troubled with such insects as they feed on.—Weston-super-Mare.

—— I catch quantities of woodlice in the following manner:—I get some 3-in. pots, and place in them Potatoes sliced thinly; I then place a piece of hay, so as to cover the tops of the flower-pots, and lay the pots on their sides. I do this at night, and go round in the morning and examine them, when I put the woodlice into boiling water.—H. E.

—— "E. O." cannot do better than place some toads in his frames and houses. The natural food of toads are insects of all kinds, and in my Cucumber house and Melon house I kept three or four toads in each bin (one bin on each side of a span-roofed house), and my plants are free in every way from all parasites.—W. S. R.

1873.—Lilies in Windows.—Lilies should thrive very well in an east window if the soil in which they are grown is suitable. The best compost is found in one-half turfy loam and the other half a mixture of fresh soil, well-rotted manure, and silver sand. It should be understood that nearly all kinds of plants grown in pots are cultivated under very artificial conditions. Lilies are grand hardy border flowers, and as a rule thrive well in ordinary garden soil; but in pots, where the root-space is limited, not only must the soil be rich, but it must also be open and porous. After constant watering for a few months, stiff adhesive soil will close round

the bulbs and roots as if in a vice, and almost kill them by such excessive compression. Compost for these bulbs is therefore of first consequence, and before potting the greatest care should be exercised to procure some that meets the above requirements. The bulbs would have been better if kept in the soil in which they grew last winter, and should have been potted into fresh soil earlier than this, because in such case more roots would have been formed ere growth came than will be so now. Plant the bulbs about 1 in. below the surface of the soil, and when the stems are several inches in height add a little more soil to feed the stem roots. The quantity of water required must be regulated by the needs of the plants, and no decided rule can be laid down. After the stems have died down, the pots may be put in a cool, dry place for the winter, and in the spring the bulbs re-potted as before.—A.

1898.—**Camellias in the Open Air.**—As a rule Camellias, where planted out in the open ground, whether against walls or in the open ground, do well if the situation be not bleak and the soil suitable. In many places they do well in low situations where the soil is stiff, but which has been assisted by a good portion of leaf-soil and peat. In others, where the soil is naturally good, deep, and well-drained, the Camellia thrives splendidly as a common shrub. It is found by ordinary experience that the plants when first turned out want some shelter from cold winds and scorching rains until well established. We have found them thrive best where there is shade at all times during the middle of the day. In many places the plants would do remarkably well if planted out with confidence, but as a rule the Camellia is treated as a greenhouse plant, and after it has been half-starved in a pot then it is turned out into the open ground as an experiment, and, as might be expected, it too often fails. For outdoor culture young plants of Camellias of the most robust sorts should be specially grown on, and be exposed and hardened off as much as possible before planting out; and, further, the roots should not be allowed to become pot-bound and half-starved. The check thus given cannot be overcome for a long time. Some day, when gardeners realise fully how hardy the Camellia is they will give it in the open air the place it is so admirably fitted to fill.—A. D.

1848.—**Striking Myrtles, &c.**—I strike any number of cuttings of Myrtles, Honeysuckles, Fuchsias, Roses, and pipings of Pinks, &c., in the following very easy way. Get a 6-in. pot, stop the drainage hole with a cork, and fill the pot with water. Place it inside a 9-in. pot, with the tops of the two as nearly even as possible, and fill up the space between the pots with soil suitable for cutting. Plant the cuttings round close against the pot of water, and keep the whole closely covered with a glass. The cuttings require no attention, and in from two to four weeks they have nice roots, and are ready for transplanting. To see if they are rooted give them a slight pull, and if they keep firm in the soil they are rooted. I keep the pot in a north border, slightly shaded by Laurels. —MARK.

1900. — **Cats in Gardens.** — Valerian plants attract cats; so does Nemophila insignis. It is quite astonishing what trouble I have to keep my cat from nibbling and rolling over the young plants of Nemophila. I once entered my garden armed with pieces of Gorse; he saw me put them on my Nemophila, and directly my back was turned sent off the prickly impediment and rolled away with redoubled energy. I sowed some seeds in a deal frame covered with a glass slide; the glass got broken, and I found his huge body wedged in the small aperture. Finally I came off victorious with pea-wires; although he did his best to knock them off with his nose. Cats have the greatest dislike to Rue. —MARK.

—— There is no doubt, I think, that cats have a partiality for certain plants; but I cannot speak with any certainty as to the Valerian; and neither do I know of any plant that would be so objectionable to cats as to keep them from the garden. They are more troublesome at this season than any other, because, like all animals, they like to bask on fresh bright surfaces, like freshly-stirred beds and borders, in spring.—E. H.

1880.—**Camellias from Seed.**—Select a clean pot; place 2 in. of drainage, such as broken pots, in the bottom, arranged with the largest pieces below. On this lay 2 in. of rough peat or turf, and then fill up to within an inch of the top of the pot with sandy peat. Water, and leave to drain for an hour. Sow the seeds, and cover with a ¼ in. of very sandy peat; place a bell-glass over the pot, and pot and plunge in a bottom-heat of 75° or 80°. Keep the soil just moist till the young plants appear; then both air and water in sufficient measure will be necessary.—H.

1883.—**Rose Leaves Spotted.**—Perhaps the bright sunshine we have had lately has scorched the Rose leaves; or the plant may have suffered from want of water or nourishment generally. Under such conditions the effect of bright days and cold frosty nights would be greater.—E H.

1896.—**Narcissi Failing.**—It is difficult to find a cause for the failure. One would think at first sight there was something deleterious in the soil or water, but the Hyacinths doing well in the same precludes the adoption of that view. All bulbs have their flower-spike secreted in the bulb; the result of the previous year's growth. In this case, perhaps, the bulbs may have been weak and faulty.—E. H.

1879.—**Propagating Aralia Sieboldi.**—The best way is to sow seeds; but cuttings of ripened wood will strike in a little bottom heat, kept close. Cuttings of the thick fleshy roots will also grow and make good plants.—E. H.

1898.—**Camellias in Open Air.**—Wait until the sap begins to flow, then carefully prune out all dead wood. There is nothing else that can be done for it. If not too far gone, nature may restore it.—E.

1884.—**Propagating Bouvardias.** — Cuttings of the soft young shoots strike readily in sandy soil, plunged in a bottom heat of 80°. Prune the old plants back now. Keep them rather dry till they break, and plant them out in rich soil in a warm sunny position in the open air in June. Lift again and repot in September.—E. H.

1877.—**Gardenias.**—A night temperature of 60° to 65°, with a corresponding advance in the daylight, plenty of moisture, both in the atmosphere and at the root. Pot in rough, fibry, turfy soil, chiefly peat, with plenty of clean sand to make it porous; and be persevering as regards cleanliness. Gardenias are very subject to mealy bug; paraffin oil, a wineglassful to three gallons of water, incessantly stirred up, is a good remedy.—E. H.

1890.—**Clematis from Seed.**—Gather and sow the seeds as soon as ripe in pans of peaty soil; keep the pans in a cold pit till the spring, then give a gentle warmth, such as is commonly found in a hotbed at this season.—E. H.

1891.—**Cobea scandens from Seed.**—The Cobea scandens ought not to die in a greenhouse in winter. It blooms freely enough in the open air if sown early enough and grown on rapidly. A good plan to get plants to bloom well in a small greenhouse would be to strike a few cuttings in August. Keep them in small pots in the greenhouse through the winter, and pot on and grow rapidly in spring. One or two plants will cover the whole roof of the greenhouse and yield plenty of blossoms.—H.

1894.—**Cyclamens and Cacti Blooming.**—Place the Cyclamens in a cold frame to complete their growth, giving as much water as necessary for that purpose, gradually withholding it as the foliage ripens. The Cacti must have every encouragement given them until growth is finished; then they must have less, to induce firmness or ripeness of the new growth, as without this there will be no flowers.—E. H.

Pine-apple Culture.—*A. B.*—Now is a good time to commence Pine-apple culture. Procure through some reliable nurseryman some good strong suckers, and be careful that they are free from mealy bug. Smooth Cayenne is the most useful kind to grow.

1895.—**Green Flower Pots.**—If scrubbing with sand and water does not remove the green stains from flower-pots, it will be cheaper and better to buy new, and obtain them from a maker whose pots are not so absorbent of indelible stains.—E. H.

1878.—**How to Grow Aconites.**—Winter Aconites will grow anywhere, but they succeed best on banks that are never dug over or disturbed. The tall growing Aconite or Monkshood will thrive well in any ordinary garden soil; and they also do best if left for a number of years without removal.—E. H.

1787.—**Hyacinths not Growing.**—The bulbs are in all probability quite dead. They should be in bloom now unless the soil has been maintained in a dry state, in which state they might have refused to start. If the bulbs are still sound, plant them in the open ground.—C.

1844.—**Making a Kiln.**—I have seen lime burnt in turf kilns very successfully, but with coal in layers with the limestone. The kiln was about 2 ft. high, and 2 yds. to 3 yds. in diameter.—J. M. R.

1845.—**Guano for Plants.**—1 oz. of guano to 1 gal. of water would be quite sufficient for most plants. The water should not be used directly, but be left to allow the guano to get well dissolved in the water.—CALAMUS.

1780.—**Culture of Polemonium confertum.**—*H. C.*—All kinds of Polemoniaceæ succeed best in gravelly or chalky soil. A shady bank is a good situation for them. All are increased by dividing the roots.—AMATEUR R. K.

1848.—**Propagating Oleanders.**—Take cuttings of Oleander and put them in a common pickle bottle kept filled with water in a warm kitchen. They will soon throw out numerous rootlets, and may then be potted. I have succeeded in raising half-a-dozen plants in this way, all of which are thriving.—F. C. M.

1852.—**Carnations and Hares and Rabbits.**—I have found the following plan most successful where rabbits and hares abound:—Take sticks about the size of one's little finger, and about 1 ft. in length, and tar 6 in. of the tops, and insert the remaining part in the ground, placing about four around each Carnation.—H. E.

1901.—**Early Flowering of Lilium auratum.**—We have in our garden a Lily which flowered on the 22nd of March. We consider it to be Lilium auratum. Is it not very early?—M. F., *Lostwithiel, Cornwall.* [It was very early for L. auratum; but we question if it was that kind.]

1902.—**Soil for Araucarias.**—I have a very nice Araucaria on a lawn, but it now seems to require some assistance. What kind of artificial manure should I apply, and what soil?—H. O. [Give it a top-dressing with good turfy loam, and any decayed vegetable matter. If you must have artificial manure, crushed bones would be as good as anything.]

1903.—**Cutting Down Hollies.**—Having a hedge of the common Holly in front of my house, about 13 ft. high, which darkens the rooms, would it be safe to reduce it to about 6 ft. high?—JAMES KIDWELL. [Yes, it would be perfectly safe. Cut with a sharp bill-hook or knife, not a saw.]

1904.—**Roses on Galvanised Wire.**—A few years ago I made several arches in my garden, and covered them with galvanised wire netting. I have since planted several different hardy sorts of Roses to climb over them; but in each instance the branches turn black by contact with the wire. Is there any cure for this?—J. J. M. [Paint the wire.]

1905.—**Hybridising Daffodils.**—I observe in a recent issue of GARDENING that Daffodils may be greatly improved by hybridisation, and that the process is very simple. Would you kindly inform me how to carry it out with a prospect of success?—AN AMATEUR. [For hybridising purposes it is best to grow the plants in pots; and when in bloom a cool greenhouse, frame, or sunny window is a good place for them. The common yellow Daffodil and Polyanthus Narcissus "States General" crossed give fine sorts, but as the last named flowers later than the Daffodil, it must be forced into bloom. Pollen of early blooming sorts may be shaken out, and kept for several weeks in dry tinfoil or silver paper. Remove the pollen with a small brush from the anthers of one flower to the stigma of another, as may be desired. The anthers of the seed parent may be extracted before the stigma is fit for fertilisation, by carefully slitting the tube. You should consult Burbidge's "Narcissus," a book on Narcissus which gives information on crossing them, or "Cultivated Plants," another work by the same author, in which see under "Narcissus." These works are expensive, but may be seen in all good public libraries.]

1906.—**Horticultural Boilers and Furnaces.**—Many makers of boilers insist strongly on the advisability of the fire being surrounded by parts of the boiler containing water (and the use of water bars), which are, of course, iron, and consequently always comparatively cold. On the other hand, others say that all parts of the furnace in contact with the fire should be of non-conducting materials, as firebrick; otherwise, they say, the effect is bad and imperfect combustion, and, instead of producing heat, the fuel is dissipated by dry distillation and goes away in smoke unconsumed. I find that in domestic fireplaces an iron-backed range does burn dull, with a deal of smoke and little heat; whilst a brick fireplace gives a bright fire, perfect combustion, and a good heat with little smoke. Are the first named boilers adapted only for the consumption of coke, and not coal —YORKSHIRE. [Coal may be burnt, but it requires more attention and makes more smoke than coke. Small coa and coke mixed make good fuel, if kept well wetted.]

1907.—**Air Roots on Vines.**—What causes aerial roots to come on Vines, and how may they be prevented? —ARGIA. [The tops of the Vines being in a higher temperature than the roots, together with the close, moist atmosphere of the house, is the cause assigned for aerial roots on Vines. They do no particular injury, and can be prevented by having a well-drained warm border, and keeping a dry atmosphere in the Vinery. We should not advise you to attempt to prevent the roots forming if the crop is good.]

1908.—**Cocoa-nut Fibre for Cuttings.**—On page 812 of Vol. I. it is stated that Cocoa-nut fibre "answers well for draining pots, and cuttings strike readily in it. Is it to be understood that cuttings will strike in the fibre without admixture of mould or other compost?—J. S. C. [Yes.]

1909.—**Tuberous Begonias.**—Some time ago I sowed a few Begonia seeds, only just covering the seeds with soil and sand. The young plants are now nearly 2 in. high; should they be potted off singly into small pots? If so, how deep should the young bulb be planted beneath the surface of the soil? I have heard it said that the bulbs should not be entirely buried.—A LEARNER. [Pot the plants singly in 3 in. or 4 in. pots, using light loam and leaf-soil and silver sand. The young bulbs should be just covered in the soil, but not buried deeply.]

1910.—**Camellias Out-of-doors.**—A Camellia planted out-of-doors early last autumn has lived through the severe winter without any protection. It looks very forlorn, but has not lost its buds. Can I do anything to revive it?—J. K. A. [Pick off its buds, and it may break into growth shortly.]

1911.—**Bulbs the Second Year.**—What is the reason of bulbs never producing equally handsome flowers the second season as the first? I find my Hyacinths annually deteriorate if I do not buy fresh bulbs every year. Can any one tell me how the florists and seedsmen from whom one purchases bulbs manage? Is there any way of treating them when they have finished flowering that will cause them to bear fine flowers the following year? E. B. KENNEDY. [The florists and nurserymen buy these bulbs fresh every year from Holland, where they are grown expressly for sale. The Dutch growers do not let their bulbs flower, but direct all the energies of the plant to the formation of well-ripened bulbs; hence the fine results from imported bulbs. If you plant imported bulbs in rich deep soil, and leave them in the ground after flowering, simply mulching them with rotten manure in winter, you may have fair flowers for several years, but not equal to those produced the first year.]

1912.—**Red Cabbage Seed.**—Will Red Cabbage seed sown now produce marketable heads?—E. L. [Yes; but they will not be so large as those from autumn-sown plants.]

Substitute for Pea Sticks.—*K. K.*—The method described answer 1805 is so simple that any one may understand it by reading and thinking.

Heating Apparatus for Small Greenhouse.—*Amateur.*—The back numbers of GARDENING contain a vast amount of information on this subject.

M. K.—Apply to Mr. Charles Turner, Royal Nurseries, Slough.

Cucumbers in Pit.—*J. M. R.*—If the plants have not made much growth since they were planted out, you could easily lift them, and, having put fresh soil, replant them. The soil must be warm before the plants are replanted. The price of "London Market Gardens" is 3s. 6d., post free 3s. 9d.

Names of Plants.—*J. M., Sheffield.*—Chorophytum orchidastrum; it will grow in a greenhouse or sunny window, and in any good potting soil.——*Harroviensis.*—Daphne Mezereum. You might try some cuttings placed firmly in sandy soil in a shady situation, under a hand-light.——*Ilkeston.*—Thujopsis borealis, Thujopsis dolobrata, probably; but from such scraps we cannot be certain.——*P. Q. R.*—1, Tussilago farfara grande (variegated variety of the Coltsfoot); 2, German Ivy (Senecio mikanoides).

QUERIES.

1913.—**Pruning Coronillas and Genistas.**—When is the proper time for cutting Coronillas and Genistas? Two of my largest Coronilla trees have died through wrong treatment.—J. K. A.

1914.—**Improving Soil for Potatoes.**—I have a piece of ground of a sandy nature which I have repeatedly manured for Potatoes; but, in spite of this, sand it still remains, and the Potatoes are very small. I have spread nightsoil over the surface for digging in. Will anyone kindly give me information as to improving the condition of the soil?—Amateur R. K.

1915.—**Greenhouse in an Engine Room.**—I am about making alterations in my boiler and engine room, and think of making the roof and ends of glass. Would anyone suggest plants suitable to grow in such a place? It would receive a large amount of sun during the greater part of the day. Size, 30 ft. by 30. ft.

1916.—**India Rubber Plant.**—What is the matter with my India Rubber plant? It grows and the top leaves look healthy, but the lower turn yellow and drop off three or four at a time. It stands in a south window.—A. B. C.

1917.—**Plants for Greenhouse.**—Will some one kindly tell me the best plants for a greenhouse heated in winter by a paraffin stove? Geraniums die, and Azaleas, Myrtles, &c., although they live, never blossom. What is the cause?.—A. B. C.

1918.—**Window Plants.**—What plants are likely to thrive best (in a south window) where gas is burned in the room two or three evenings a week?—A. B. C.

1919.—**Soil for the Royal Fern.**—What is the best soil for Osmunda regalis, and the proper treatment of same?—W. H.

1920.—**Manure for Cucumbers.**—Will any one with experience inform me through Gardening Illustrated the best kind of manure for mulching Cucumber beds after the plants are established? The house is heated by a flue.—J. H. W.

1921.—**Keeping old Primulas**—Which is the best way to treat Primulas when they have done flowering? I know it is best to raise fresh plants from seed; but I wish also to keep some of the old ones.—W. B. W.

1922.—**Propagating Aralia Veitchi.**—I have an Aralia Veitchi, which I have cut down, it having grown too high for my house. The portion removed I divided into cuttings, which I attempted to strike in heat; they have all died. How ought they to be struck? or should they be grafted, and, if so, on what stock?—C. A. S.

1923.—**Peas with Beetles Inside.**—I have some Peas which to all outward appearance seem solid and firm; but when I come to examine them and split them open there is a small brown beetle inside them. I found this out quite by accident. I should like to know whether any of the readers of Gardening Illustrated have experienced anything like it.—Gardener.

1924.—**Tortoise in Vineries.**—I have some tortoises in a Vinery and should be glad to know what to feed them with, and where they come from, and whether they will do any harm to the Vines. The heat of the house is from 70° to 99°.—F. Johns.

1925.—**Begonia Seed not Germinating.**—Can any reader inform me the length of time the seed of the above will usually take to germinate. I bought (of a very respectable firm) a packet of seed, and sowed it seven weeks ago, following the printed instructions minutely, keeping them in a house at a temperature of 60°; but not any have appeared above the soil. I wish to know if there is still any chance of them doing so; or should I buy again?—A. T. E.

1926.—**Green Carpeting Plants.**—I wish to cover three flower borders with a permanent green carpet requiring no cutting, not growing, therefore, above two or three inches high. One border is in partial shade, one moderately sunny, and the third in full sunshine. Can I do that quickly with seed? and would mossy Saxifrages or Sedums, or Spergula pilifera or Pyrethrum Tchihatchewi, be suitable, or can others be mentioned better for the purpose, with a view to the three different aspects? supposing no one good one will suit all, which I should prefer for the simple oneness of colour effect?—J. S.

1927.—**Gardening in London.**—How can I best keep a piece of ground a few yards square, in London, gay with summer flowers?—J.

1928.—**Plants for Floating in Water.**—What seed can I sow successfully on a cork island floating in my aquarium? It is always wet and cold, and stands in the shade in the house. I have tried Lycopodium of various sorts and failed. I would like English names given as well as botanical ones.—E. G.

1929.—**Lilium auratum Out-of-doors.**—Will some reader give me the benefit of his experience in growing Lilium auratum and other high-class Lilies out-of-doors, in such a climate as Notts, where during the last winter all our Aucuba japonicas have been cut down to the ground by frost? I have twice tried, and twice failed; but shall be glad to find that this was from bad management, and not from the impossibility of the thing. I found that in the first place the blooming was not till September or October, which is far too late; and, secondly, that the following winter killed the bulbs.—J. J. S.

1930.—**Begonias and Cockscombs.**—Will some one give me the best method for growing Begonias and Cockscombs?—A Novice.

1931.—**Varieties of Chrysanthemums.**—Would some one kindly give a list of the twelve best incurved Chrysanthemums? Also a few of the smallest flowering ones suitable for the button-hole. Of course, I should like a variety of colours in the small kinds as well as large.—Alpha.

1932.—**How to Make a Fern-case.**—I want to make a Fern-case. Will any one tell me the best mode of making one, neat in appearance and simple in construction, and whether the Ferns do as well in one with a flat top as one raised to a dome? The size I want to make it will be about 2 ft. 4 in. by 18 in. wide. What height should such a case be, and what Ferns will thrive the best in it? I want to make one that will not require artificial heat. Full particulars as to construction and other details will greatly oblige.—S. W.

1933.—**Caterpillars on Cabbages.**—What will destroy caterpillars on Cabbages? What is the name of the common black slug? What is the best way to destroy it?—Westernville.

1934.—**Ferns for Damp Cave.**—Will some one give me a list of hardy Ferns suited for a small cave where there is a constant drip of water? Hymenophyllum is well established there already.—H. H. Townsend.

1935.—**Tree Carnations and Picotees.**—I have twelve fine assorted plants in pots in a cool greenhouse, which has the sun upon it from early morning until midday. I shall feel grateful for some good sound advice as to their management at this time (some are now in bud), and later on, and during the winter (when I have a paraffin stove); also as to watering, repotting, soil to be used, and how best to procure it.—W. H. H.

POULTRY.

Perches for Fowls.—A very common mistake is that of having the perches in the roosting house at too great a height from the ground. For large breeds, such as the Cochin or Brahma, 12 in. is quite high enough; and for small breeds, such as the Hamburg, 18 in. to 24 in. Many diseases, such as bumble-foot, corns, or leg weakness, are often caused by alighting from a high roost. It may be said that a hen-ladder, the construction of which is familiar to all poultry keepers, will obviate this evil; but it will generally be found that although the birds make use of it to ascend to roost in the evening they will decline to do so when descending in the morning, and fly direct on to the floor, often with terrific force, thereby straining themselves, and sometimes forcing pieces of gravel or cinder into the balls of the feet, which at once causes a sore and very likely lames the bird for life. Flat pieces of timber, varying in width from 2½ in. to 4 in., according to the size of the birds, are best for perches. Let them be of sufficient thickness to prevent their being "planky," when the birds move on them. They should be placed firmly, either in niches in the wall or on posts let into the ground; but this will depend on the shape and material of the house. Let them be as far as possible from the door or outlet, and near the window, as fowls like light. They should be white-washed at the same time as the walls of the house; and should the birds foul them it should be carefully scraped away. Many large breeds do not care for roosting, and some fanciers bed them on straw, which must be shaken up every morning; but a better plan is to cover the floor with lime and earth to the depth of 2 in. and change twice a week.—Andalusian.

Eggs for Sitting.—Eggs intended for sitting should be gathered up from the nests as soon as possible after being laid, in order that they may not become soiled, as dirty or greasy-looking eggs should never be put under a hen. Shelves, pierced with holes large enough to receive the egg, but not so as to let it slip through, should be fitted up in a room of moderate temperature, and the eggs placed in them large end downwards. In this manner they may be kept for ten days or a fortnight without destroying the vitality. Eggs only of a fair size should be selected, discarding the very large or unusually small ones, and it is advisable not to use those laid by pullets for the first fortnight after they commence to lay. Misshapen ones, or those having the least crack or chip in the shell are useless. It is pretended by some fanciers that they can by the shape of the eggs make a good guess as to whether the produce will be cocks or hens, but little or no faith is to be placed in such theories. The number of eggs to be placed under each hen must be regulated by the state of the weather and the size of the hen, but thirteen may be taken as the average, which number a medium-sized Brahma or Cochin will cover comfortably. It is a good plan to sit two hens on the same day, so that by using an egg-tester about the eighth day, the unfertile ones can be thrown away and the whole of the fertile ones, if not too many, placed under one hen, while the other hen may be given a fresh sitting. If eggs be received from a distance, by rail or otherwise, they should be unpacked carefully and placed under a hen immediately on arrival.—Andalusian.

Bones for Fowls.—We prefer giving our fowls the bones, after crushing them as they come from the table, or even in a raw state. There is no advantage to be gained in baking them; in fact, same of the useful properties are lost; as, for instance, the fatty matter contained in raw or cooked bones is wasted when they are baked. If old mortar is within reach of the fowls they will take care to eat as much as is required to enable them to form the egg-shells. If the bottom of the roosting place is dry and covered with straw or leaves, or any other dry soft rubbish, it will not be injurious to the birds if they roost on the floor at night. Perhaps the roosts are placed too high for the birds to fly up. We never put our own roosts for heavy-bodied birds, such as Brahmas and Cochins, more than 2 ft. above the ground.

Eggs Without Shells.—Give the hens some broken oyster-shells, and let them have as much exercise as possible. Discontinue all stimulating food, and feed them very moderately with barley. We fear you have been over-feeding the birds.

Fowls for Clayey Soil.—If the soil is drained it will not much matter what variety is kept, for so much depends upon the care and management of the birds. Either Brahmas or Cochins would do well, or, if there is plenty of room, Game.

Roup in Fowls.—Roup or croup generally in the first instance proceeds from a cold. A liquid discharge soon follows from the nostrils, the flesh round the eyes becomes swollen, and the eyes frothy. In a few days the discharge becomes most offensive; the disease is then highly contagious. The sick bird should be removed, and put in a warm, dry place; the eyes and nostrils frequently washed with Condy's fluid diluted with warm water, and a teaspoonful of castor-oil may be given three or four times a week.

Pullets not Laying.—To keep fowls in a small yard with little or no exercise, feeding them three or four times a day, and then expect them to lay, is simply going dead against nature. It must be remembered the natural habit of fowls is to be continually on the move, hunting for their food in the fresh air; and they are seldom quiet during the day. Reduce the feeding to two meals daily, let them have as much exercise as possible, and there will then be no cause to complain of pullets not laying. Our own birds have a good feed in the morning, consisting of Barley meal, middlings, and Chamberlain's food, mixed with scalding water; they then have the run of a large lawn, and are fed in the afternoon (about five) with Corn; and we have eggs in abundance since Christmas.

Mopish Fowls.—There must have been something radically wrong, either in the feeding or sanitary arrangements, for the whole of "Tonic's" fowls to have gone amiss at the same time. Then their marvellous cure in ten days looks as though he had an interest in puffing the wonderful mixture which he mentions. My knowledge and experience with poultry, extending over something like five and twenty years, tells me that little faith is to be placed in these mixtures. Occasionally they may prove beneficial; but in nine cases out of ten they are useless. What fowls want, and what they must have if they are to be kept in a healthy condition, is plenty of fresh air, cleanliness, and regularity in feeding with good sound wholesome food; then there will be no need to use these nostrums.—W. J. N.

Fowls not Laying.—I have three Brahma hens which are very poor layers. During the last week or two I have had two eggs from one of them no bigger than those of a pigeon. They are fed on maize and barley occasionally. They have been used to running about the garden, but are now shut up.—H. H.

Fowls with Swelled Beaks.—I have got some half-game and Dorking hens; two of them have swelled beaks, and look very yellow about the beak, and rather frothy at times, and their legs are very yellow. What is the matter with them? They are very fat, and eat well, and do not lay amiss.—Good Health.

HOME PETS.

Canary Breeding.—I beg to submit my system of breeding Canaries, which I have followed most successfully for nearly twenty years. I have a large wire cage, 1 ft. wide, 1½ ft. long, and 18 in. high, which stands either in a window or on a table in a landing, a place which might be thought too draughty and cold, but my birds are perfectly healthy and hardy, and even during this cold winter have never been in a room with a fire. The cage generally contains seven or eight birds, but early in March I take out all except the pair I intend to breed from. I feed these as usual with Canary seed, but I also supply them liberally with Maw seed; and I take care that they are not long without Groundsel or Chickweed. I hang a nest-box in the corner of the cages, and near it a net with cow's hair,

which is the only material I allow for building, as I have found moss, wool, &c., cripple the young birds. The hen soon builds her nest, but if she is clumsy or lazy about it I do it for her, packing the hair, which must be smooth and clean, in thickly and evenly, making a hollow large enough for the birds in the centre. If the hen seems weak I give her some chopped egg for a day or two, or even now and then a little bit of bread sopped in wine, or any other dainty. But generally they do very well on plain food, with vegetables, which must not be forgotten. When the eggs are laid I move the cage as little as possible, and am careful, when obliged to take out the board for cleaning, not to shake the nest. When the young birds are hatched I put in a supply of egg and Maw seed two or three times in the day. In hot weather the egg is apt to get sour if too long in the cage, and this must be guarded against. When the young birds are three weeks old I put them into a cage by themselves, and if they do not eat properly I put the two cages close together, so that the old birds can feed them through the bars. I do not give the old birds a bath when they are laying or sitting, unless the weather is very hot and dry; nor do I let the young birds wash until they are fully fledged. I never have any trouble with my birds; and until last season, which was the worst I have ever known, I have been most successful, rearing five or six families from one pair every year. The great secret is—plenty of fresh air, cleanliness, and variety of food.—J. A. M.

Stuffing Birds.—A simple manner of doing this is as follows:—The entrails should be taken out, for which purpose the stomach should be carefully cut open, taking care not to injure the feathers; afterwards the brain should be taken out through the mouth. Take care not to tear the membranes of the bill in doing so. After having done this, the inside of the skull and also the body should be filled with a mixture of pepper, salt, and alum. Put the bird in a cool place for a short time, then dry before the fire. The object of putting in this mixture is to absorb all the moisture, &c., from the body. After this has been accomplished, take out the pepper, &c., and fill the bird with some soft substance, and arrange the bird as you wish it to remain. The wings and tail can be kept in position with fine wire, which is sold for the purpose. This wire and the eyes can be bought and sent by post by any London naturalist, such as Gardiner, Holborn. The 1s. book on bird stuffing can also be procured at the same place.—A. D'A.

Birds for Aviary.—*Evan Dhu.*—The aviary in question is rather small for a collection of British and foreign birds; however, I will endeavour to give the names of some that would be most likely to agree with one another, and also look well together. The first on the list must of course be the ever popular canary, of which one pair would be sufficient; next, a pair of budgerigars, one pair of love-birds, three or four pair of the tiny ornamental finches. A goldfinch, linnet, and siskin would be about the best to choose from English birds; it would not be worth while to have the three latter birds in pairs, as they are not likely to breed in such a small aviary.—A. D'A.

Bird Lice.—Do canaries suffer from these insects Yes, and "Tilly Slowboy" is quite right in thinking the insect powder is good. As these pests tend not only to distress the bird, but also to seriously impair its health, a tonic must be at the same time administered; and none is better for this purpose than "Finchine."—A. D'A.

Food for Bullfinches.—The best food for all cage birds, is to give them a varied supply of seed. I always let mine have the following mixture—Canary, Rape, Millet, Hemp, and Flax. When breeding, it is advisable to administer a little Maw seed, and also put a few drops of Chard's Finchine in their daily supply of water. This tends a great deal to brace them up, and keep illness or indisposition at a distance.—A. D'A.

Sitting Doves.—I have a pair of doves, but as they have laid four eggs, I fear that they are both hens. How can I distinguish them, and how long should they sit on their eggs?—AUGIE.

AQUARIA.

Crayfish in Aquaria.—These are very interesting objects to keep. They should be kept in an aquaria by themselves, with plenty of stones and shingle for them to burrow in. A little rockwork should be arranged in the middle to come just above the top of the water, so that they may get air if they require it. Nothing else should be kept with them, beetles or fish are certain to be killed by them; neither should any valuable water weeds be placed with them. A few sprays of Anacharis (the Canadian water weed) may float about in their habitation. They should be fed occasionally with small bloodworms. Four may be kept in a 12-in. glass, and will be objects of interest for a long while. I once kept six of them for nearly eighteen months. A friend of mine who kept some induced them to breed, and numbers of little fish half the size of shrimps were the result. I was never so lucky.—W. B.

Plants for an Aquarium.—I do not think any one has answered the question of "S." (Feb. 21, 1880) as to the "Lily with Trefoil leaves, and a bloom like the Horse Chestnut," which blossoms in his aquarium every spring. It is easily recognisable as the Buckbean (Menyanthes trifoliata), one of the most beautiful of English aquatic plants. It grows in several localites round London, but if in ponds or ditches is rather shy of flowering. It flowers in profusion in swampy meadows (dry at times) near one of the sources of the Thames—the Naunton Seven Springs, Gloucestershire.—C. V. A.

—— In reply to "S.," as to the name of a small Lily got in a pool in Galway, is it not Menyanthes trifoliata, the Buck or Bog Bean, commonly called Marsh Clover? It is described and figured by Miss Pratt in her "Flowering Plants of Great Britain."—MARY WAKOLINE, *Stoke Newington.*

Aquatics in Tubs.—Will "J. S." kindly give a little more information respecting water plants—what kind of soil, &c, the plants are to be put in, what depth of soil there is to be in the paraffin tubs, and where they can be procured?—W. J. H.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Owing to the recent bright weather, supplies, especially of the choicest fruits and vegetables, are now improving, though the demand for them is but limited. The commoner kinds of outdoor vegetables are cheaper; of forced and other flowers there are now good supplies, and prices are on the decrease.

Cut Flowers.—*Per dozen bunches.*—Anemone, 4s to 6s; Azalea, 6s to 12s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 4s to 9s; Heliotrope, 6s; Jonquils, 6s to 9s; Lily of the Valley (forced), 9s to 18s; Lilac (forced), 4s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus (paper-white), 6s to 9s; Narcissus (Pheasant's-eye), 1s 6d to 3s; Pelargoniums (zonal), 6s to 9s.; Pelargoniums (large flower), 12s to 18s; Pelargoniums (double), 6s to 12s; Pelargoniums (Rose-scented leaf), 6s; Primulas (single), 6s; Spiræas, 6s to 12s; Snowdrops, 2s to 3s; Tropæolums, 1s 6d to 3s; Tulips; 9s to 18s: Violets (blue), 1s to 2s; Violets (Neapolitan), 2s to 4s; Violets (French), 1s 6d to 4s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 4s to 9s; Camellias, 1s to 6s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenia, 4s to 8s; Roses (forced), 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias. 1s 8d to 3s; Euphorbia, 2s to 4s; Fuchsias, 4s to 6s; Hyacinths, 3s to 6s; Primulas (double), 9d to 1s; Stephanotis, 12s to 18s.

Plants in Pots.—*Per doz.*—Arbor-vitæ (golden), 9s to 18s; Arbor-vitæ (common), 6s to 12s; Azaleas (ordinary), 24s to 42s; Azaleas (hardy), 18s to 24s; Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Aralia Sieboldi, 12s to 30s; Ardisia crenulata, 18s to 30s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Berberis, 4s to 9s; Bouvardias, 12s to 18s; Box, 4s to 9s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Clematis, 9s to 18s; Crocus, 1s to 2s; Crotons (in variety), 12s to 42s; Cyclamen (ordinary), 9s to 24s; Daphne indica, 4s to 6s; Deutzia gracilis, 9s to 18s; Dielytra, 12s to 18s; Dracæna (green-leaved kinds), 12s to 30s; Dracæna (variegated), 18s to 60s; Ericas (hyemalis section), 6s to 18s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 30s to 36s; Hyacinths, 4s to 9s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Narcissus, 9s to 12s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 18s to 24s; Pelargoniums (scarlet), 6s to 9s; Pelargoniums (double), 6s to 12s; Primulas (single), 4s to 6s; Primulas (double), 9s to 18s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 9s to 18s; Scilla sibirica, 9s to 12s; Selaginella denticulata, 3s to 4s; Solanums, 6s to 9s; Tulips, 6s to 9s; Virginian Creepers, 6s to 9s. *Per pair.*—Azaleas (large), 20s; Maiden-hair Ferns (large), 5s to 7s; Aucubas (berried), 4s to 6s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 130s; Grapes (English hothouse), per lb, 10s to 15s; Grapes (imported Almeria), per barrel, 40s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pears (fine dessert kinds), per dozen, 9s to 12s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 1s 6d to 2s 6d.

Vegetables.—*Per* 100.—Asparagus, 8s to 12s; French Beans, 2s to 2s 6d. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 9s. to 12s; Parsley, 18s; Turnips (outdoor), 3s to 4s; Radishes, 1s 6d to 3s; Herbs, 2d to 6d. *Per dozen punnets.*—Cress, Mustard, or small salad, 2s; Seakale, 36s. to 48s. *Per dozen.*—Cucumbers, 12s to 18s; Endive, 2s to 3s; Lettuce, 1s to 2s.—*Per bundle.*—Celery, 1s to 4s; Horseradish, 3s to 6s; Salsafy, 6d to 9d.—*Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 1s 6d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 8s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 4s to 8s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

American Prairie Roses.—Do these flourish well in your climate? I found that English cultivators knew little or nothing about them, and I saw few, if any, plants of them. Certainly they are worthy of trial, for we have nothing here hardy enough for our climate that will compare with them in beauty. The Ayrshires are not hardy, and if they were they are so inferior they would not be cultivated; and the Boursault is only an apology for a good Rose, unless I except the dark variety. Without the Prairies we should be entirely deficient in hardy climbing Roses. They come into bloom just as other Roses are going out, and continue for a long time to display their fine double flowers, which appear in clusters of from ten to twenty blooms. They are vigorous rampant growers, never injured by the most severe winters, and bloom in the utmost profusion. We have now ten or fifteen varieties; and some account of their origin, which might be interesting, I may give you on some leisure occasion. The most distinct are Queen of the Prairies, Baltimore Belle, Mrs. Hovey, and Gem of the Prairies.—A. H., *Boston.*

Hardiness of Indian Azaleas.—There can be little doubt, I think, that a plant is hardy which has withstood our last few winters entirely uninjured, in fully exposed situations. Such is the case with the old white Indian Azalea, of which we have several planted out in the pleasure grounds. I lately came upon a fine bush of it in our woodland garden looking quite at home amongst Rhododendrons. It has made vigorous growths, and last summer most of our bushes of this variety flowered freely. They are certainly hardier than the common Laurel and Laurustinus, both of which are much browned at the ends of their shoots. Anyone fond of experiments regarding acclimatising plants may safely try the Indian Azalea.—J. G.

Neapolitan Violets to Bloom in Winter.—Divide the old plants after blooming in spring, and plant the runners on a cool border in rich light soil. Plant in lines a foot apart, and 10 in. from plant to plant in the row. Keep the surface stirred, and give copious waterings in dry weather. In September, take the plants up with good balls, and plant them in a frame near the glass in a sunny and sheltered situation. Give plenty of air when the weather is severe, and keep off the lights altogether in mild autumn weather.—O.

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GARDENING
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REGISTERED FOR TRANSMISSION ABROAD.

ZINNIAS.

THE Zinnia comes under the denomination of a half-hardy annual. The seed is sown in a gentle bottom heat in early spring, and the plants are hardened off and put out into the open ground to flower. Many spoil their plants by keeping them in the seed pans and boxes till they are planted out, and in consequence the plants become drawn and grow tall, instead of fine, free-branching examples. When they are grown thus thickly together the roots cannot well form good balls with soil adhering to them, and when transplanted the plants are some time before they make a start, and when they do they seldom branch out. Those who care for Zinnias prick off their plants from the seed-pans into other boxes, or into a bed in a cold frame, where they are put sufficiently far apart to form good balls of roots. It is a good plan to pot a few of the earliest of the plants, and grow them on to come into flower as soon as possible, so as to inaugurate a succession. The soil for the Zinnia should be of a light rich nature. Leaf-mould, manure, and a good sandy loam make an excellent compost. In this the plants root freely, and when they do this they seldom fail to do well. The warmest situation should always be chosen in which to plant Zinnias, and if planted in a bed by themselves they would be greatly improved if the soil could be thrown out, and a good depth of fermenting manure be trodden well in, replacing the soil afterwards. Both the single and the double forms of Zinnia make fine garden plants when well grown, displaying a diversity and brilliancy of colour equalled by few plants. The double forms have of late been most in request, although both the double and single varieties have been greatly improved. There is one good characteristic about the double Zinnias: they are not in some instances of such rank and unwieldy growth as the single types, and the process of dwarfing has gone hand-in-hand with that of multiplying the petals in the flowers. Careful selection also has done something in the way of inducing a better habit of growth; and it will be observed that it often happens that particular types of flower get improved both in habit and blooms at the same time. Some of the single Zinnias are very beautiful, such as the yellow, carmine, rosy-purple, scarlet, crimson, and orange. These, with the white—which is, after all, not a good white—will be always acceptable for their large showy blossoms and brilliant colours. In some parts of the country cut blooms of both double and single Zinnias are much grown for show purposes, and there is as much rivalry in the efforts to gain first prizes as in the case of Dahlias and Asters. While the Zinnia lacks the great size of the Dahlia, and the soft beauty and delicate colours of the Aster, it yet includes vivid tints and lustrous hues foreign to both these popular autumn flowers, and stands of well-grown flowers of double Zinnias are most effective on the cut flower table.

DOUBLE-FLOWERED ZINNIA (Z. HAAGEANA).

SUMMER FLOWER GARDENING.

THE latter part of May and the early part of June is always a busy time in flower gardens. Bedding-out, as it is termed, then requires full attention, and, previous to beginning to plant, everything should be in readiness, in order that the work may be done quickly when it is started and under favourable weather. It is always a safe plan to have the soil for bedding plants moderately rich and firm in the beds. Most people will, of course, please themselves as regards the way in which they make their beds, but in my opinion raised hillocks of soil are much more unsightly than flat surfaces. All the hardiest plants should be planted out first. Calceolarias may safely be put out the first week in May, and so may Pyrethrums, Carnations, and all kinds of plants not required to be grown in a strong heat in spring. Before any of the plants are put in the beds, however, each bed in the design should be roughly traced out on paper, and the position which each plant is to occupy should be marked on it. This obviates confusion at planting time, and in the case of some plants being put out before the others, such as a row of Pyrethrum round one bed and a centre of Calceolarias in another, they can always be planted in their proper places, and the right distances left to fill in with other plants. A plan thus prepared to work by is a great help at bedding-out time, but it is of still greater assistance in autumn, when the numbers of each plant required can be recorded. Where there are only a few beds to fill, and plenty to put in them, people can indulge in putting the plants in close enough for immediate effect, but in large gardens this can seldom be done. When plants are put in widely apart the soil in which they are planted should always be rich, because when they begin to grow they soon fill the beds; on the other hand, when they are put in closely together the soil should be rather poor, or the plants soon become a disorderly mass. Calceolarias, Geraniums, Verbenas, and plants of that kind, may be planted from 8 in. to 1 ft. apart in ordinary soils. For present effect some plant as close again as this, but the result in the end is not more satisfactory than in the case of wide planting. Alternantheras, Iresines, and all dwarf carpet bedding plants should be put in from 3 in. to 4 in. apart. A moderately rich soil suits these plants much better than an

excessively rich one; both growth and colour are more refined in the former than in the latter. All kinds of succulents of the half-tender type should nearly touch each other when first planted together in beds. The hardy or alpine sorts may be allowed space according to their habit of growth, but none of them should be planted too wide, as few of them, except creepers, will extend very far in one summer; and to see more space bare than is covered with plants is not desirable.

The most important matter connected with bedding-out, however, has yet to be named, and that is, hardening off the plants. I know from experience that this is often more difficult than raising or planting them out. In many places there is no scarcity of accommodation for bedding plants in early Vineries, Peach houses, &c., in February and March, but it is bringing them from these warm houses to the open beds in May without injury that requires study. Light deal frames with glass sashes are the proper places in which to harden them off, but few indeed have enough of these to meet their requirements. Many temporary erections can be put together, such as screens; but when these cannot be depended on to ward off 5° or 6° of frost and cold winds, the plants should not be placed in them until, say, the 1st of May. Previous to this they must be kept in the coolest house available. Our plan is to grow every plant as rapidly as possible up to the first week in April, and then to begin to harden off as quickly as circumstances will permit. It is, however, wrong to do this too quickly, especially if the plants have been grown in a strong heat previously. Some plants may not seem to suffer much from a sharp change such as this, but it does check them, and they often show it even after midsummer. In our own case we always harden off as soon as the plants are large enough. Plants set under the shade and shelter of trees and walls never get properly hardened off, and when they are kept there until they are taken straight to the beds and planted they suffer about as severely as planting them direct from under glass. Showery weather is a fortunate occurrence during bedding-out time; the labour which it saves is very great, and the advantage which it confers in starting the plants freely into growth at first is no small advantage at the beginning of a hot summer. When the ground is so wet as to stick to the feet boards should be used in planting. As each bed is planted the Dutch hoe should be run carefully between the plants, leaving the surface neat, level, and free from large stones. This should be done whether the soil be wet or dry. When the plants have to be turned out during dry weather they should be watered two or three days after planting; one good watering at that time will do more good than damping the surface every day for two months. Tender plants of a sub-tropical character should be planted last; and careful and gradual hardening off is especially necessary in their case, as a check to them at first often makes them unsightly during the whole season. Surplus plants of all kinds should never be thrown away when a spare corner can be found in which to plant them, for they produce cuttings in autumn and save the bedding plants, which is no small consideration, as many flower gardens are much disfigured by half of the plants being cut away for cuttings just when they are at their best. C.

French Lavender (Santolina incana).—This is one of the most useful of plants for forming edgings or divisional lines, and, being of a whitish-grey tint, it may be employed in many varying combinations. Its habit of growth is neat and compact, and, being hardy, it especially commends itself to those who have but a limited amount of glass structures. I put some cuttings of it in under hand-glasses or lights in September which will make excellent little bushy plants for furnishing beds this spring. By having a good supply of this, and such plants as Violas, Polemonium cœruleum, Golden Thyme, and similar plants, bedding-out, as it is called, becomes a more reasonable affair than when all the subjects employed are tender.—J.

Sowing Sweet Peas.—Sowing these where they are to bloom is much to be preferred to sowing them in pots or boxes; and if I were asked to name a time at which to sow them, I should say the middle of March, if a good long season of bloom be wanted. Last year I sowed at the time just named in the open ground, and also a few in pots, for the sake of experiment, in soil well prepared. Those in pots I put under glass, and when up hardened them off in a cold box pit, afterwards planting them out beside the others. Those sown in the open

Zinnia Darwini compacta.

ground commenced blooming as soon as those from pots, were much stronger, yielded much the largest quantity of bloom, and continued longer in that condition; in fact, they bloomed till the flowers were killed by frost. I find that if one wants them to bloom for a long time continuously, it is a good plan to cut off any pods that may form on them as soon as they are visible, as the pods if left on the plants exhaust them, and they soon cease blooming profusely.—C. F.

Dwarf Roses for Growing in Borders.—Dwarf Roses may be conveniently used in the formation of borders, as well as in beds and round baskets, or on the edges of clumps. Such borders are remarkable, not only for the abundance of flowers with which they are covered during the whole season, but also for the variety of colours which may be obtained by grouping different kinds together, as well as for the ease with which this sort of Rose is cultivated. All that is necessary is to prune the trees so as to induce them, if possible, to throw out new shoots from their base which will cover the whole of the soil beneath them. To make a Rose border, several parallel or concentric lines are planted, according to the shape of the bed. The Roses are about 4 in. from each other on each row, the rows being 8 in. apart. Less than three rows should not be planted if we wish to obtain a happy effect; we can, however, increase that number, according to the result we desire to obtain. By graduating the height of the plants from the first row to the last, so that they gradually increase in size, or else so that they increase so far as the middle of the bed, and then decrease to the other side, we obtain a bed of single or double slope as we please. The first form is most suitable for the borders of shrubberies, the second for open beds or baskets. We give below the names of those varieties which are most suitable for growing in borders. They must be planted according to their height, the smallest in front:—1. Laurence's Glory, very small flower, crimson-purple; 3. White Pompon; 3. Pompon bijou, light pink; 4. Pumila, a variety of the Noisette, white; 5, Double multiflora, globular flowers, pink; 6. La Désirée, bright pink; 7. De Chartres, half double, delicate pink.—J. L.

Propagating Pansies.—It is an easy process to raise Pansies from cuttings during the summer. My plan is to make a bed under a north wall, by using pieces of board 1 ft. in width, and then putting in at the bottom a good layer of brick rubbish; on this I place some pieces of turf, fill in some rough soil, and finally add, as a surface 2 in. in depth, a good open soil, with plenty of leaf-mould and sand in it, and press it down rather firmly before placing the cuttings in it. I select the young growth thrown up from the roots of the plants out of which to make the cuttings, and they are put into the bed some ¾ in. in depth, about 1 in. apart in the rows, and the rows 1½ in. asunder. The cuttings are pressed firmly into the soil, and a good sprinkling of water is given them. Keep the bed moist and cool, and shade it from the sun, and there will be no difficulty in striking cuttings and in getting fine young stocky plants for spring use. When the spring plants are lifted, at the time the beds are cleared for the summer display, they should be cut close down, and then planted in some spare spot, using the siftings of the potting bench to plant them in, and place about them. They will soon begin to make a free growth, and will bloom in the autumn. I now reach the time when the method of getting plants for summer flowering must be pointed out. I obtain them from the plants lifted in the spring and planted out, or just divided. In September I lift a few of the roots, pull them to pieces, and a large number of the young shoots thrown up from the roots will be found to have rooted. A number of these are selected, and planted out in a carefully-prepared bed for the winter, and by the early part of May they will be good tufts, and will throw up flowers. It is better to do this than to trust to the plants used in spring to carry one through the winter; as some sorts will stand well, while others fail, and then there are blanks in the bed.—D.

Perpetual Carnations in Open Borders.—Having a large stock of these, and relying on young plants for winter blooming, we last spring planted out in mixed borders a quantity of the best varieties. They soon made flowering shoots in abundance, and during the summer and autumn months their blossoms proved very acceptable. These Carnations, therefore, are desirable plants for those who appreciate cut flowers during winter, and who have but a limited amount of heated glass structures; for, although they expand their blooms more readily in a temperature of from 50° to 55°, they will yield satisfactory results in cool houses, and even out-of-doors.—J.

Begonias in the Flower Garden.—We had five beds of these last year, and nothing could have been more satisfactory; all were seedlings except one bed, which consisted of B. Weltoniensis, and this variety proved very suitable for such purposes; being of rather a rigid growth, it ought to be planted pretty thickly. Anyone contemplating trying the culture of these plants should procure a packet of seed from some nurseryman who holds a good collection of them, and if a little care be bestowed on sowing, it is astonishing how many plants can be raised from a 2s. 6d. packet. I had over 240 last season from one packet; and many beautiful flowers, both single and double, were the result.—A. H.

Variegated Jacob's Ladder.—This was one of our best plants for edgings to borders and beds last season. It is perfectly hardy, even in Scotland, and may be propagated from cuttings with but little trouble, though it strikes root but slowly. Its botanical name is Polemonium cœruleum variegatum.—B.

Auriculas Out-of-doors.—We grew these from seed last year, and planted them out in the open ground in October, where they have remained all through the winter with no protection from frost, though the crowns were kept from snow and rain by a small piece of glass

supported by a brick sloped over them, and they have now been in bud for some time. Last week the first blossom was fully expanded, and many more will soon be out.—A. E. A., *Southampton.*

IMPROVING LAWNS.

Now is a much better time to alter, renovate, or improve lawns than further on, when the Grass is in full growth. Doing anything then very often spoils the lawn for the best part of the season; but if done now it will be in fine order by the beginning of the summer, and will remain good throughout the season. No lawn will ever be found to remain good for any length of time that has not been well made at first. A good firm foundation, and not less than 3 in. or 4 in. of good soil for the Grass to grow in, will keep a lawn always in order. Sometimes there are holes which gradually sink here and there in different parts of the Grass. In that case the turf should now be cut, and either lifted or folded back from these parts. A quantity of good soil should be put in to fill up the hole to the surrounding level, and the turf should be put over again, and beaten down firmly. Edges of turf near walks which have become ragged and broken should be taken up altogether, and fresh turf put down. The edge turf should be at least 6 in. wide, and sound and firm. Those making new lawns with seed should always try and get as much good turf as will make up the edges. This keeps the whole together, as it were, and always makes a good finish. In extensive lawns there is seldom any attempt made to dig out or exterminate the Daisies; but in small places they are objectionable, and attempts are generally made to dig them out or kill them in other ways. Many never think of doing this, however, until they are in full bloom in the middle of the season, and by digging them out then holes and bare spots are left unsightly on the lawns. To avoid this, now is the time to dig out all such. After doing so, level the holes up firmly with some good soil, and sow a little of the seed advertised as "lawn mixture" over them. Where the Grass is thin and poor-looking all over, a little fine rich soil should be spread over it, and a thin sprinkling of seed should be sown over that. By May the new soil will have become thoroughly incorporated with the old Grass, and the plants from the new seed will soon combine with the old to make a charming lawn. Where Moss has taken possession of most of the Grass, a thin sprinkling of lime should be spread over it; and soot used in the same way has the power of giving the Grass a rich pleasing deep green shade. Wood ashes, too, may be used in the same way with much advantage. All these are better applied separately, as lime robs soot, &c., of its goodness. Lawns which want no fresh turf or seed should be brushed over firmly with a good broom, to clear off all worm casts and such like; then roll them over two or three times to make them firm and smooth for the Grass-cutter. A wet day, or when the ground is very moist, is the best time to roll, as the ground can be worked down more smoothly then. Verges or edges of Grass should not be cut every year, as this soon widens the walks, and a deep raw edge looks unsightly. Cut them once straight, then keep them so by merely straightening the bulged-out parts afterwards.—C.

Worms in Lawns.—Worms instinctively look for moisure. In wet weather they may be found at night by scores on the surface of the lawn. Last year, after a fortnight's heavy rain, I treated my lawn to a dose of lime water, by stirring up a very small handful of Irish lime in each gallon of water, poured the solution on the grass without a rose, and picked up the worms as they came to the surface. I filled a 7-in. pot twice with the proceeds in the shape of worms, then rolled the green; and on the following day the smaller and weaker worms were lying dead in hundreds on the surface. The work occupied a whole day, but the green has been beautiful a whole year. The larger worms come up in from one to seven minutes after the application, and must be patiently picked up as they rise; consequently only a few square yards of surface must be treated at a time unless there are plenty of helping hands and sharp eyes. The tar water which is got from the wells of gas works is also effectual in clearing a green, but it is difficult to hit upon the strength to which to reduce it. It seems to kill the worms outright, and from its chemical composition it will nourish the Grass. Probably one part in six or seven of water will suffice.—M. D.

PLANTING OUT WINTER-FLOWERING PLANTS DURING SUMMER.

I do not wish to find fault with those who adopt and recommend growing such plants as the berry-bearing Solanums, Salvias, Eupatoriums, Arum Lilies, Deutzias, Dielytras, Libonias, &c., in pots all the summer, as I have no doubt success may be obtained in that way, but, according to my opinion, at a greater cost for labour, &c., than when they are planted out. Part of the success of planting such plants as those above mentioned in the open air in summer depends upon the site selected for them. If planted in very rich land they are apt to become gross, and therefore do not lift well in autumn; often they lose their lower leaves, and do not flower so freely afterwards. Again, if the pinching or stopping of the growing shoots be neglected, a straggling habit is engendered, which is difficult afterwards to put right. The pinching should be done when the removal of just the terminal bud will suffice to give the requisite bushy habit. If delayed until several inches of wood have to be pinched off, there is a waste of power, as a greater check than is necessary is given, and, in our short summers, time lost is never recovered. Assuming that an open-air sunny position, where the ground had been some time previously well worked, is available, and that

Striped Zinnia (Z. Darwini vittata).

the plants intended to be put out are brought forward and regularly hardened off, about the end of May is a suitable time to plant. In allotting space to each species, the size which they are likely to reach should be considered, as it is better to have a few well-grown plants than a greater number of ill-developed ones.

Where only medium or small-sized plants are required, cuttings struck early in the season—say now—will, under good management, make good specimens, but when large plants for conservatory decoration are desired, then one, two, or even three-year-old plants, of some kinds, will be more suitable. If any of these be cut well back when the flowering is over, or say about April, and planted out about the end of May or beginning of June, they will make handsome well-furnished bushes for the following winter. It will be very beneficial to mulch the surface of the ground amongst and around the plants as soon as they are planted. Mulching tends to keep the roots close at home and near the surface, which will be found to be of immense advantage to them when the time comes for lifting and potting them, as the less the roots are cut about then the better; and, for the same reason, in very dry hot weather water should be given when necessary, but if well mulched water will not often be required. The period for lifting may vary a little, according to situation, but in most places the middle of September will be as late as they should remain in the beds; and about ten days previous to lifting, the roots should be cut round with a spade at varying distances from the stem, according to the size of the plant and the size of pot they are to occupy, leaving as much root as possible.

If the plants are growing in rich soil, and at any time show symptons of grossness, a spade thrust into the ground at a suitable distance from the stem, so as to sever some of the roots, will correct this, and ensure the production of wood which will be fertile as regards blossoms. This plan of checking the roots a little with the spade will not take up much time, and may be resorted to when necessary during the growing season. It will promote a larger root developement close at home, which will be found to be of great benefit when the plants are lifted. After they are potted into suitable-sized pots (which should not be too large) they should be placed in a shady position for a few days, still keeping them in the open air, as the longer they can remain in the open air, if safe from frost, the better, as it will enable them to become well established before being housed; and they will be less likely to lose foliage than if lifted and moved into a drier and warmer atmosphere at once, before the roots have fairly recovered their power of supplying the wants of the plants. The advantages of planting out are at least twofold—it saves labour, and secures a better development if fairly carried out. Neither a very rich soil nor yet a poor one is so good as one of medium quality. Where the soil is poor and sandy, a little better soil should be placed round the roots of the plants when turned out.

E. D. Y.

COLD PLANT HOUSES.

Do we make as much of cold plant houses as is possible? I am afraid not. Heated structures are now fashionable, and a really cold plant house is somewhat of a rarity, and a well-stocked one still more uncommon. A cold greenhouse in a sheltered, sunny nook near the dwelling-house forms, or may be made to form, an extra apartment of much interest; and it is quite possible to have it stocked with attractive plants all the year round. For winter and spring-flowering bulbs and herbaceous plants such a house is invaluable, and during summer and autumn it may easily be rendered gay by means of flowering shrubs, annuals, and bulbs of many kinds. No day in the year need such a structure be dull or uninteresting. There are hundreds of species of plants that are so nearly hardy that a cold frame, or even a hand-light, will protect them from the vagaries of our climate; and such as these would be quite at home in a cold plant house. In reference to this matter, a lady correspondent has lately written to me as follows:—

"For several years I have been trying to find out of what a cold greenhouse is capable, and people are sometimes surprised to see what can be done in the way of interesting and even showy plants without much heat. Some Oxalises are admirable for early spring. Just now the early Primulas—denticulata, pulcherrima, and purpurea—which I raised myself from seed, are lovely. Orobus vernus is very pretty, and living, as it does, in the same pot year after year, it gives one no trouble. Myosotis dissitiflora is also very charming, and Saxifraga ciliata has pleased me greatly. Hyacinths and Narcissi are not so early or satisfactory as usual, but are now coming into flower very fast. I wish very much you could be persuaded to take up the subject. Mr. Grieve, recently writing in Gardening, speaks of unheated greenhouses being unsatisfactory; but I do not think they need be so if one does not attempt too much; and heated plant-houses are often so prejudicial to health that ladies who are at all delicate are debarred from a most healthful and interesting occupation on that account alone. On the other hand, unheated structures supply the shelter both to the plants and their owners which is so desirable in winter. Two potfuls of Crocus Imperati, sent me by the Rev. H. Harpur Crewe, gave me this winter more pleasure than I can say, lasting quite a month. In a warm house they would have been drawn up and almost ruined for another season; and so with many other hardy plants whose natural blooming time is mid-winter. I should very much like to see the subject discussed in the gardening papers, and thus to learn more of the hardy plants suitable for the purpose."

What might we not do in such houses with such plants as the variegated Yuccas, Agaves, and Aloes, Ruscus androgynus, Camellias, Azaleas, Arum Lilies, Tree Carnations, Ericas, Epacrises, and the finer kinds of Rhododendrons,

including all the Sikkim-Himalayan kinds, many of them the finest of foliaged plants, with flowers as large as those of Lilies, and fragrant withal! Then come the hardy and half-hardy aquatics, Hippeastrums, Blandfordias, and many Cycads and Ferns, such as Adiantum pedatum; and Orchids, such as Orchis foliosa, O. latifolia, O. maculata in variety, Cypripedium spectabile, and others. The rosy and the white Water Lily should also have a place in such a house; and Moutan Pæonies, Dielytra, and the dwarf tuberous Spiræas, Primulas, and Auriculas in variety, should have a corner devoted to them, or a cold frame from which they may be brought in to bloom. What a little garden might be made of a cold house by training Clematis indivisa, Lapagerias, and Fuchsias on the roof, planting Camellias of different sorts in a central bed, keeping the side stages for portable pot plants. So much for a general cold plant structure; but the specialist might build a new or alter an existing house for hardy aquatics, of which there are many—Thalia dealbata, Trapa, Richardias, Nymphæas, Pontederias, and many more. A hot, dry structure would do for succulent plants in variety, or a cool, moist, shady one for Ferns. I am merely jotting down suggestions in the hope that others may fill in the practical details. Those who do not believe in absolutely cold plant houses might do well to tell us of their disadvantages; but most welcome will be the contributions of those who will give us the results of their experience in their management. I may just allude to the fine Temperate House at Kew, which is but slightly heated, and yet the results are very satisfying to many. F. W. B.

VEGETABLES.

Scarlet Runners.—This useful vegetable, which has long been a favourite, still retains its well-merited popularity. The artisan who has only a small yard for a garden often, with considerable labour and ingenuity, improvises a bed for Scarlet Runners, and so not only secures a frequent dish of his favourite vegetable—rendered all the sweeter from the trouble incurred in its production—but clothes and beautifies his back premises at the same time. As a vegetable for small gardens this takes precedence of the Pea, and although Scarlet Runners have been cultivated in positions where most other vegetables would fail, yet at the same time scarcely any crop makes a better return for liberal treatment. Depth of soil and plenty of manure are important matters, and the benefits that accrue from autumn and winter culture need not now be enlarged upon, having been so often referred to in these pages. Commence planting from the first to the middle of May, according to the position and latitude of the place. The young plants are very tender and early-sown crops are often ruined by spring frosts. Plant in drills 6 in. or 7 in. wide, two rows in each drill close to the sides, and the Beans should be planted 6 in. apart in the rows. Draw the drills with a hoe about 3 in. deep, the same as for late Marrow Peas. The rows give a larger crop if they can be isolated, with dwarf vegetables between them. If placed parallel to each other they should not be less than 5ft. apart, and even more space would be preferable. The second crop should be planted about the first or second week in June; and although in all probability the first crop, if properly managed, will continue bearing till cut off by frost in autumn, yet if in the event of a dry, hot summer it should be checked in the midst of its bearing, it is always a good plan to make two sowings. They should be earthed up and staked before the plants begin to run, and the strongest sticks that can be obtained should be reserved, especially if the situation be exposed, as the wind has considerable power upon their thick, close growth. It is important that the Beans should be gathered as soon as fit for use, especially during the early part of the season, as seed-bearing tends to exhaust the plants and stop the production. Later on in the season, when the nights are longer, should it be desired, a few pods may be left to produce ripe seeds without doing so much injury. In small gardens, where land is valuable, they may be planted in circles 2 ft. or so in diameter, with about a dozen Beans round the circumference. The patches may either be grouped together or be placed along the sides of a path convenient of access—of course in both cases leaving sufficient room for the free admission of light and air to circulate between the patches. In some cottage gardens I know this is rather a favourite way of planting them, and it is considered they are more productive when so treated. The strong leading shoots, when about 4 ft. high, should be stopped, and again when they reach the tops of the sticks, which should be 6 ft. high if possible. This stopping strengthens the plants, keeps them at home, and leads to great productiveness. In hot weather mulching is very beneficial, and two or three good soakings of water during a sudden drought when the plants are in flower will assist the fertilisation and save the crop. Scarlet Runners may also be grown without sticks by adopting a system of close pinching; but in small gardens some mode of training should be adopted, as the space upwards adds nothing to the rent, no matter how densely it may be occupied.—H.

The Currant Tomato.—This is very ornamental when grown in pots. It requires exactly the same treatment as other kinds of the

The Currant Tomato.

Tomato. The seed should be sown at once in a warm house or frame. When large enough the seedlings should be potted off singly into small pots, and shifted on as becomes necessary. The best soil is turfy loam, with enough sand added to make it porous. Too much wood should not be allowed; and those shoots which remain should, when sufficient fruit is set on them, be stopped by pinching out their growing points. When the fruit is swelling occasional doses of liquid-manure will be of benefit. This Tomato may be used for culinary purposes, and it is especially suitable for pickles.

One or two Plain Facts respecting Potatoes.—A great authority on Potato culture tells us that "handsome seed begets handsome Potatoes"—an assertion I am not prepared to contradict; but I am prepared to say that ugly seed also begets handsome Potatoes. Last season, wishing to increase my stock of Schoolmaster, I picked all the best-looking ones out and planted them side by side with some of the worst-shaped seed I ever saw; nevertheless in lifting them I could discern no difference, all being alike handsome. As regards cut and whole Potatoes, I planted half an acre cut and half an acre whole, so that I might prove which was the best plan, but on digging up the produce there were six of one and half-a-dozen of the other.—R. G. B.

PARSNIPS A SUBSTITUTE FOR POTATOES.

ONE would have thought that, with the great uncertainty attaching to the Potato crop, Parsnips would have come more into requisition than they appear to have done up to the present, as they are not only more nutritive than Potatoes, but they will grow and flourish in soils and situations in which the latter would become diseased and worthless for eating. Irish people seem to depend almost entirely on Potatoes; but if they would only turn their attention more to Parsnip growing, much of their distress during the past winter might have been averted, as the yield in weight from such a summer as last would have been something enormous, the wet having just suited Parsnips and swelled their roots out to a considerable extent. Although they may not come quite so large during a dry season, they never fail, and are therefore a most profitable crop to grow either in fields or gardens; for should the whole of them not be required for use as vegetables, they are valuable for cattle feeding, for which they are largely cultivated in Guernsey and Jersey. Many years ago Potatoes did not come much into consumption, but now a dinner is not considered complete without them; and, after a time, when prejudice has worn away a little, it may be so with Parsnips. The flavour is considered objectionable by some; but by daily use one soon acquires a liking for them, and if we have a few more turns of such a scarcity of vegetables as we have had for many months past, we shall train our palates in such a way that Parsnips will not come amiss to us.

To grow their roots well, and get them fine and long, the soil must be thoroughly stirred to a good depth, that the root may have a fair chance to run down; for if the earth is hard and lumpy fangs are induced, and these spoil the shape and symmetry of the root, and render it unfit for the kitchen. Fresh rank manure has much the same effect, and therefore ground intended for Parsnips should be free from this; and if it can be arranged for them to follow some other non-exhaustive crop without giving manure, all the better, as the skin is sure to be clearer and whiter than it would be if grown in land full of rich matter. Rather than sow in such, it is advisable to give a dressing of guano and soot after the plants are up, or a mixture of the two, as so combined they are a most excellent stimulant, and one that is most obnoxious to wireworms and grubs, both of which are great enemies to root crops like the Parsnip, as they nip through the main roots and cause them to flag. Some of the best cultivators of Parsnips sow in September, but the objection to this plan is that it is a difficult matter to keep the ground clean for such a length of time among the growing plants, as weeds have so much chance to get up and ahead of them before anything can be done to check them by the use of the hoe. Taking this into consideration, I prefer the middle of March, or as soon after as the soil is in fit condition to work on, there being nothing gained by hurrying them in when it is wet and unfavourable. To afford plenty of room the drills to sow in should be at least 15 in. apart, and the plants, when up, thinned out to 1 ft. asunder, which will allow space for the full spread of the foliage, without which the Parsnips cannot attain to a large size or ripen up so well in the autumn; and on this much of their quality depends. Many take the roots up and store them for the market; but it will be found that the flavour is greatly improved by the action of frost, which has a sweetening and mellowing effect, doing away in a great measnre with the strong taste some eaters of Parsnips object to. For growing in fields, it takes about 5 lb. of seed to the acre: and now that the price of corn is so low, it may be worth while for farmers to try these, and keep more stock, as the feeding value of Parsnips is unquestionable, and they would also make a remunerative return in the market. The Guernsey and Hollow Crown are the largest and best for field culture, but the Student is in most esteem for gardens; and this latter is of good form, and its cooking qualities are excellent. S. D.

House and Window Gardening.

GENERAL TREATMENT OF WINDOW PLANTS.

It will naturally be understood that cleanliness is of the first importance to plant life. Leaves breathe, as it were, through their pores, and if these be choked by impurities of any kind, the functions of the plant are in a manner paralysed. The more confined the atmosphere the greater need is there for frequently washing and syringing. All plain, hard-foliaged kinds should be well sponged, using plenty of clean tepid water. Ferns, Mosses, &c., may be gently but thoroughly syringed, taking care that the under surface of the foliage is well cleaned. Insects often make their appearance, and must be kept under either by brushing them off with a soft brush or by means of fumigation. The latter is the most effective method, although if the stitch-in-time principal be acted upon and the first insects destroyed, there will seldom be any need for it; should a plant, however, become badly infested, place it under a tub and fill the same with Tobacco smoke. Two applications at the interval of a few days will generally suffice to clear them all off. When we come to watering we touch the most difficult part of our subject. It is utterly impossible to lay down hard-and-fast rules: the attempt to do so would merely result in disastrous failure; nothing but practice can give proficiency in this branch of plant culture. The great point to be kept in view is, that in winter water is merely required to maintain life; whereas in summer, when the functions are active and growth progressing, enough must be given not only to supply waste, but to allow of the extension and formation of new tissues. Were these facts kept constantly in mind, there would not be many disasters arise from over-watering. In dull, sunless weather, let each plant dry out thoroughly, and then give just enough to well moisten the ball of earth. In a hot parching time this care is not so needful; if the roots are healthy, and the plant growing freely, copious and frequent waterings must be the rule. These general rules will form a basis upon which the grower may safely work. They will, however, have to be varied and modified according to circumstances and the plants cultivated, but for the acquirement of this knowledge he must rely upon constant practice and unremitting attention. In the matter of ventilation, be careful to avoid cutting draughts; much harm is often done by injudicious air-giving. Do not, either, run into the common error of turning your plants out upon the doorsteps or balconies in weather which, although sunny, may yet be of a chilling nature. Harden gradually on the approach of spring by increasing the amount of air, and only turn them out-of-doors on mild moist days. A safe rule is to be guided by one's own feelings; if the atmosphere be congenial to the human frame it will be beneficial to plant life, and *vice versa*. That, at least, is the conclusion at which I have arrived.

Potting and Propagating.

Many who grow window plants make a point of getting them shifted by a professional cultivator. This is, however, by no means necessary, and is wrong in principle, as the nature of a plant is but imperfectly understood if its root action cannot be observed. I would advise that the soil be purchased at a nurseryman's, stating for what kind of plant it is required. Be careful never to give large shifts, and see that your soil is well sanded and not too rich; any little deficiency in nutriment can easily be supplied by a top-dressing of any of the concentrated manures. For Ferns and delicate-rooted subjects allow plenty of drainage; in fact, all kinds of plants grown in rooms should be amply provided for in this respect. Nothing can be more injurious than the stoppage of the drainage, and to secure immunity from injury in this respect each plant should be examined at the commencement of the winter, and fresh drainage given, if found necessary, using some good clean potsherds or broken charcoal for that purpose. There is no reason why window gardeners should not try their hands at propagating; it is amusing, and greater pleasure is derived from the culture of home-struck plants than from those which have to be bought. Most of the so-called soft-wooded plants may be increased with ease, and if a few cuttings be put in every year, they will supply the place of plants which get too large. The appliances necessary will consist merely of a few bell-glasses, some soil of a light description, and some silver sand. Fill the pots to within 2 in. of the rim with soil, and finish off with sand, making the pot quite full. The pot should be filled about one-third of its depth with drainage. The cuttings are inserted in the sand and kept covered with the bell-glass until rooted. Fuchsias, Heliotropes, Verbenas, Lobelias &c., may all be struck in this manner in an ordinary living room. Pelargoniums only will need no covering. Put each cutting in a small pot; it will root freely enough. Seeds of annuals may also be raised by sowing in a pot filled to within 1 in. of the rim, and covered with a piece of glass until fairly up. I have here indicated comparatively little of what may be done in the way of window gardening, but enough, I think, to enable even beginners to try the undertaking with a fair prospect of success, I trust that they may not be daunted by a few failures; for, permit me to add, in this as in every other branch of gardening, there is no royal road to success. J. C.

The India-rubber Plant (Ficus elastica).—Of all plants grown for their foliage for market purposes this is the most popular. It is one of the best London window plants in existence,

The India-rubber Plant.

and a plant which will grow and keep healthy in the same pot for years if well supplied with water. Nearly every florist around London grows as many plants of it as he has room for, and yet it keeps up its price in the market. It is propagated by means of young tops of growing shoots, which are taken off and struck in the same way as those of Dracænas, old plants being generally grown to provide them. In windows the leaves should be frequently sponged. The plants require light and air and plenty of water. If placed in a draughty room, their leaves turn yellow.

Vitality of Seeds.—Five years ago, when on the passage between Liverpool and Bordeaux, I had a packet of Hunt's Sweet William seed given to me by one of my passengers. Three weeks ago I sowed it, without the least hope of its germinating. To my surprise, I find that the seeds have burst, and are doing well.—Captain R. M. Bell.

Destroying Gooseberry Caterpillar.—The simplest method I could devise last summer to destroy these pests was to fill a common hand-bowl half full of boiling water, and, holding it under the tree with one hand, nip off such leaves, or a portion, as were attacked with a pair of scissors, and let the caterpillars fall into the bath. I counted a quarter of an hour's work one time, and found I had 260 carcases.—J. Hiam.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

April 29.—Potting off Cyclamens, Lantanas, Globe Amarantus, the last of the Dahlias; sowing White Cape and Miller's Late Broccoli, and French Beans; planting Violets and Lettuces from frames, and pricking off herbaceous Calceolarias, Ice-plants, and Sweet Basil; putting in cuttings of Alternantheras; also another batch of Pinks; syringing Apple trees in orchard with alum-water to kill blight; putting strings over Peas to keep off birds; taking lights off bedding plants on all favourable opportunities; tying down Vine shoots, and keeping Muscats in flower at 70° at night and 95° by day; sowing G. F. Wilson, Veitch's Perfection, and Giant Emerald Marrow Peas; also Mammoth and Long Pod Beans; pricking off Asters, Poppies, Stocks, and Violas; potting off Verbenas, and Heliotropes; Clearing off the stumps of green Curled Kale and other Greens; manuring the ground and getting it dug up for other crops.

April 30.—Sowing Autumn Giant Cauliflower; also Autumn Self-protecting and Winter White Broccoli; putting in cuttings of Alternantheras and Coleus; removing bedding plants from pits to convenient places to harden; thinning Carrots and Radishes on early borders; renovating linings round frames; taking the guards off Peas somewhat advanced and putting them over newly-sown ones; sowing Indian Pinks and Mignonette in the flower borders; also Dianthus Heddewegi, Centaurea Cyanus, and Aubrietia purpurea and græca; planting spring-sown Cauliflowers between Asparagus beds, and Lettuces on Celery ridges; making a new bed of Keen's Seedling Strawberries with plants that had been forced; moving all Dahlias out of heat; emptying and re-filling vases with fresh soil; syringing Peach trees on walls out-of-doors with a mixture of Tobacco-water in order to keep down green and black fly; digging up and removing Winter Greens as fast as they become useless.

April 21.—Sowing another batch of Primulas and Balsams; also Brussels Sprouts, Curled Greens, Cottagers' Kale, Buda Kale, Walcheren, Backhouse's White, and Snow's Winter White Broccoli; planting Asparagus on newly-prepared beds; also more Cauliflowers, and a border of Lettuces; dipping Capsicums and Chrysanthemums infested with green fly in Tobacco-water; sowing Radishes, Mustard and Cress, French Marigolds, Celosia japonica, and Cockscombs; planting out Golden Feather Pyrethrum into rough frames; looking over Pelargoniums and other bedding plants, and stopping them where required; thinning out Lettuce plants; getting out trenches for Celery, and hoeing amongst growing crops.

April 22.—Sowing Turnips, Spinach, and Melons; potting off and looking over all Strawberries that are well set, and picking off all weak blossoms and deformed fruit; earthing-up Potatoes in frames; thinning out Turnips and hoeing amongst them; looking over French and Nectarine trees on walls and washing them with Quassia-chip water to kill green fly; sticking Peas and earthing them up a little; potting Mrs. Pollock Pelargoniums and Perilla; planting out Neapolitan Violets and hardy Azaleas; hoeing among spring flowers, thinning Turnips, and examining Rose trees for maggot; top-dressing Cucumber plants growing in large pots and tubs with rich loam; keeping Alicante Grapes that are in flower at 70° at night.

April 23.—Potting Czar Violets for blooming next spring; sowing French Beans, more Radishes, and Mustard and Cress on borders; also sowing main crop of Scorzonera and Salsafy; hoeing among growing crops; earthing up Potatoes on early borders; syringing Peach trees out-of-doors with Tobacco-water and soft soap; shifting Gnaphaliums from houses into cold pits, and giving a little artificial manure to Azaleas Camellias, Heaths, and Epacrises; making up hotbed for Pink cuttings, and staking and tying up the flower-spikes of herbaceous Calceolarias; potting off Gourds, Sweet Basil, and Marjoram; pricking off Winter White and Autumn Self-protecting and Autumn Giant Cauliflower into frames; giving all Rose trees that are infested with green fly a good washing with Quassia-chip water; looking over Cucumbers and Melons, picking off all false blossoms and stopping them where required, also fumigating them in order to kill green fly.

April 24.—Potting on ridge Cucumbers and Vegetable Marrows; rolling down gravel and turf; forking amongst early Potatoes; thinning out Spinach and tying up Lettuces; potting Anne Boleyn Pinks in a mixture of cow manure and loam; shifting young Fuchsias into 8-in. pots for conservatory decoration, and potting off Mesembryanthemums and spring-struck Heliotropes; also shaking out and re-potting standard Verbenas; sowing Paris White, Green Cos and Neapolitan Cabbage Lettuces; also Majoram and Globe Turnip; thinning fruit in Peach-house, leaving one to each shoot.

Glasshouses.

Dipladenias should have their shoots regularly trained to the strings or wires that support them, otherwise they get into a confused mass, from which it is impossible to separate them without injury. Such as are intended ultimately to bloom on trellises should not be trained on these until the young growths show a sufficient quantity of flowers, as bending the shoots down will in all probability have the effect of stopping their further extension.

Bougainvilleas.—Specimens of these in pots intended for conservatory decoration, where they will necessarily be in a lower temperature than that of the stove in which growth has been made, require special treatment in order to prepare them for this. B. glabra is by far the easiest managed and most useful for this kind of work. In order to bloom it well from the time when it is started into growth in winter or spring, the soil must never be allowed to approach a dry condition, such as would cause the leaves to flag,

even in the least, for when that occurs the shoots generally make little further progress, in which case the quantity of flowers which they produce is very much less than where vigorous uninterrupted growth has been maintained. For a like purpose the young shoots should be kept temporarily tied up in an erect position until the full complement of bloom is visible. As soon as the bracts of the earliest have got to about three-fourths their full size, and begun to attain their colour, the plants should be moved from the stove into a cooler, but not a cold, house. Here the flowers will come on slowly, and will last, after getting their full size, six or eight weeks, and they will be deeply coloured. If, in place of being treated in the manner recommended, the plants be allowed to remain in the stove until the flowers are fully matured, and then moved into cooler quarters, it usually happens that they all fall in a very short time.

Gardenias.—Any plants that have been forced into bloom early, and that have now done flowering, should be freely cut back, well cleaned from insects, and returned to the stove. As soon as growth commences they should be moved into larger pots, or, if not required to be grown to a larger size, a portion of the old soil should be shaken out, and the plants should be replaced in fresh material in the same pots which they previously occupied. The compact-growing, free-flowering G. citriodora is well deserving of cultivation; its beautifully-scented flowers are always acceptable, and its occupying so little room, compared with the stronger-growing G. florida and G. Fortunei, makes it more suitable for those whose accommodation is limited.

Allamandas.—Such of these as are grown on trellises in pots should not have the shoots trained until they show flower, but ought to be kept slightly supported in an erect position, as, if bent down, they keep on breaking out afresh. They will now bear continuously a stronger application of manure water than most plants; they should therefore not be stinted in this respect, as the stronger they get the greater profusion of flowers they will produce, assuming that last year's wood was thoroughly ripened.

Caladiums and Alocasias.—These will now be in active growth, and every encouragement should be given to free vigorous development, not by an over-lengthening of the foot-stalks, but by an endeavour to impart all the strength and substance possible to the leaves, so that, if required, the plants will be able to do service for decorative purposes in a somewhat lower temperature than that of a stove later in the season. The condition to permit of this can only be secured by allowing the plants sufficient room, keeping them near the glass, and using no more shade than is necessary to prevent the foliage being discoloured.

Marantas.—Plants that were increased by division earlier in the season will now be forming root and leaf-growth freely. Encourage a stout sturdy state of the leaves in preference to a soft extended development, which renders the plants wholly unable to bear even for a short time a temperature lower than that of a stove.

Achimenes and Gloxinias. — The earliest Achimenes will now have advanced considerably, and, whether grown in baskets or pots, give them all the light possible, so as to prevent the shoots being drawn up long and weak, for upon this depends their ability to bear an abundance of flowers. The latest started bulbs should, as soon as they are ready, be transferred to the pots or baskets in which they are intended to bloom, and treated so as to make their growth slow and strong. Gloxinias now flowering may be assisted to produce a still longer succession of bloom by giving them manure water, provided the leaves are kept in a healthy, clean condition, free from insects. Large plants intended either for home decoration or exhibition should, if possible, be set on a shelf near the roof and be allowed to come on slowly, treatment that holds good with these plants for whatever purpose they are intended and at whatever time of the year they are required to flower. Gloxinias are so accommodating that they may be had in bloom for eight months out of the twelve; but to have the flowers with the strength and substance requisite to enable them to stand without flagging on the plants when subjected to a lower temperature than that in which they have been grown, or to make them equally of use for employing in combinations of cut flowers, it is necessary that they be grown slowly and under such conditions as are here described, which give them a sturdy character, very different from the weak flabby growth of both foliage and flowers too often met with.

Winter-flowering Stove Plants.—The stock of these, including Euphorbias, Eranthemum pulchellum, Sericographis Ghiesbreghtiana, Thrysacanthus rutilans, Plumbago rosea, Jacarandas, Begonias, and Aphelandras, must have every assistance given them, so as to obtain a stout, sturdy, short-jointed condition of the plants, giving them enough pot room to ensure a plentiful supply of healthy roots, for on this depends their ability to bear the full amount of flowers of which they are capable more than upon shoot development.

Poinsettias.—Moderate sized heads of these plants on stout stems are the most generally useful. A good deal depends upon the character of the house which they are to occupy when in flower; if to do duty in a large structure intermixed with larger-sized plants, they require to be grown proportionately large; and when so managed, on stems from 4 ft. to 4½ ft. high, strong and vigorous, they will produce immense heads, such as are unobtainable from dwarf plants. Where wanted, some of the old stock should at once be started in heat and moisture for this purpose; and if any small stools exist they may be headed down to within a few inches of the surface and grown on with from one to three stems each. If liberally treated through the season they will make fine decorative objects.

Amaryllises.—For conservatory decoration, when in bloom, where they can receive a few degrees more warmth than an ordinary greenhouse affords, these are invaluable; their distinct habit, and the endless variety in shades of colour that have resulted from crossing the best species, particularly adapt them for associating with the usual plants in bloom in such structures through the spring. Whilst flowering see that they do not want for moisture, as active root growth is now also going on; and as soon as they have done blooming they should be at once placed in an intermediate temperature where they will get abundance of light and air every day when the weather is at all favourable. They succeed best in good, strong, holding loam, well rammed into the pots at the time of shifting; as compared with most other plants, they require to be under-potted as to size, though restriction in this respect must not be carried too far in the case of large bulbs that have a disposition to produce offsets, but which, unfortunately, many of the finest seedlings are slow in doing. Of all the plants in cultivation, none are perhaps more suitable for amateurs to raise from seed, or to which more interest is attached; but where crossing is attempted none but the best broad-petalled flowers with well-defined colours should be selected to breed from, and the nearer the colour at the base of the segments approaches to white, not green, the better; this latter is of importance, as it adds so much to the improved appearance of the flowers. Seedlings are generally kept in the pans in which they have been sown, or to which they have been transferred, until they have attained considerable strength, as if potted singly before the bulbs have got some size, with a proportionate amount of roots, they would only bear pots so small that the little soil which they hold would be continually liable to get dry through the growing season, a condition which should never be allowed to occur. One of the great advantages that Amaryllises present to the cultivator is the little space which they occupy whilst making their growth, and during the time they are at rest they can be placed where few other plants would do at all.

Celosia pyramidalis.—This is one of the most useful decorative plants that can be grown; its elegant erect habit affords such a contrast to the generality of other plants, that it is never in the wrong place associated with anything else. If a little seed be now sown and treated in the way in which ordinary Cockscombs are found to succeed, the plants will do well. Like the Cockscomb, it is very subject to the attacks of red spider, which, if allowed to become established, will ruin the appearance of the plants. A free use of the syringe on the under-sides of the leaves is necessary in order to keep them clean.

Flower Garden.

Auriculas.—The named varieties belonging to the florist section are now in full bloom, and this must be preserved for as long a period as possible. Thin out all badly-marked or badly-shaped pips; also thin the flowers of all trusses that have too many pips. Small offsets potted last autumn or early this year must now be potted off, placing the plants in a frame behind a north wall; give them plenty of air, removing the lights altogether in fine weather. See that plants of alpines in beds are attended to, the beds kept clear of weeds, and the surface soil stirred if necessary.

Dahlias.—These must not be too severely exposed to the weather as yet. If the plants are in cold frames it will not answer to expose them to the frost at night with only the glass between them and the open air. Place mats over the frames at night. Remove any plants that are established into the frames, but they must not be placed in frames from a warm forcing house all at once. The plants require plenty of air, when the weather is fine removing the lights altogether. If the best results are to be obtained sufficient space must be allowed between the plants to allow of the free development of the leaves.

Gladioli.—Still continue to plant out a few of these on favourable occasions. If possible the ground should be dry, and it is desirable that it should be well pulverised by turning the surface over when it is in a dry state. Seeds may still be sown, but to ensure the flowering of the plants next year they must be sown on a hotbed. The seeds will germinate in a fortnight, after which air may be more freely admitted to them. By-and-by, when the weather is fine, they may be fully exposed with the lights off. Freely supply the pots with water when the seedlings are in full growth. Run the hoe through amongst the plants that have appeared above ground. The rough, dry surface is a slight protection from frost, but when the collection is but small it is easy to invert a flower pot over each plant at night, removing it in the morning.

Phloxes, and indeed all similar herbaceous plants grown to flower in pots, may now be placed in a favourable position out-of-doors. What the largest proportion of these require are generous supplies of water at the roots and rich potting material for them to work into; and do not allow the plants to be root-bound in the small pots in which they are wintered. Place sticks to the young growths, as they easily snap off at the surface of the soil.

Polyanthuses. — These are now in full beauty, and are very much admired. This is a free, fast-rooting plant, and therefore requires considerable supplies of water at the roots; the frames in which the plants are growing should face the north, but even here it is necessary to shade. Seedlings raised from seeds sown as soon as they were ripe last year should now be planted out in a bed of rich soil behind a wall or a hedge.

Pansies and other small-growing plants of that kind in frames require attention as regards keeping the leaves free from insect pests. A close atmosphere is conducive to the spread of insect pests. All such plants continue in the most healthy condition when air can be freely administered. Should the flowers be required for any particular occasion, it is best to pick all the open blooms from the plants two weeks previous to that date.

Fruit.

Vines.—In some instances early Grapes will now be colouring, a critical stage in the case of Vines that have in previous years been cropped too heavily, or that have not had a sufficiency of water during the present season, conditions either of which tends to the production of shanked berries. If there be any apprehension on this score it will be well to apply the remedy even before the disease shows itself, and that is to water liberally with tepid water, and mulch immediately afterwards with litter or old Mushroom-bed manure, in order to retain the moisture and prevent the necessity of watering again till the fruit is cut; and should there be any misgivings as to the crop being too heavy, it will be better to cut off a dozen bunches at

once than run the risk of three times that number shanking. Good colour and finish can only be attained by free and regular ventilation. Cold currents of air must be avoided, but a gentle circulation of rarefied air is now a necessity night and day. This, of course, implies firing, but that must only be done to a reasonable extent, for the bloom on the berries will be denser if the maximum temperature does not exceed 65°. The air moisture should be lessened, but not entirely withdrawn, or red spider will soon get the mastery. Pot Vines require the self-same treatment, with the addition of more frequent waterings. Late Vineries will now require a large amount of attention in the way of tying down, stopping, and regulating the shoots; and the atmosphere cannot well be too humid or the house be shut up with too much sun-heat from the present time till the flowers open, when a more buoyant and drier atmosphere should be maintained. Do not stop the shoots according to the orthodox fashion, viz., at one joint beyond the bunch, but according to the trellis space there may be naked, all of which should be covered, but not crowded. Any Vines yet to be planted should have early attention, for though they thrive when planted at any season, April may be considered the best time for planting them.

Kitchen Garden.

Beds or plots of Asparagus should now have a dressing of soot, salt, or wood ashes, which will both fertilise the soil and keep off slugs from the young shoots now emerging from the soil. New plots may now be planted in rows 3 ft. apart and 2 ft. plant from plant in the row. The old system of forming beds and covering them up annually with fresh soil should be allowed to become obsolete. If grown on the flat system and in regular lines, and the soil be kept stirred during the growing season, and surface-dressed in winter with either a little fresh soil, rotten manuré, salt, or burnt ashes from the refuse-heap, the best of Asparagus will be the result. Judging from plantations in the neighbourhood of Paris, plenty of space between the rows seems to be the aim of French growers, and apparently the reason why they excel us in the culture of this esculent. Seeds of it may also be sown for transplantation next year. Seakale, Rhubarb, and Horseradish that have yet to be planted cannot longer be delayed if they are to be satisfactory in growth and produce; and the same remark applies to Potatoes, all of which ought now to be in the ground; earth up early border kinds, and keep litter or Bracken at hand for covering when frost seems imminent. Thin out, earth up, and stake advancing crops of Peas. Thin out Parsnips to 8 in. apart as soon as the seedlings can be handled; stir the soil between the rows when dry, and also between all other growing crops, such as Parsley, Cabbage, Lettuce, and winter Onions. A general sowing of Kales, Broccoli, and Savoys may now be made; also a last sowing of Autumn Giant Cauliflower. The usual routine work will now consist of making frequent and regular sowings of summer vegetables and salads, such as Lettuces, small Salads, Radishes, Spinach, Turnips, Peas, and French Beans. Keep walks, alleys, and edgings neat and trim, and the ground between all crops well stirred, both for the destruction of weeds and for the advancement of growth.

Celery sown in heat, as recommended some time since, will shortly be large enough for pricking out. Where it is required for use as early as obtainable, there should be prepared for it a slight hotbed, consisting of about 18 in. of fermenting manure and half rotten leaves. On this place a two or three-light frame, with 10-in. of rich soil, into which put the plants 1 ft. apart each way, giving a little water, afterwards putting on the lights, which keep close for a few days, until the roots take hold of the soil; if the weather be sunny, shade in the middle of the day. As soon as growth has fairly commenced, give plenty of air, to prevent the plants drawing up weakly; and, if well attended to as regards water, they will progress rapidly. The lights should not be altogether dispensed with until all fear of frost is over; every alternate plant may then be removed with a good ball of earth and turned out into a well-prepared trench, leaving the remainder on the bed on which they have been grown, and when large enough earthing up with light soil brought in for the purpose. By this means those who want Celery very early can have it in good condition by midsummer, but, of course, not large. It will be succeeded by that which was planted out from the bed, which will be ready before that grown in the ordinary way. The principal portion of the plants from the same sowing should be pricked out 3 in. asunder in a frame, in which put 6 in. of good soil on a firm bottom composed of ashes well rammed, into which the roots will not penetrate far. For this purpose the soil should be of a light sandy nature, to enable the plants, when moved for permanent planting, to be taken up with little breakage of the roots. Where Celery is desired late, say until April the following spring, a little seed should now be sown, as this will stand longer without running to seed than the earliest sowing.

GLASSHOUSES AND FRAMES.

Stephanotis as a Basket Plant.—Among the many plants used for conservatory baskets, the Stephanotis is seldom or never employed in that way. It has, however, occurred to me that it might be made one of the best of basket plants. It would, in the first place, be necessary to obtain plants of it with several good shoots rising from the bottom; these must be trained up stakes inserted in the pot, for the plants would perhaps be best grown in pots until they began to flower, when they could be set in the baskets. In order to ensure the plants flowering freely, the wood must be thoroughly ripened by being exposed to sun and air during the summer-time, either near the glass in a cool house, or trained on a south wall out-of-doors. The baskets in which they are to be placed should be prepared previously by having a pot, of the same size as that in which the Stephanotis is grown, placed in the centre. This should be packed round with lumpy peat and Sphagnum, and planted with Ferns and Lycopods, so as to hide the outside of the baskets. When all is ready, the empty pot can be replaced by the one in which the plant is growing. The branches of the Stephanotis might be arranged so as to droop equally all round the sides; and when in full bloom plants thus treated would have a striking effect in a moderately warm conservatory, where they would last in beauty for a long time. I have never seen the Stephanotis tried in this way, but I see no reason why it should not succeed.—S.

Stokesia cyanea.—This plant furnishes the chief supply of blue flowers brought to Covent Garden in a cut state in autumn. They first make their appearance early in September, and may be constantly seen in the florists' shops until late in December. Those who desire a really good autumn-blooming plant would do well to grow this. The blue Aster-like flowers are very large and showy, and are borne on the end of every branchlet, each bloom being about 3½ in. in diameter, and apparently semi-double. In its late-blooming property consists its chief value; for late-flowering, hardy, really good plants are scarce. It succeeds best in a well-drained, warm, sandy soil; but any garden mould will suit it if well drained and in a sunny situation. It is also very useful for conservatory decoration in autumn and winter. It may be readily increased by division in spring. The slips, after being taken off, should be inserted in a warm border or frame, a few inches apart, in sharp sandy soil. As soon as they get well rooted and begin to grow afresh, they should be transplanted, mixing a little river sand and leaf-mould with the soil. In August some of the plants may be lifted and potted, and placed in a frame, greenhouse, or window. If, however, large specimens be required, the plants should be potted earlier and shifted on as they require it, in order to obtain large plants before flowers are produced.—S.

Bouvardias Planted Out.—By planting out Bouvardias during summer in good rich garden soil, and keeping them well supplied with weak liquid manure, much better plants can be obtained for winter blooming than by growing them in pots. We lately saw a large house full of plants which had been thus treated, and which will make a fine display. They were struck in February, planted out in June for the summer's growth, and potted up during the first week in September; they were then placed in a cold frame for a few weeks until re-established, when they were removed to a lean-to house, where a little heat can be given them to assist in opening their flowers. All the varieties may be treated in this way with the best results.

Abutilons as Pillar and Roof Plants.—The gracefully-drooping, bell-shaped flowers of these are only seen to advantage when grown as pillar or roof plants, a purpose for which some of the more free pendulous kinds are specially adapted, as depending above-head, or weeping down from pillars, they have a very graceful effect. Many years ago I remember the old A. striatum trained along the roof of a conservatory, where it was always much admired and was seldom out of bloom, and now that there are so many hybrids of such improved character, there ought to be a few at least among them fitted for such a work. A. Boule de Neige is unfortunately a little too stiff, but is admirably suited for a trellis or walls, where associated with Lapageria rosea, or anything of that character possessing colour, the contrast with its pure white flowers is very effective and pleasing. When grown in this way it requires annual pruning in, so as to get plenty of fresh young breastwood, on which the blooms are formed; but the thing first of all is to get it to fill its allotted space, by encouraging the leading shoots to reach the sides of the trellis before being stopped, when by nipping out the buds they soon break and furnish the bare parts below. A. vexillarium is one of the best with which I am acquainted for training up under a girder or roof, where if the house it is in happens to be kept a little warm, it will flower the whole year through. To encourage it and others to do this they must have plenty of root room and good rich soil, and the assistance of manure water whenever they get dry at the roots.—S. D.

Clematis indivisa lobata.—This attractive greenhouse climber is just now nicely in flower in a cool house. The flowers are white and fragrant, but the stamens and pistils are off a purplish-red colour, affording a pretty contrast to the white petals. It is an easily cultivated plant in a perfectly cool and airy greenhouse. Where it is restricted to limited space it is best grown in a pot, for it is a vigorous grower, and soon covers a large space. The flowers are produced in profusion from the axils of the leaves, and this must be taken into account in training the plant. One matured shoot, well exposed to the light, will produce quite a wreath of flowers. It may also be trained in the form of a balloon if confined to a 9-in. or 10-in. pot. One or two limbs only should be led away from the root and trained regularly round the balloon trellis spiral fashion, so as to cover all the space, but without crowding the shoots in any way. About this season they will break freely and produce a mass of blossom. Common loam principally, with a little leaf-mould or peat and sand, makes a good compost in which to grow it.—W.

Large v. Small Plants of the Amazon Lily.—The flowers of Eucharis amazonica are such general favourites that whatever course of culture yields the best results is the one that should be followed. I have hitherto thought it best to grow good single bulbs in small pots, and by resting or partly drying off batches of plants in succession, I have had a constant supply of fine blooms; but where large numbers of flowers for cutting is the object in view, I think that large pots filled with bulbs will, as a rule, yield the best results, and if required for decorative purposes, there are few plants that combine the good qualities of a flowering and fine-foliaged plant so well as this Eucharis. We have at the present time several large specimens of it coming into flower, each furnished with, on an average, twenty spikes of bloom. They were in full blossom in November last, and were kept quite cool until near Christmas, in order to preserve their flowers, which we used in large quantities for table decoration. Since that time they have been subjected to ordinary warm greenhouse temperature. Being starved from want of pot room, we have supplied them with an unlimited quantity of tepid liquid manure, which few plants like better than the Eucharis. Many of the old flower stalks have not yet decayed, but I find that fresh ones are shooting up vigorously beside them.—J. L. M.

Spiræa palmata.—Exquisitely beautiful as this fine herbaceous plant is in beds and borders, it is even more so forced; but to have the flowers well coloured they must not be allowed to expand in heat; the plants should be set in a light cool house, where they can enjoy a moderate amount of air and receive plenty of water. So moisture-loving are they that they do best standing in shallow pans to intercept the drainage that runs through, which they soon reabsorb, and thus keep fresh without the attention they otherwise require to preserve them from flagging. I find that plants grown out in the open, and dug up in the autumn, are far preferable to any grown in pots, as the latter are never half so strong, and consequently do not bear such fine panicles of flowers. The best way to cultivate for forcing is to plant in very shallow trenches in a half-shady situation, as then they can be easily flooded with water occasionally, which is a great help in warding off red spider, so fatal to the foliage if they are allowed to become dry at the roots. This Spiræa admits of very ready increase by division, made any time before the plants have started much into growth, after which they should not be interfered with, as cutting through them then checks them severely, and is likely to end in their total loss.—S. D.

DOULBE PETUNIAS.

THERE is still time to sow seeds of these excellent greenhouse plants if a little heat can be afforded them. Double Petunias may be propagated by means of cuttings, but seedlings are preferable, as they grow stronger and give little trouble; but when any of very superior merit show themselves, it is always worth while keeping a stock plant of such for cuttings, which, put in now, soon strike root on a manure bed under a bell-glass kept close for a time. The single forms make grand beds if planted where they can have plenty of room to spread, but, as they are naturally strong growers, a poor soil is best for them, if deep, so that the roots can get well down; that checks any tendency to over-robustness, and yet affords the necessary support during dry weather. Besides forming magnificent beds, single Petunias make fine masses in borders, but when used in that way they require support; the neatest and best way of effecting this is using coarse-meshed rabbit wire, cut into yard lengths, which, run round and tied to a stake at the ends, forms a capital frame, through which they thread their shoots and completely hide the wire with their gay blossoms and foliage. Their are many other plants of a similar character for which a trellis made in this way answers well, and as they last for years, nothing for the purpose can be cheaper or handier. As Petunia seeds are very small, they should only be covered at the time of sowing, otherwise the young plants are unable to push through the soil. Pans for such seeds should be filled nearly full with rough leaf-mould, and on the top of that should be put 1 in. or so of finely-sifted soil, made perfectly level and smooth. That done, the next thing is to give a gentle watering, and then they should not be disturbed for a few hours, when all will be ready for sowing. This should be done thinly, and a little silver-sand sprinkled over the seeds, when, if placed in a moist heat, they will soon germinate, especially if the pan be covered with a sheet of glass or kept dark by a piece of paper for two or three days, as by that means evaporation is intercepted and a more uniform warmth maintained.
S.

Wistaria and Ivy on Railings.—The engraving on the next page shows a graceful mode of growing Wistaria and Ivy on railings which may be easily carried out by those wishing to form ornamental screens on railings, &c. The effect of the Ivy below is, of course, good at all seasons, particularly in winter and spring, when the Wistaria is bare. In spring and early summer the shoots of the Wistaria are liberally graced with large bunches of bloom, and frequently there is a second crop in autumn. The long shoots of the Wistaria require to be pruned in slightly in winter, and thus a kind of graceful and natural coping is formed to the Ivy-clad railing. Walls might be embellished in a similar manner. Forming graceful and enduring, though changeful, little pictures of this sort is that which best repays for expenditure in gardens.

ANSWERS TO QUERIES.

1876.—**Plants for a Small Greenhouse.**—It is better to grow a few plants well than have a larger number of leggy, indifferent specimens. Hard-wooded plants—Acacia armata, A. floribunda, A. Drummondi, Adenandra fragrans, Chorozema cordata splendens, Coronilla glauca variegata, Cytisus racemosus elegans, Daphne indica alba, Dracæna indivisa, D. rubra, Eriostimon buxifolius, Grevillea robusta, Habrothamnus fascicularis, Nerium rubrum plenum, double-flowered Myrtle, Pimelia Hendersoni, and Polygala dalmaisiana. A few Camellias, Azaleas, and Epacrises may be added, but do not start with too many, and in making the list I have had this especially in view. One or two of the soft-wooded Heaths also, such as Wilmoreana, are easily managed. The following soft-wooded plants are very desirable to possess:—Pelargoniums of different kinds (including the zonal section), Fuchsias, tuberous Begonias, and Tree Carnations. Cinerarias, Calceolarias, Cyclamens, Balsams, and Celosias are easily raised from seeds sown in spring; the two former, as well as Primula sinensis, can be grown best in a cold frame in summer, in rather a shady position. Eupatorium odoratum should be grown for winter flowering; it may be planted out in May, and lifted and potted in September. One or two of the greenhouse Palms might be added, such as Corypha australis, Phœnix dactylifera, Seaforthia elegans, and Areca Baueri. When they become too large they might be exchanged for small plants. Greenhouse climbers—Acacia Riceana, Clematis indivisa, Lapageria rosea, Tacsonia insignis, Swainsonia Galegæfolia, and Tropæolum Fireball.—E. H.

1875.—**Keeping a Window Gay.**—I have had hardy Primroses beautiful all winter. They should be divided now, planted out in shady borders, and potted again in autumn. Zonal Geraniums, again, should be another leading feature, and Fuchsias, Harrison's Musk, and Begonia Wiltoniensis. Calceolarias will do in the frame all summer. Annuals sown in autumn, potted up, and placed in the frame till the flower-buds are formed, then brought forward into the window, will flower early. Sow Myosotis dissitiflora in July; Saponaria calabrica, Nemophilla insignis, and Limnanthus Douglasi in August. Mignonette outside the window in a box is sweet and beautiful, as are also Wallflowers in spring and Ten-week Stocks in summer. A few plants suspended in baskets are a great addition to a window. Ivy-leaf Geraniums, Sedum carneum varigætum, Saxifraga sarmentosa, Creeping Jenny, and several Campanulas are suitable for baskets. For winter, when flowers are scarce, a nicely grown Laurestine would be useful, and one or two berry-bearing plants of Aucubas. Several others of the Japanese shrubs might be useful to give colour in winter, especially the variegated forms of Euonymus. If the window was large enough, a Palm or two of the hardy kinds such as Chamærops excelsa would give character of a striking kind; and the India-rubber plant, Ficus elastica, thrives well in a room. And then, to revert to flowering plants again, there is the whole family of bulbs, many of which must be grown, and scarcely any of them can come amiss.—E.

1899.—**Plants for Lancashire.**—For the situation named deciduous shrubs should preponderate, and it would be an advantage if a belt or even a row of trees that will stand the fumes and gases be planted on the side from whence they come. I have seen Lime trees used for such a purpose, formed into a dense screen by pruning, which topped and lifted over, so to speak, the bad atmospheric currents. When a break is thus established many things will grow under or just inside its shelter that could not otherwise be cultivated. From deciduous shrubs select Lilacs, Ribes, or flowering Currants, Laburnums, Thorns, common Berberry, Elder, scarlet berried, &c., Forsythia viridissima, Honeysuckles, Pyrus japonica, Syringas, Tamarisks, &c. Among evergreens, Aucubas, Berberries, Box, Cotoneasters, Ivies, of various kinds, evergreen Oaks, Japanese Privets, Rosemary, Yuccas, &c., may be planted. In situations where the fumes are excessive the common Elder may be used as a screen, as it seems insensible to their effects. All the Californian annuals may be sown now in the open with a fair prospect of their doing well. The following list may help to guide in selecting proper kinds:—Nemophilas, Lupinus, Sweet Peas, Saponarias, Stocks (ten-week), Asters, Victoria and other Nasturtiums, Tom Thumb, Stock Virginian, Sweet Alyssum, Candytufts, Clarkias, Collinsias, Eschscholtzias, Larkspurs, Limnanthus Douglasi. Sweet Williams, Antirrhinums, Wallflowers, and Forget-me-nots may also be soon for next year's flowering, as may also spotted Foxgloves, and many other things that want of space prevents me alluding to now.—H.

Double hybrid Petunia.

1832.—**Glazing without Putty.**—My position is very similar to that of "E. N.," and I was about to ask your correspondents who have adequate experience to state their opinions on the points mentioned by him. I have recently seen a cool greenhouse with the sash-bars running horizontally from end to end, and not, as usual, from back to front of the house. The glass used is about 1 ft. in width, and much longer; each piece appeared to be inserted in a groove at the top and secured at the bottom by a small iron button revolving on a screw. My inspection was a chance one, and too hurried to

enable me to give an adequate description. The gardener quickly removed a pane or two, and as easily replaced them. I observed that in some instances there was a small space between the respective panes; but I was assured that no wet ever penetrated, and that there was no damp or drip; further, that not a plant was injured by frost or cold during the past severe winter. The advantages claimed for this sort of house were simplicity and great economy as to cost, with handiness for removal if required. The appearance was not only novel, but very pleasing; and for lightsomeness I have never seen anything to equal it. Every plant looked very healthy, although the heat was supplied by an oil-stove.—B. W.

—— The system described must be the same as that known as "Hellewell's Patent." Having seen and minutely inspected a house constructed upon this system, I can answer for its utility. Its chief recommendation is that it avoids all necessity of outside painting. The glass can be taken off easily, cleaned, and then replaced, in a very short time. The technical particulars are as follows:—Rafters, according to length of house, about 6 ft. apart; on these are laid purlines according to length of glass squares, say 21 in. The glass squares are laid on the purlines just as slates are, and kept in their places by clips (Hellewell's Patent). I am so satisfied with its simplicity that I am now constructing a plant house on this system, and shall not revert to the old system of rabbets and putty, and when my present houses require new woodwork, shall adopt the modern system.—Arundo.

1897.—**Cucumbers on a Landing.**—If thoroughly well cared for, Cucumbers may be grown in the situation named. I should recommend Sion House, Munro's Duke of Edinburgh, or one of the short-fruited vigorous kinds. The shoots must be trained on wires, or strong string strained tightly will do. About 14-in. pots will suffice; and the soil must be turfy loam and old manure—about one-third of the latter; and it should be used in a rough condition, that is, simply broken up with a spade. Do not begin too soon; the first or second week in May will be early enough. Plant strong vigorous plants that have experienced no check, and have not been raised in a very hot place.—E. H.

1874.—**Cesspools in Gardens.**—In summer such crops as Cauliflowers, Cabbages, Peas, Onions, Scarlet Runners, old Asparagus beds, Gooseberry, Black Currant, and Raspberry quarters will imbibe a good deal of sewage. Strawberry beds may have a supply from this time till the fruit begins to colour; and in winter, or when it cannot be profitably used elsewhere, pour it over the roots of fruit trees in orchards, &c. Cut Grass may be usefully employed for mulching over the roots of plants and fruit trees; it may be dug or trenched in the land at once, as cut, or be mixed with earth to absorb the unpleasant smelling gases evolved by fermentation.—E.

1929.—**Lilium auratum Out-of-doors.**—Lilium auratum should be planted in a shady place, not under the drip of trees, in any good soil that can be kept tolerably moist. Ours are grown in a good but rather heavy loam in the Fernery, where for the last two years we have had them and other Lilies flower beautifully. They are all coming up quite strong this spring, in spite of last winter's frost, which killed Laurels and Aucubas down to the ground. The bulbs are left in the ground all the winter, protected from slugs by a good dusting of soot in the spring, and well watered all the summer. On this simple treatment all Lilies seem to grow handsomer each year. I may mention the fact of one bulb of Lilium auratum remaining dormant a whole year in an undisturbed spot among the Ferns. Planted one spring it did not grow till the next, when it sent up three shoots, one of which was strong enough to bear three large flowers.—Lover of Lilies.

1838.—**Blooms Falling off Roses.**—Maréchal Niel rose often produces more buds than come to perfect flowers. In what condition are the main stems; are there any symptoms of canker? A little artificial stimulant, such as Standen's or Clay's, will be useful. The falling of the buds arises, no doubt, from exhaustion or lack of power in some form.—E. H.

1911.—**Bulbs the Second Year.**—I have planted Hyacinths for many years in the same mixture, viz., one-third leaf-mould, one-third well-rotted manure, one-third sand; they have been planted in November and lifted and dried in May. Not only have they continued to bloom beautifully year after year, but their offsets, treated in the same manner, have made good bedding bulbs. These two last winters, however, have settled them; they are nearly all gone, and, after many years of faithful service, must be replaced.—S. F. M. L.

1885.—**The May Flower** (Epigea repens).—This may be obtained at Mr. Ware's nursery, Tottenham; or Messrs. Backhouse and Sons', York.]

1893.—**Management of Fern Case.**—Keep the plants free from all dead fronds and decaying matter generally; wash the glass when necessary to keep it clean and bright. Plants growing in a tight-fitting glass will not require much water, as the evaporation condenses on the glass and runs down to the roots again. But for most kinds of Ferns a little ventilation sometimes is beneficial by tilting up the glass or otherwise for an hour in the morning.—E. H.

1894.—**Cyclamens and Cacti after Bloomng.**—Put your Cyclamens in a cold frame, and Cacti on a sunny shelf in greenhouse. Give little water.—G. B., *Bury*.

1877.—**Growing Gardenias.**—Gardenias grow best in a moist stove, syringing them several times during the day; they require very little shading. I have grown them well in top sod roughly chopped up, mixed with bones, sand, and a little dry cow manure. They are fond of liquid made from cow manure when growing freely.—J. H.

1832.—**Glazing Without Putty.**—In answer to "E. N.," I write to say that last autumn I put up a greenhouse on the same principle as he suggests, and find it answer exceedingly well It is perfectly watertight, &c., and, having had others built the other way, I consider it equally as good as the old style. The house is in rather an exposed position, but it has sustained no damage. I may say that there is a nurseryman close by who builds all his houses on the same principle, and from whom I copied.—H. S. H.

Wistaria and Ivy on Railings

1751.—**Peas and Mice.**—I recommend the following as a remedy against mice among Peas:—Take some Furze and chop into lengths of 1½ in., 1 in., and ½ in., then put some on top of the Peas, and then the earth and some more Furze on the top. This is a sure preventive against mice and worms, and even against birds.—A. H. C. W.

1905.—**Hybridising Daffodils.**—I think hybridising Daffodils is a great mistake. I am of opinion that the most important matter is to keep the species or distinct types true, rather than run them into a lot of varieties.—H. H.

1936.—**Planting Potatoes.**—In the hints for Potato planting it is stated the sets should only have two shoots. Does it mean that that the others should be pulled off, or, that the Potatoes should be cut into pieces, each piece with two shoots?—A Novice. [All the shoots but two should be cut out with the point of a knife.]

1937.—**Ferns Under Glass Case.**—I have an earthenware Fern case, with bell-glass top, and Ferns supplied from greenhouse. Lately, the new fronds of the Fern die off. I keep the case on a sideboard in a rather large room; I do not lift the glass up nor water it much. Would the gas or the fire affect it?—R. H. [The bell-glass should be lifted for an hour daily when the gas is not burning. Wipe the glass and water the plants.]

1938.—**Potting Plants.**—I find in Gardening that young plants are to be shifted into larger pots as the pots fill with roots, but how can I ascertain when the pots are full of roots?—A Novice. [Place your left hand over the top of the pot, letting the plant come between the middle fingers. Then turn the pot upside down, and gently tap the edge of the pot on a table or bench. Lift up the pot with the right hand, and you will then be able to see the roots. Put the plant in the pot again, and give it a few sharp raps on the table to fit the ball of roots into its place again.]

1939.—**Pruning Fruit Trees.**—I have several young Peach and Pear trees which have never been pruned. How far back had I better prune them? They are beginning to show leaf. I had them last year from the nursery.—Hampstead. [It is rather late to prune them now; your best way would be to rub off the leaf-shoots of the parts that should be cut off, and when the young growths have got a good start these bare pieces might be removed. We cannot advise you how far to prune them back without knowing what they are like now, and in what form you would like to train them. Ask some good gardener to see them.]

1940.—**Plants in Vineries.**—My Vinery was used as a stove from 1874 to March 1879. Will this account for small crop last year, and bad promise this, or is it bad pruning? [If a stove temperature was kept up during the autumn and winter months there is no wonder that the Grapes were poor. This year let the Vines carry as light a crop as possible, and keep the temperature of the house rather low, say not to exceed 60° by night except in very warm weather. Give abundance of air daily, and leave a little on all night. Keep the shoots thin, and do not stop them too close; let every leaf be fully exposed to the light. When the leaves begin to fall in autumn, throw open the house till sharp weather sets in; then prune the Vines and let them break into growth naturally, that is, without forcing. By these means you may reerruit their strength.]

1941.—**Fly on Apple Trees.**—What can I do to my Apple trees, which are just ready to burst into blossom? Every bud is covered with green blight.—J. Plater. [Take 4 oz. of Quassia chips, which may be got at the chemist's, and boil them for ten minutes in a gallon of soft water. Strain off the chips, and add 4 oz. of soft soap, which should be dissolved in the water as it cools. When nearly cold, syringe the trees with the liquid; ten minutes afterwards syringe it off with clean soft water Repeat the operation when necessary.]

1942.—**Fruit Trees in Greenhouse.**—I have in my greenhouse some Cherry and Peach trees a few inches high, grown in pots from the stones, planted some four months back. How should they now be treated to ensure strong and vigorous growth?—Brockelsby. [Plant them out-of-doors under a south wall in good soil, taking care, however, to harden them off a little at first.]

1943.—**Forcing Lilac.**—In Gardening for April 3 there is a paragraph "How to force Lilac." What time ought the bushes to be taken up?—Sydenham. [When the leaves have fallen. If a succession is needed, a few—at intervals of three or four weeks—should be put in heat.]

1944.—**Box for Plants.**—Which is the best kind of box for sending cut flowers by post?—J. Brodie. [A tin box is the best for plants. Wadding, not wool, should be used, as the latter absorbs the moisture from the plants. Ivy or Spinach leaves answer well for packing when there is a scarcity of damp Moss.]

1945.—**Lilium auratum.**—Is it too late to put in bulbs of Lilium auratum? if not, where can I get them? and the price of them?—C. H. W. [Procure some bulbs at once and pot them in equal parts sandy loam and rotten cow manure or leaf-mould. They may be obtained from any good bulb and seed house. The price varies according to the size of the bulbs; fair-sized flowering bulbs may be had for about 1s. each.]

1946.—**Aspect for Spring Garden.**—Would a border under a west wall be well suited for a spring garden?—J. L. [Yes.]

1947.—**Sizes of Flower Pots.**—What is the proper measurement of the different sized flower pots, commencing with the smallest one?—W. J. L. [Thimbles, 2 in.; thumbs, 2½ in.; sixties, 3 in.; fifty-fours, 4 in.; forty-eights, 5 in; thirty-twos, 6 in.; twenty-fours, 8 in.; sixteens, 9½ in.; twelves, 11½ in.; eights, 12 in.; sixes, 13 in.; fours, 15 in.; twos, 18 in.]

1948.—**Bulbs after Flowering.**—I have a few pots of Hyacinths, Tulips, Crocuses, &c., which are now dying down. Will it be best to take them out of the pots and dry them and store them away, or leave them in the pots and gradually withhold water until quite dry? The usual plan is to plant them out in the garden in rich soil; but, unfortunately, I have no garden only in pots. If left in pots, what is the best way to start them into growth again?—A Learner. [Keep the soil in the pots moist until the tops have died down. In autumn re-pot them and place them out-of-doors plunged in ashes, and let them come on gradually. They will be of very little use, we are afraid.]

1949.—**Propagating Palms and Genistas.**—How are Palms and Genistas propagated, and at what time?—J. V. [Palms are propagated from seeds sown at any time in a warm temperature; Genistas from cuttings, in September, placed in a frame or greenhouse.]

1950.—**Tea Leaves as Manure.**—Are Tea leaves any use for the manuring or improving soils? Are coffee grouts of any use for the same purpose?—H. C. F. [The benefits derived by soil from Tea leaves would be very small unless you had a large quantity which had lain long enough to get decomposed. Coffee grouts will do neither good nor harm.]

Scale on Apple and Plum Trees.—*J. Hiam.*—The scale on the Apple tree is apparently what is called the mussel scale. The best remedy we know of is seal oil, well rubbed into every crevice of the bark when the leaves of the tree fall off in autumn. That on the Plum tree is the common brown scale, which may be cured in the same way as the other.]

Shading Greenhouses.—*H. F. J.*—Thin canvas on rollers is the best; but if you would rather paint the glass use whiting and sour milk, mixed to the consistency of paint; or, nurserymen sell some material called "summer cloud," which is very good for the purpose.

Cape Gooseberry.—*K.*—The botanical name of this fruit is Physalis edulis, belonging to the order Solanaceæ. A native of South America.

A. F.—Kindly ask your questions on separate pieces of paper.

Large Forget-me-not.—*S. F. M. L.*—You probably mean Omphalodes verna.

H. P.—You will get all the information you ask in our advertisement columns.

J. H.—Your communication can only be inserted as an advertisement, in the columns set apart for that purpose.

QUERIES.

1952.—**Slugs in Greenhouses.**—Can any one tell me the best course to get rid of slugs in a greenhouse? I have some herbaceous Calceolarias which are being spoilt by them.—SUBSCRIBER.

1953.—**Azaleas Growing too Soon.**—Can any one tell me how to prevent the new wood of Azaleas starting before the flowers are out? Does it injure the plants to nip out the new growth?—SUB.

1954.—**Constructing a Fernery.**—I have a greenhouse which I wish to convert into a Fernery. It is in a shady situation. The north, west, and south sides are of brick, and the east side glass, with glass roof and well-drained cement floor. It is about 7 ft. square. Would some one give me a few hints as to the best way of covering the walls with virgin cork, &c., so as to make it into a little glen, with fountain, &c.?—T. W. W.

1955.—**Rats in Country Houses.**—Is there any way of ridding houses of these unwelcome guests? Poison only makes one evil to counteract another, and is besides dangerous where children and domestic animals are found, and trapping is a slow process where such rapid multiplication takes place.—NORTHUMBRIAN.

1956.—**Vines.**—I would be glad if "J. G. K." would give a few more remarks on the the long rod system of Vines when started, and what fire heat is to be kept up, will 70° or 90° do? I have a Vine grown on the spur system, which has borne well, but this year it has not been pruned. The shoots are now 2 ft. long, without a sign of fruit. What shall I do? Will they bear this year? There is now no fire kept up; the shoots are not weak; the solar heat about 70°. There are three shoots to each top joint; ought they remain, or leave only the leader?—G. B. M.

1957.—**Treatment of Hoya carnosa.**—I have some cuttings of Hoya carnosa just started in 3-in. pots in a temperature about 60°. Can I flower them this season? and what treatment should they receive?—W. C. REID.

1958.—**Treatment of Vallottas.**—I have some small bulbs of Vallottas, offsets from larger bulbs. How ought they to be treated? and how long will they be coming to a flowering size?—J. W. L.

1959.—**Perennials for Sowing in July.**—Will some one kindly give me the names of a few hardy or half-hardy perennials of compact growth, similar to the dwarf Antirrhinum or Pentstemon, that I can sow in July or August to blossom the following summer from July to October or November?—J. S. M.

1960.—**Culture of Sunflowers.**—Will any one inform me as to the best method of sowing and raising Sunflowers, and any hints that may be useful in their cultivation?—JOHN HENRY.

1961.—**Mixed Houses of Plants.**—Is a temperature of 50° suitable for all the following plants, viz.—Amaryllis, Bouvardias, Begonias, Camellias, Chrysanthemums (winter flowering), Cyclamens, Fuchsias, Geraniums, Heaths, Hyacinths (and other bulbs), Liliums, Lobelias, Orchids (winter flowering), Primulas, Passion-flowers, Roses (Maréchal Niel), and Violas? Would they succeed if grown together?—J. J. M.

1962.—**To make a Garden Pay.**—Is it possible to make a small garden yield a profit? Having about a third of an acre, I grow all the fruit and vegetable consumed by the family, purchasing them at the prices at which they are retailed by the shopkeepers; but I always find that, although I work hard in the garden, after paying for seeds, manure, and a man's occasional labour in digging and trenching, I save very little, and might as well buy at the shops and save myself much fatigue and care. Some of my friends say that a man who recently possessed a large income, extensive grounds, &c., is not the person to make a small garden pay; but I think otherwise, as I not only possess a practical knowledge of gardening, but also work like a day labourer to make my little plot of ground yield me a fair return. The result is, however, very unsatisfactory, and I shall be glad if some practical gardener will help me as to the best method of turning my knowledge to account.—ANXIOUS TO KNOW.

1963.—**House Slops as Liquid Manure.**—Will some reader inform me how I can utilise the refuse house liquids? If I apply them as produced they act too vigorously and do more harm than good; and yet if I allow them to stand in a tub sunk in the earth they smell most offensively, and are, I imagine, unwholesome.—VECTIS.

1964.—**Making a Lawn.**—I have a piece of ground at the back of my house 50 ft. long by 15 ft. wide, which I wish to make into a lawn. I believe the quality of the soil is good, but rather stony. I have had the whole of it dug up and thoroughly loosened, and I should be glad to be informed how I am to proceed. I have no turf available, so must therefore use Grass seeds.—ALPHA.

1965.—**Single White Camellias.**—Can any one tell me where I can procure a plant of the single white Camellia—called, I believe, Camellia japonica? I presume it requires the same treatment as the other kinds.—K.

1966.—**Sowing Seeds of Conifers.**—I have some seeds of Pinus Normanniana, Lambertiana, and other Pines, which ripened this year in Kerry particularly well. Would some one tell me how they are to be sown, and where?—MAJOR H.

1967.—**Book on Horticultural Chemistry.**—I have come into possession of a garden this year, and not having devoted any time to the study of this subject, I will be much obliged if any one will recommend me to a cheap work which treats the subject from a chemical point of view—by this I mean a book that not only gives directions, but states the reason why, as far as practicable.—REASON WHY.

1968.—**Crown Imperials from Seed.**—Last autumn I sowed seeds of the Crown Imperial Lily, and three plants have come up. What is the proper way to treat them? Am I to leave them in the box they were sown in? How long will it be before they flower?—J. M. M.

1969.—**Painting Greenhouse Floors.**—The tiled floor of my greenhouse is so difficult to keep clean. I intend painting the tiles red and black; will this succeed? Or, can any reader suggest a better plan?—TERRA COTTA.

1970.—**Grubs on Lawns.**—Can anyone advise me how to get rid of a small lead-coloured grub which has appeared in numbers during the last few days, crawling from the Grass plot on to the gravel walks? I do not know its name.—J. M. G.

1971.—**Pruning Jasmines and Berberis.**—I have some of these plants with long bare branches; how should they be treated?—EARNEST GARDENER.

1972.—**Flower-pot Stoves.**—Would "H. M. D. B." kindly give me plainer instructions respecting the kind of stove? I cannot quite understand how the fire is to burn without air. Does the tin pan rest quite on the inner pot? Can the size of the fire-clay pots be given, and where could I obtain them?—INQUIRER.

1973.—**Soot in Gardens.**—If a bucketful of soot is buried in the garden, how soon can that particular spot be used for planting in?—IDAWARRA.

1974.—**Soot-water for Plants.**—Is there any means of overcoming the buoyancy of soot, so that it may be mixed with water, as frequently recommended in gardening publications?—IDAWARRA.

1975.—**Parsley for Exhibition.**—Will any one tell me how to grow a good potful of Parsley for exhibition in July next? I have some plants about 1 in. high in a cold frame.—JOHN BROWN.

1976.—**Climbing Roses not Flowering.**—I have a Maréchal Neil Rose tree in my greenhouse which makes plenty of very nice foliage, but I do not see any sign of flower buds; the plant is 8 ft. long. I have also a Gloire de Dijon Rose quite as large, which is in bloom; but the foliage is very brown, the leaves go almost yellow, and some have very dark-brown spots upon them and others drop off. What is the cause and remedy in both cases?—ANXIOUS INQUIRER.

1977.—**Peat Charcoal.**—Will "Rustic" (see p. 41) say if this is an article of commerce sold in London or Birmingham, or how is it procurable?—J. T.

1978.—**Iris chinensis.**—I have some plants of the above which were brought from Genoa four years ago. They were taken up when in flower, and have never blossomed since; they are immensely strong and large. I have had some in the open ground and some in a cool house. What treatment should I adopt? In the garden near Genoa where I saw them covering the ground like Bluebells they were, I think, rather shaded. Would a roasting such as suits Guernsey Lilies be likely to suit?—J. L.

1979.—**Calochortus flavus.**—I have some seed of this, and shall be glad of information as to growing it.—C. D.

1980.—**Newly-made Lawns.**—I have lately had some turf laid down in my small garden, which turns out to be meadow turf, full of Buttercups. I cannot afford to relay it, and am doing my best to eradicate these pests with a spud. I propose also to roll frequently with a heavy roller, having observed that in the footway through a meadow one rarely sees a Buttercup, however full of them the meadow may be. I presume, therefore, that pressure is hurtful to them. What else can I do?—A NEW SUBSCRIBER.

1981.—**Wild Flowers.**—Can your readers inform me where in the neighbourhood of London (especially the south side) I can procure wild flowers—notably Wood Anemone, Wood Sorrel, and Hyacinth—and also if these come into bloom in the month of March or April in that locality?—M. M. S.

1982.—**Treatment of Cactus.**—I should be glad of some hints on the management of the Cactus. I have a large one which looks dry and shrivelled, but I do not think it is dead. What can I do to revive it?—A SUBSCRIBER.

1983.—**Creepers for North and East Aspects.**—Can any one recommend me a few good creepers for north-east and due north aspects?—S. F. M. L.

1984.—**Unhealthy Pear Leaves.**—I have some Pear trees the leaves of which are not so healthy as could be wished; they have been the same for two years. They are red and spotted, black spots appearing as the season advances. The roots were pruned this winter pretty closely. Can any one suggest the cause and remedy? They have borne no fruit for some years.—J. M.

1985.—**Glass for Conservatory.**—I am now erecting a conservatory, and my architects wish to put plate glass in the front sashes. I have been told plate glass is not good for plant growing. I should like to have any reader's experience.—FREDK. BRIDGFORD.

1986.—**Watercresses.**—I read that Watercresses are very successfully grown at Gravesend and Waltham Abbey. How are they managed? And how are they managed in other places where they grow so luxuriantly and beautifully, and are so robust and tender? Could they be well managed in the overflow water from a well, and, if so, how should the bed be formed, and the plantation worked? And could a person grow a few for home use in a cottage garden by artificial means, and, if so, by what means?—T. J. S.

Mice and Peas.—I saw about three weeks since a query from a correspondent in GARDENING as to how he should protect his Peas from the ravages of mice and birds. The day after I sowed my first Earlies I was astonished to find that great destruction had been done during the night by mice. I at once made a thick covering of soot down the whole length of the trench, and slightly patted it down with the spade to prevent the wind from blowing it away. From that time I saw no more traces of mice or birds, and I do not believe a single Pea has been stolen since. From the long exposure to wind and weather, it is quite harmless to the young plants when they appear above the soil. I have now a beautiful robust row of Peas, which I am sure are second to none in this neighbourhood.—G. GREEN.

POULTRY.

SITTING OF HENS.

There is a general notion that old hens make the best mothers; but as far as my experience goes, I have found quite the contrary to be the case. A pullet will sit and hatch as well, and make a far more devoted mother than an older hen. In sitting a hen it is best to remove her quite away from the others; and if, as some hens dislike sitting anywhere but where they have been laying, remove her in the evening, give her four or five china nest eggs, cover her up till the morning, then let her out and feed her; if when placed before the nest she will return, you may safely sit her in the evening. Most people give thirteen eggs, but you will find that you will generally get as many chickens out of eleven. I always make up a nest with a good sized turf at the bottom, place the hen in it and give her the eggs one by one, which she will take with many expressions of satisfaction. She will probably not come off the nest the following day.

When a hen leaves the nest, do not give her food directly, but first let her have a dust bath, as it is of great importance she should not get vermin on her; and you can easily give her food after she has returned to the nest, We always give our sitting hens a little chopped meat, and a drink of water at midday, and if the weather is warm they are very grateful for another drink in the evening. When the eggs are hatching it is best to remove all the chicks as soon as they are well nested, or the hen (especially if a pullet) will get up to look at them, and thus endanger the well-being of the others. Also remove all eggshells. If a chicken cannot get out after having pecked the shell, take it and remove bit by bit the top shell, and dribble down some warm water; by aid of this the chick, if returned to the nest, will be able to extricate itself, and you will save it. As a warning to young beginners I may say, Never set your hens on hay, or your chicks will be glued to the shell, and you will lose great part of them. The first hen we ever sat we made this mistake and lost several chicks. The day after the chickens are hatched they should be fed on hard-boiled eggs and cracked grits soaked. At the end of a week they may be fed on barley meal, oatmeal, and soft scraps. At the end of a fortnight give whole dry grits, but do not give grain till they are six weeks old, and then only sparingly. For holding water nothing is better than a cup inverted in a saucer. If your chickens are troubled with lice sprinkle them with Keating's insect powder, and give them a nest of lime rubbish. It is better for the first week to give the hen a separate dust bath away from the chickens; after that they will dust with her. My hens will, if you put your hand under them, at once rise and allow you to see that all is right; and one last year brought her four-days' old chickens into the kitchen and sat down with them by the fire.—AMATEUR ALECTRYOLOGIST.

Feeding Hens when Sitting.—Would some reader tell me whether hens sitting must have free access to water, or is wetted food enough? What is the best food for sitting hens? and does not too much water create looseness, as the hens seem to drink and go to the eggs again?—MABOR.

Disease in Fowls.—I have a lot of chickens, but have lost a large number from the following cause:—When the chickens are a few weeks old there forms on the hinder part of the body a cake or lump of hard dirt. I have washed many of them and some have lived, but I lose four or five a day. A neighbour tells me it is a kind of diarrhœa, but cannot inform me of any remedy.—RHODA.

Croup in Poultry.—The occurance of a dry horny scale upon the tongue is generally called "pip." The dry, scaly tongue is, however, only a symptom caused by some other disease, such as gapes, catarrh, or roup. If the scale or hardened membrane is loose, it should be removed. If "F. B." will give particulars of symptoms, whether there is any discharge from the nostrils, &c., I shall be glad to give further information.—C. W. A.

Fowls Losing their Feathers.—All the breast feathers of one of my light Brahma hens have come out, and she sits on the straw in the nest all day long and eats scarcely any food. What is the reason of the breast being bare at this time of the year? I shall be glad if anyone will tell me what is best to do.—A. J. A.

Fowls Eating their Eggs.—I have two Cochin hens sitting; they eat their eggs. What can be done to prevent this?—F. A.

Eggs for Hatching.—If the fowls are ten months old, their eggs should certainly be good for hatching; and considering only one hen to a cock, all eggs should be considered fertile.

Pale-yolked Eggs.—The paler the better; as a rule, they are a better flavour. Dark-yolked eggs mean, as a rule, that the fowls get very rank food.

—— Black Hamburghs require a good range of Grass land to roam upon, and if fed once or twice a week with scraps of meat, raw or under-cooked, the yolks of the eggs will be found to get darker and richer.—C. J. M.

Fowls Plucking each others' Feathers.—I should say you give your fowls too much fatty matter. This should be stopped for a time, and then only given in small quantities. Put some rusty nails, and occasionlly a pinch of Saffron, in their water. The feathers will not grow again till next moulting season.

Serious Loss of Fowls.—I feel sure that it was the lime that killed the fowls, though I do not quite agree with the feeding they had. Pollard, bran, and Potatoes mixed, and given just warm, are very good; but they should have Barley instead of Oats, and occasionally a little Wheat. Peas are also good for a change.—C. Harxurot.

Eggs for Hatching.—Will some one kindly explain the way to discover whether an egg is likely to produce a chicken or not?—H. B.

Loss of Fowls.—The disorder "N. S. Durrant" lost his fowls by prevailed here (East Kent) two years since. It seemed almost incurable, though pills of camphor and chalk, with a little brandy, sometimes saved the birds. It only appeared in the valley. Mine and other birds on the hills escaped; but it was most contagious, and seemed a kind of choleraic epidemic. Whitewash, lime sowing on the ground, and disinfection, is most desirable before re-stocking.—C. H.

HOME PETS.

HOW TO BREED CANARIES.

First we will spreak of the breeding cage. A good breeding cage for one pair of birds should have two rooms in it, with a hole cut in the partition for the birds to pass through; and then you want two slips, one wired and one not wired, so as to be able to shut off the birds from each other, as you may require; there ought also to be places for seed and water to each room. Now thoroughly clean out the cage and whitewash with new lime; cleanliness is of the greatest importance while breeding canaries. Next choose out the birds; one bird should be a yellow, and one of buff; it is of little consequence whether male or female be the yellow or the buff bird; still, for myself I prefer yellow cocks and buff hens. Now for the time to put the birds together. I believe the last week in February, or the first in March, to be quite soon enough; I do not care for young ones tell we get twelve hours' sun in a day. When the birds are paired, give regularly once a day grated eggs and bread till the hen lays her eggs; attending to this will prevent the hen being egg-bound. Of course you will have provided the birds with nesting material and nest box. Now as the hen lays her eggs take them out each morning till the fourth egg is laid, then place the three eggs back again in the nest; the reason for this is that most canaries begin to sit close as soon as the first egg is laid, the consequence being that the first laid egg is hatched three or four days before the last, and the oldest birds being the largest, crush the small ones or smother them to death. Canaries are seldom more than thirteen or fourteen days hatching their young ones if they sit properly. When hatched, supply the old birds three times a day with a small quantity of grated egg and bread.

When the young ones are about a fortnight old the hen bird will show signs of nesting the second time; so you must put a fresh nest-box in the other room, with fresh nesting material; do not forget this, as if nothing else is to be had the old birds will pluck the feathers off the young ones, which is not desirable. As the hen lays her eggs again, do with them as before; by the time she commences sitting the first young ones will be leaving the nest-box and hopping about the perches, perhaps getting into the other room and bothering the hen bird on her nest. To avoid this, take the wired slip and shut the cock bird in the other room with the young ones, supplying them with egg and bread; the hen does not require any egg while sitting. You must watch the birds after parting them, as sometimes the hen will refuse to sit with the cock parted from her; should this be the case let the cock back again, and use the wired slip, when he will feed through it.

By the time the hen hatches the second brood the first will be able to take care of thamselves, when they must be put in a separate cage and supplied with crushed hemp and canary seed, gradually decreasing the egg food, and stopping it as soon as they will live on seed alone. I do not advise giving young birds green food, but I believe it is good for the old ones while breeding. Groundsel, Chickweed, and Lettuce leaves are what I generally use. I also like to have a piece of mortar in the cage for the birds to peck, and the bottoms of the cage sanded over.

The above is my method of breeding canaries, and I have been pretty successful in it. I have made no mention of the various kinds or breeds of canaries, on which many important things might be written. I just give a list of them:—Norwich canaries, Lancashire coppies, Yorkshire, Belgian, Lizard, Scotch fancy, London fancy, Cinnamon. A. Locke.

BEES.

Plants for Bees and Starting Bee-keeping.—Bees will gather honey close to their hives or up to two or three miles distant. There is no necessity to plant close to the hives. Mignonette, Forget-me-not, Borage, also Cabbage, Turnip or Mustard flowers, are great favourites. Swarm of bees should be ready about first week in May; if sent off directly, *i.e.*, day after they have swarmed, they will travel well in the straw skep they were taken in, the bottom being covered with perforated zinc securely fastened. I strongly recommend wooden hives, placed facing south-east, with a path behind. The swarm would only want feeding if weather was wet just after their arrival. No implements required yet. Cannot even guess at the amount of honey likely to be made unless I know size of hive and style of country—perhaps 30 lb., perhaps 10 lb.—G. C.

—— Lose no time in procuring your stock; the sooner they are removed now the better. Have the hive tied closely up in a strong coarse cloth. The quantity of honey produced the first and following years will depend upon the season and the county; 20 lbs. a hive on an average is a fair harvest. The Stewarton hives are highly spoken of, so is the bar-framed hive. The best aspect is south-east. Bees will not require feeding now unless the weather turns cold or wet. It would not pay to take the honey from the stock, you would most probably lose the swarm; be content with supers. It is very little use planting flowers for bees.—A Subscriber.

—— The hive of bees ought to be obtained at once and placed facing south east. The best kind of hives are on the "hut" principal; two boxes (or three) placed side by side, with communication of half an inch cut out of side of boxes, and a hole of about 3 in. in diameter on the top of each box, for small round skeps to be put on. The quantity of honey to be obtained depends on the country round. If near a town or meadow land, only a small quantity must be expected, but if near Clover fields, Heath, Bean fields, and Lime trees, a much larger quantity; and this again will depend on the amount of sun during the season. Twenty or thirty pounds of honey may be obtained if the season is favourable; but on no account rob the bees of all their honey; they ought to have at least 20 lbs. of honey left for their share, if they are to do well. About May, or first week in June, there should be a swarm come from the hive of bees, so the box or skep must be ready to receive them, on whatever plan is chosen, and nine days after (weather permitting) a smaller flight; nine days after perhaps another, which may be put together in a smaller box or hive. The bees ought to be sent securely packed, with a piece of perforated zinc placed on the top or entrance for air and ventilation; the hive must not be placed near a wall. Probably the bees will require feeding till May, as in most neighbourhoods the bees collected but little honey all last year. Salvia nemorosa is a good plant for bees in the autumn.—A. F. B.

Sea Sand for Plants.—If laid aside exposed to the weather for nine or twelve months, sea sand answers well for striking such things as Geraniums in. We only use it for destroying misplaced vegetation.—M. D.

AQUARIA.

STOCKING AN AQUARIUM.

Having had a good deal of experience with aquaria, I think I can give "Millgate" the information he requires. As I do not know what kind of aquarium his is to be, I will assume that it is an inverted bell-glass, of, say, 18 in. in diameter. The first thing necessary is some small shingle, which may be procured at any of the fish-shops. It varies from 4d. to 6d. a quart; he will want about three or four quarts. This should be well washed, boiled in fact, in several waters to ensure its perfect cleanliness. This should be laid at the bottom of the aquarium. A few small pieces of charcoal at the bottom (hidden by the shingle) would be desirable. Do not place marine shells, however beautiful, in your aquarium; they are out of place. A little ornamental rockwork rising to the top of the water has an ornamental appearance. The next thing to be done is to place the aquatic plants in. The best and most beautiful, as well as most lasting for the purpose, is Vallisneria spiralis. It is expensive to begin with; the roots vary from 4d. to 1s. each; about 3s. worth would furnish an 18-in. glass well. Lilies are a mistake in an aquarium, as they are liable to decay, and poison the water. The Cape Pond weed, however, is an exception. It should be planted in a small flower-pot with shingle, and buried at the bottom of the aquarium. It blossoms freely. A few pieces of Frogbit floating on the surface are desirable. A piece or two of Anacharis may be added; nor should a spray of Myriophyllum spicatum be left out. The weeds should be planted well in the shingle with a little well-washed river sand—not silver sand, which will cloud the water. Clear cold water should now be gently poured in from a can with a fine rose. The aquarium should be filled not more than three-parts full. It should be left for two or three days. Before placing expensive gold fish in, half-a-dozen minnows should be turned in, and if they do well, when a week from the first starting of the aquarium has expired, the other fish may be safely added. If gold fish are to be kept, be content with small ones, and do not be tempted to purchase large fish, which will soon die. The following would be a good selection of fish:—Six gold or silver fish (various sizes), six minnows, two carp (small), two tench ditto, two eels ditto, two gudgeon ditto, and two roach ditto. Neither perch, sticklebacks, crayfish, or any beetles should be added. Tadpoles and little frogs look well. The objection to newts is that they will get out and run about the room; otherwise they are an attraction. Snails are a necessary evil; Paludina vivipara and Glutinosa amphibia are the best; half-a-dozen of each may be added. I have never found them devouring the vegetation, which Lymnea stagnalis, Planobis carinatus, and P. corneus are very partial to. Mussels should not be admitted. Do not be persuaded to add any other insects to your collection, as they will prey on your fish. Fish require feeding occasionally; small blood worms are the best food for the purpose. W. B.

Water in Aquaria Turning Green.—The slimy greenish substance is vegetation, and is caused by too much light. "T. B. M." should cover the glass most exposed to the light with blue tissue paper, which I think will meet the difficulty.—H. D. F. D.

—— Get a few water snails and put in. These will eat up the decayed green stuff, and so keep the water clear. You must be careful not to put too many in, as they will eat up the whole of the plants if you do.—C. Harxurot.

Making an Aquarium.—If "H. G., Sunderland," would kindly tell me where he used his tin for the aquarium, and for what purpose, I should feel much obliged, as I am about to commence one?—Ignorant.

Stocking a Small Aquarium.—I have an inverted bell-glass, 16 in. deep and 12 in. in diameter. What quantity of minnows, gudgeons, and bullheads can I keep in it? Where can I catch trumpet snails and pladden snails? What are they like? I should be very thankful to any one who would answer these questions.—A. H. C. W.

Mildewed Grapes.—I have found the following method efficacious in arresting mildew in the case of late Grapes:—On a still day, heat the hot water pipes as hot as the water will make them, and damp every part of the floor well with water, keeping all ventilation closed. Take a stone of fresh lime, and slack it in a

bucket, allowing it to boil well. Then reduce it with water to the consistency of thick paint, and into half a bucketful put three handfuls of flowers of sulphur. Mix all well together, and with an old whitewash brush put the mixture on the hot pipes. After the Grapes are all cut, it should be all washed off the pipes quite clean, or the result will be a crop of rusted Grapes the following summer.—J. S.

The Double-flowered Deutzia (D. crenata) is a remarkably fine variety of Deutzia. It is a much stronger grower than D. gracilis, and it produces longer racemes of flowers, which are quite double and pure white; they also last much longer and are far better adapted for cutting than those of the single kind. We have forced it here for the last two or three years, and find that it succeeds quite as well as D. gracilis. I do not consider it at all inferior to the best of the Bouvardias for any purpose, and I would strongly recommend it as a forcing shrub.—J. W.

Double-flowered Deutzia (D. crenata).

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Plants in Pots.—*Per doz.*—Arbor-vitæ (golden), 9s to 18s; Arbor-vitæ (common), 6s to 12s; Azaleas (ordinary), 24s to 42s; Azaleas (hardy), 18s to 24s; Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Aralia Sieboldi, 12s to 30s; Ardisia crenulata, 18s to 30s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Berberis, 4s to 9s; Bouvardias, 12s to 18s; Box, 4s to 9s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Clematis, 9s to 18s; Crocus, 1s to 2s; Crotons (in variety), 12s to 42s; Cyclamen (ordinary), 9s to 24s; Daphne indica, 48 to 6s; Deutzia gracilis, 9s to 12s to 30s; Dracæna (variegated), 18s to 60s; Ericas (hyemalis section), 6s to 18s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 30s to 36s; Hyacinths, 4s to 9s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Narcissus, 9s to 12s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 18s to 24s; Pelargoniums (scarlet), 6s to 9s; Pelargoniums (double), 6s to 12s; Primulas (single), 4s to 6s; Primulas (double), 9s to 18s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 9s to 18s; Scilla sibirica, 9s to 12s; Selaginella denticulata, 3s to 4s; Solanums, 6s to 9s; Tulips, 6s to 9s; Virginian Creepers, 6s to 9s.—*Per pair.*—Azaleas (large), 20s; Maiden-hair Ferns (large), 5s to 7s; Aucubas (berried), 4s to 6s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 10s to 15s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pears (fine dessert kinds), per dozen, 9s to 12s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per* 100.—Asparagus, 6s to 8s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 5s. to 6s; Parsley, 6s; Turnips (outdoor), 3s to 4s; Radishes, 6d; Herbs, 2d to 6d. *Per dozen punnets.*—Cress, Mustard, or small salad, 2s; Seakale, 36s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s.—*Per bundle.*—Celery, 1s to 4s; Horseradish, 3s to 6s; Salsafy, 6d to 9d.—*Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 1s 6d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Saveys, per score, 8s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 4s to 8s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

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GARDENING
ILLUSTRATED.

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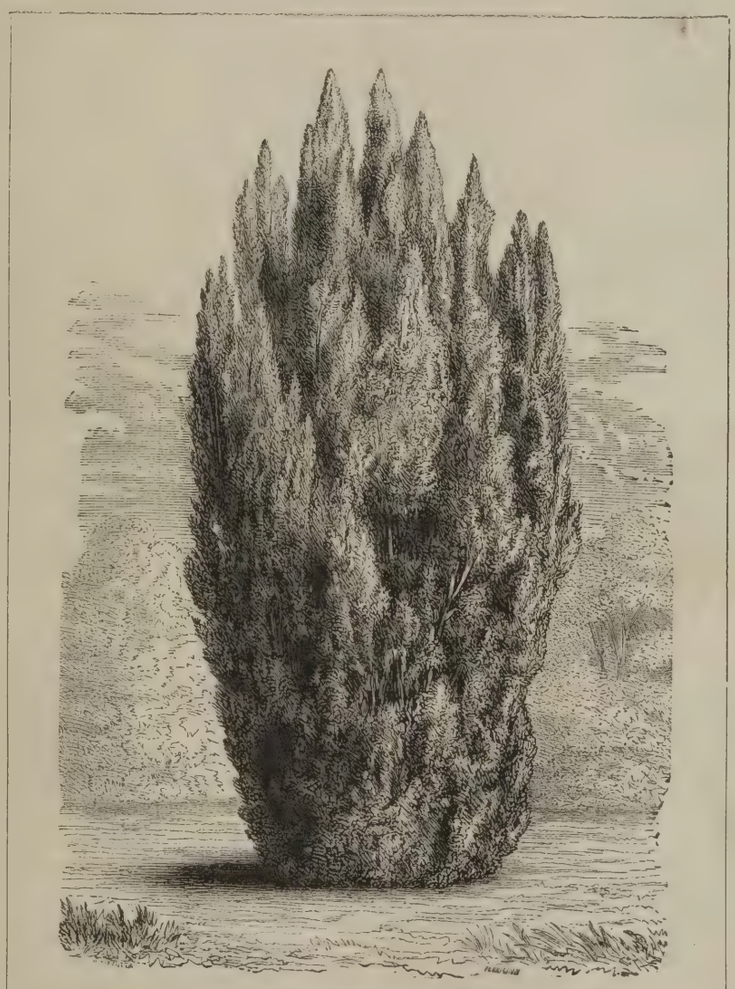
YEW TREES.

THE common Yew is a native of Britain, and, under favourable conditions, it attains large dimensions. There are also few, if any, trees which attain so great an age as the Yew; even the Oak can hardly be regarded as an exception in this respect, as the strong trunk and remarkably tough boughs of the Yew enable it to resist the power and force of fierce gales and storms which not unfrequently uproot or prostrate other trees, whether deciduous or evergreen, more particularly when such trees have become somewhat decrepit through age. The Yew being of slow growth, the annual layers of wood are necessarily thin, and this renders the grain remarkably fine, so that it is very valuable for cabinet-making purposes. From times the most remote it appears to have been customary to plant the Yew in churchyards; and possibly the oldest specimens of this tree are to be found on the sites of ancient places of sepulture, its sad and solemn aspect having, as it would appear, suggested to even the comparatively early races of mankind its adaptability to this purpose, and as a suitable companion to the Cypress. Notwithstanding, however, its gloomy appearance and funereal associations, it is at the same time a very ornamental evergreen tree, and one which tends to give a rich and warm aspect to the landscape wherever it is used. But, unfortunately, its dark green foliage is of a very poisonous character, and has on many occasions proved fatal to cattle; on this account it can seldom with safety be planted in parks or pastures, or in any situation to which cattle have access, unless such trees are so effectually protected as to be out of their reach.



THE IRISH YEW (TAXUS BACCATA FASTIGIATA).

It must at the same time be admitted that there are various instances of large Yew trees existing in parks stocked by cattle which have never been known to suffer from having browsed upon the green shoots of such trees, possibly from the circumstances of their being able to reach only so small a portion of such shoots as to have no apparent injurious effect upon them. It is, moreover, considered that the partially withered shoots or branches that may have been some time separated from the plants, such as the trimmings of a hedge, are more fatal than the perfectly fresh or green shoots. The fact, however, cannot be too widely made known that this tree is exceedingly dangerous to stock of all kinds.

Although botanists have classed the Yew among Coniferous plants, it is not cone-bearing in the strict sense of the word, but produces a red fleshy fruit or berry, which has been considered poisonous, although various species of birds eat it with avidity during severe winters, and do not appear to suffer any inconvenience from doing so, while the vitality of the seeds is in no degree impaired by the digestive organs of such birds; therefore they frequently vegetate where they happen to be dropped, and young plants are often found established in situations where they could hardly be expected to be found, such as on the face of precipitous cliffs, growing from fissures or rents in rocks, on ruined buildings, on the top of crumbling walls, and even between the forked limbs of large trees, or in any situation where moisture and the scantiest amount of soil or decaying vegetable matter exists. There are few species of trees or shrubs which so willingly submit to restriction of root and branch as the Yew; and many trees and hedges are in existence which, by annual clipping, have been kept to the same form and dimensions during very many years, and still preserve a healthy condition. There are perhaps few, if any, species of trees which can be transplanted when of considerable size with greater facility than the Yew, and this tree is consequently of very great value in the production of an immediate effect—often a desideratum. No plant is more suitable than the common Yew for the formation of hedges and screens in gardens and pleasure grounds. At all seasons of the year it is ornamental, and it is particularly so in spring or early summer, when the young shoots are beginning to be

developed, and are mostly af a rich brown or cinnamon colour, which has a very pretty effect. In winter and early spring such hedges afford a very effective shelter to tender plants of any kind, breaking or sifting the wind, as it were, and not forming cutting cold currents of air, as even walls of similar dimensions are apt to do. In the formation of such hedges, seedling plants should always be used, as plants propagated by cuttings or layers—particularly the latter—are often long before they form a leader or assume an upright form of growth, if indeed they ever do so. Even in a bed of seedling Yews considerable diversity of form is usually found among the plants, some of them assuming the more upright growth of Taxus baccata erecta; and these, although of increased value as single plants, are not so well adapted for the formation of a hedge intended to be kept close cut in, as it is desirable that the plants forming it should be similar in style of growth.

There are several varieties of the common Yew, such as the upright, already mentioned, the Irish Yew (Taxus baccata fastigiata), the golden-striped and the silver-striped common Yew; the golden-striped Irish Yew; also a weeping variety (Dovastoni), &c.; and there have been many exceedingly ornamental varieties of the golden Yew lately raised in Mr. Lane's nursery at Berkhampsted; and there are some fine examples of Yew in Mr. Waterer's nursery at Knap Hill. The Irish Yew is invaluable as a perfectly hardy ornamental evergreen, very suitable for cemeteries, as well as large or small gardens. In order that it should preserve its upright form, the plants should be grown upon a single stem, and care should be taken to prevent its branches being bent down by accumulation of snow, or by the action of high winds. A very remarkable effect is produced at Knap Hill and elsewhere by grafting some of the golden-striped varieties upon the Irish Yew at an altitude of 10 ft., more or less, as desired; the contrast between the bright golden-yellow of one and the dark green of the other is strikingly effective.

Clipping Box Edgings.—After repeated trials of clipping at different seasons, I am confident that the end of May or the first week in June is the best time for performing this operation, and for the following reasons, viz., that, although the Box is such a hardy plant, its young growths often suffer from spring frosts during May, and, by clipping at the time named, all irregularities of surface are removed; the young growth commences again immediately, and takes off that "straight-laced" appearance that always follows the use of the garden-shears. The young growth gives the edging a pretty appearance, and becomes thoroughly matured to stand any weather during the ensuing winner, which is not the case when clipping is deferred until the end of summer. The operation, although simple in itself, requires some considerable experience before it can be performed properly. For straight edgings, of whatever length they may be, we invariably stretch a line the whole distance to indicate the centre; then we take the desired width off either side, and level off the top with long clean cuts made by sharp shears. I have seen edgings laid in in almost every month in the year, and, with attention to watering, they have almost invariably succeeded; but I never saw them present an inviting appearance when the above date for cutting was very widely departed from. The greatest amount of injury is generally done through salting the walks to destroy weeds, when a heavy fall of rain floats the salt to the edging, thus most effectually destroying it. The next worst enemy to Box edgings is the foliage of garden crops or flowers overhanging them, and drawing them up weakly and blanched, so that they cannot withstand severe weather. Wheeling or treading on them also destroys them. Where proper attention, however, is paid to Box, the effect produced by it soon banishes from gardens all its so-called rivals.—J. G.

Club Mosses on Tree Stumps.—Pyramids of Lycopods are usually made by placing pans or flower-pots of different sizes one above the other, but good effects in this way may also be obtained by procuring good big stems of dead Tree Ferns, or of other trees which have a loose bark that will hold moisture. They should be potted, a small pan being secured on the top of the stump in which to plant the Lycopod; the margin left between the pot and the stump may be planted with Ferns, and a plant of the graceful Nephrolepis exaltata may be placed in the middle of the pan on the top. Any of the free-growing Selaginellas may be employed in this way, or Ferns with creeping rhizomes may be used with excellent effect.—S.

VEGETABLES.

OUTDOOR CUCUMBERS.

THERE are various expedients that may be readily adopted by those whose means are limited to shelter and protect outdoor Cucumbers in their early stages, and many handy contrivances suitable for cottagers have been designed within the last few years for the purpose of forwarding early vegetables; and I am quite convinced that a handy man, with plenty of time on his hands in the long winter evenings, could manufacture all he may require in this way. Small, light, square boxes, strongly nailed together, from 18 in. to 2 ft. square, with a couple of squares of glass to slide down to form a roof, will be as efficient, and, if kept painted, would last as long as more expensive substitutes. Frames, made of stout wire in the shape of hand-lights, and covered with oiled calico, are cheap and useful for placing over the plants on cold nights and days in the early period of their growth, and inverted flower-pots will always be found very useful on an emergency. Where a few barrowfuls of fresh stable manure or any other material that will produce a little warmth can be had, a start should be made about the end of April or beginning of May. They may either be grown in a continuous ridge or on slight hills about 4 ft. or 5 ft. apart. In the former case open a trench 3 ft. wide, and about 1 ft. deep, wheel the manure in, and cover it evenly with the soil taken from the trench, and, if possible, bring some fresh mellow loam, in which to sow the seeds. The manure should be made into a moderately firm compact ridge, from 18 in. to 2 ft. thick if possible, and 6 in. of soil on the top will be ample, as the young plants can be earthed up afterwards as they make progress. A trial stick should be plunged about 1 ft. in the bed, and as soon as the soil is moderately warm the seeds may be planted in groups (five or six seeds in a group), so that a hand-light, flower-pot, or whatever protection may be employed, will cover them. The groups or patches of plants may be placed along the top of the ridge, 3 ft. or 4 ft. apart. If the seeds all grow, the weakly plants can be uprooted, leaving only two or three at something like equal distances apart.

The Cucumber season in the open air is usually a short one, and a great deal of the future success in their development depends upon giving the young plants a fair start, taking care not to coddle and weaken them with too much warmth or too much covering. The covers may be kept on till the young plants push through, and then every fine day afterwards; if opaque covering be used they should be lifted off, of course placing them on again at night, and keeping them on during cold, windy days. With hand-lights, or any other glazed covers, a little ventilation only will be necessary on bright days to keep the plants in a hardy condition until the time comes for the lights to be removed; this should be done gradually, first tilting up the south side on two bricks, and in the course of a day or two the north side as well, letting the young shoots run outside; and as soon as the weather becomes fairly warm and settled the covers may be taken away, and the usual routine of stopping, pegging, and regulating the shoots must be gone through; this, however, is not so important a matter with open-air Cucumbers as with those altogether under glass. The shoots, of course, should be pegged down to prevent the wind from blowing them about and bruising them. Any strong shoot that shows signs of monopolising too much of the strength of the plant should be nipped at once at the point, and, during the growing season, if a little fresh loamy soil can be sprinkled over the surface amongst the growing shoots and round the main stems of the plants about once a week, it will benefit them considerably. Watering will at all times be an important point in their management; at the commencement of the season the water should have the chill taken off by the addition of a little boiling water, and as the quantity required will be small, this will not occasion much trouble; afterwards, when the plants are fully exposed to the air, simply standing the water in the sun for twelve hours will be sufficient. I need not say that liquid manure will be of great service to Cucumber plants when they commence bearing, nor yet that all fruit

should be cut when fit for use, unless seeds are required.

There are certain market growers that by a long course of selection have secured improved strains, but, as a rule, they do not care about parting with seeds; but what they have done others may do by using the same care in selecting the seed-bearing plants. In favourable situations Ridge Cucumbers may be grown—and, in fact, are grown—without any assistance in the way of bottom-heat beyond that supplied by the sun; but, as I have already stated, an early start, provided no sacrifice is made of health or vigour, means early production. I know a village in Norfolk where years ago a good many of the inhabitants used to plant their gardens principally with Ridge Cucumbers for the Norwich market, and the profit realised was always in proportion to the attention given, especially towards securing an early, healthy, and vigorous start. I am not much in favour of putting out plants that have been started in a hotbed in pots, though I am free to admit that if the seed be sown in single pots, and plunged in a gentle hotbed almost close to the glass, there is no reason why they should not thrive well, if carefully hardened off and planted out under handlights or other protection; but too often when raised in a hotbed in this way they are huddled up with other plants, and are ultimately turned out with a weakened constitution, and perhaps covered with insects, and half the season is gone before they recover sufficient strength to bear fruit, and should the season turn out unfavourable many will perish without bearing fruit at all. A crop of Gherkins may be raised for pickling purposes by simply sowing the seeds in patches, five or six in a patch, 4 ft. or 5 ft. apart, in well-prepared land early in June, without any special preparation beyond such good culture as is necessary for other crops of vegetables in garden cultivation.—E.

Growing Herbs.—No garden, however small, can be said to be complete without its bed of Herbs. With the exception of Parsley, Herbs are best grouped together in small patches in proportion to the demand, but yet at the same time each patch should be kept distinct. To keep them in strong, vigorous condition, they should be renewed by division, and in a few cases by seeds or cuttings about every two or three years. Some kinds, if they stand too long on one piece of ground, lose their vigour; and the winter, if severe, has more effect upon old plants than young ones, and may sometimes, by killing them off, occasion a scarcity; but where the plantations are frequently renewed this seldom or never occurs. Herbs are not at all particular as to soil or aspect, but one or two kinds, such as Tarragon, should not be planted in wet, cold soil if it can be avoided. From March to the end of May is a very suitable time for putting in cuttings, sowing seeds, or dividing the roots; and, if called upon to speak more exactly, I should say get all such done in April if possible. The cuttings or slips—as they will succeed well if slipped off with a heel—may be planted with a dibble, and of course should be planted firmly. In planting cuttings at all times and in all places the length of the cutting should be considered, and the hole only made deep enough for the base of the cutting to rest on the bottom. Inexperienced planters often unthinkingly practise what is termed "hanging" when planting either plants or cuttings with a dibble; that is, they make the holes deeper than the length of stem, and, consequently, the roots of the plant or the base of the cutting, as the case may be, hang suspended in the hole, and cannot obtain a sufficient grasp of the soil to become quickly established, and often perish in consequence. Of the herbs that are commonly used for flavouring, and which are indispensable, are Thyme (two varieties, Common and Lemon), which may be increased either by seeds or cuttings or division of the roots; Sage (green and red), which may be propagated by seeds and cuttings. Of Mint, several varieties are grown, but the Spear-mint is most useful, and is increased by division and by cuttings with a bit of root attached in spring or early summer; it will grow in any position, but improves by being transplanted occasionally. Fennel may be increased by seeds and division of the roots, and winter Marjoram mostly by division. The following also are not unfrequently found in gardens, and are often used to make cooling drinks and for medicinal purposes, viz., Rue, Horehound, Hyssop, Lavender, Balm, Wormwood, and Rosemary, all of which may be increased by cuttings and seeds. Camomile is best propagated by division of the roots, and it should be frequently transplanted in firm land. Amongst herbs that are highly esteemed for flavouring, and that are usually raised from seeds in spring—frequently assisted by artificial heat—may be mentioned Basil (bush and sweet), Summer Savory, and Sweet Marjoram. They should be sown, if no hotbed be at hand, the first week in May in light rich soil, in a warm, sunny place, be shaded and kept moist, and the young plants thinned out to 4 in. or 6 in. apart. If a small space in a frame or hotbed can be spared, sow a few seeds in a pot or pan early in April, harden the young plants off, and plant them out in May. By this means the plant will gain an early start. Chervil may be sown thinly in March, again in May, and again in August. All herbs that require to be dried for winter use should be cut just as they are coming into flower, and when quite dry they should be tied in small bunches, and hung up in some open, airy building or shed, and when thoroughly dried preserved in wide-mouthed bottles or jars and kept close. Basil and Summer Savory are tender, and should be cut and dried before frost is expected. When herbs are dried in the sun they dry too rapidly, and lose some of their strength.—H. O.

Plants for Out-of-the-Way Corners.—In large gardens will always be found neglected corners in out-of-the-way places. This is particularly the case under large trees (where few plants will thrive), on banks, &c. These positions may be considerably improved by the addition of plants which require but little attention. One of the most useful for this purpose is the Giant Cow Parsnip (Heracleum giganteum), a plant which produces noble umbrageous foliage and bears immense umbels of greenish-white flowers on stout stems, from 8 ft. to 10 ft. in height. It soon establishes itself, and care should be taken that it does not seed too freely, as it would cause much trouble. Altogether it is a most desirable plant, and wonderfully effective. Thistles (Carduus) are very handsome subjects for the same purpose, some of the varieties reproducing themselves freely. Galega officinalis should be found in every wild or neglected garden, as a few plants of it placed at intervals of 6 ft. or 9 ft. apart will soon establish themselves over a large area, as they seed profusely. The foliage is extremely elegant, the Pea-shaped flowers (pale blue and white) exceedingly pretty, and continue in perfection for a considerable time. The annual Sunflowers are most desirable. A few seeds of them sown in the most open places between trees and shrubs produce an effective show during the summer and autumn months. Evening Primroses (Œnothera) and Marigolds produce a profusion of bright, yellow flowers, and require no further attention than an occasional weeding. Phytolacca decandra is a hardy perennial, growing some 4 ft. in height, and bearing very handsome and peculiar spikes of dark crimson fruit. Centaureas, belonging to the hardy section, are particularly attractive, some having golden-yellow ball-like flowers, others blue, purple, &c., and all of them are of easy cultivation. Verbascums are also well adapted for shrubberies, and produce a profusion of singular Orchid-shaped flowers of various rich shades. Among plants that are more suitable for the front rank in shrubbery borders may be mentioned the following:—Nasturtiums, Antirrhinums, Canterbury Bells, Columbines, Foxgloves, Geums, Pyrethrums, Rockets, Sweet Williams, Valerian, Polemoniums, Glauciums, Lupins, Wallflowers. Polyanthuses, Pansies, Saponarias, Mignonette, &c. These are all extremely varied and beautiful, and require but little attention, reproducing themselves freely, and yielding a round of flower extending over several months. Beets, Fennels, and Acanthuses are most useful in the way of furnishing foliage, as are also Artemisias. With such plants as these, many a nook which is now neglected might be made attractive. The whole of the above require only the simplest treatment, and will well repay those who will give them a trial.

PANSIES IN POTS.

Few plants can be grown by amateurs in town or country with more success than the Pansy. They may be grown in front gardens, in boxes outside of windows, or in pots inside of windows. They merely require shelter from frost and snow during winter, and they may be grown in a sunless back yard. We lately saw an immense number of the most beautiful Pansies growing in small pots in a cold frame in Messrs. Carter & Co's nursery at Forest Hill. The plants were remarkably strong and full of flower-buds, showing what good effects might be gained in airy windows by having bushy plants in 5-in. or 6-in. pots. It is not too late to set about the culture of Pansies in pots, provided some good young plants struck from cuttings taken in July or August last were procured, well established in small pots. Pansies for cultivation in pots should be grown from cuttings and not from divided parts of the plants. Healthy, well-rooted cuttings make vigorous, stocky plants. It is best to begin in October or by the beginning of November, potting the plants into 5-in. pots, as this gives them a good start and enables them to get well established. The plants can be safely wintered in a cold frame having a dry bottom, as damp is the greatest enemy to the plants during the dead season of the year. All the water necessary during winter is just sufficient to keep the plants alive, and air should be given on all favourable occasions. If sharp frost sets in, some covering ought to be placed over the frame while it lasts.

Bedding Pansy.

Belgian or Show Pansy.

The next stage is that of shifting into the blooming-pots; this should be done about the end of February or early in March, selecting the size of the pots to suit the character of the plants; the largest can go into 8-in. pots, the smallest into 6-in. or 7-in. pots. This done, the plants should be encouraged in every way to make a free, stocky growth, taking care not to keep them too close and so imparting to them a drawn appearance. A cold frame, with the

plants resting on a well-drained bed, is the best convenience for the plants; the spot should be cool and somewhat moist, and if shaded during the middle portion of the day so much the better. Under such circumstances, and with due attention, the Pansies can hardly fail to do well. Just as the flowers are expanding some weak manure water can be given once in the morning, but having the plants raised on inverted flower pots, so that a quick drainage can be secured. A good compost for Pansies is made up of one-half good fibry loam, one third old rotted cow manure and horse droppings that crumble almost to powder, and the remainder well-sweetened and thoroughly decomposed leaf-mould. Those who make a point of growing Pansies in pots are always careful to keep up a supply of good plants from cuttings. The first batch of cuttings are taken in June, and when the plants from which the cuttings have been taken have done flowering, they are cut down to the ground, leaving any young growths that may be coming up from the roots. They are then top-dressed and set out-of-doors in a shady place, and finally turned out into the open ground in August, and planted into a prepared bed under a north wall or hedge. The soil for such a bed can be got from the siftings of the refuse soil from the potting bench, and the plants mulched with a little spent manure from a Mushroom bed, to keep the surface cool and moist. It is scarcely necessary to give a list of varieties. Any florist would be able to recommend and supply a suitable selection; only let the cultivator take care, as far as he can, that they are strong, healthy, and well-wooded plants, and as such worthy of his care and attention. A packet of seed sown now would give good plants in July and August from which to take cuttings, as well as giving a good supply for culture in beds or borders.

Flower of Double Pyrethrum.

Double and Single Flowered Pyrethrums.—A great improvement has been effected during the past few years in this family. The old Pyrethrum roseum, for instance, has been so improved that we have flowers equalling the finest of the French Asters, but with the aditional advantages of being perennial, hardy, and producing abundant bloom at a time when flowers are comparatively scarce. They are in perfection in May and June, and, with the Iris and Pæonies, form a glorious group. They are also invaluable for autumn decoration, for if cut down after flowering in June they flower again in autumn. They are easily propagated by division of the root and from seed, but the latter mode I would not recommended, as the proportion of good flowers from the best of seed is remarkably small. A good rich loam suits them best, although they will grow and flower freely in any good garden soil, and the more well-rotted manure is incorporated with the soil the better the plants grow and the more luxuriantly they flower. Mulching, especially in dry soils, is very advantageous, as it keeps the ground moist and cool. The following comprise some of the best sorts:—White and white shaded—Boule de Neige, delicatum, Madame Billiard, Nancy, niveum plenum, Olivia Argentine, Prince de Metternich, and Ne Plus Ultra; white with, yellow centre—Bonamy, Impératrice Charlotte, La Belle Blonde, virginale, and Voie lactée; purple and red—Mrs. Dix, rubrum plenum, Mons. Barrel, Brilliant, and Wilhelm Kramper; crimson—Michel Buchner, Miss Plincke, Modèle, multiflorum, Prince Teck, Progress, Emile Lemoine, and Marquis of Bute; carmine and pink—carminatum plenum, Charles Ballet, floribundum plenum, Gloire de Stalle, imbricatum plenum, Nemesis, fulgens plenissimum, Haage et Schmidt, and Iveryanum; yellow—Sulphureum plenum, Solfaterre; lilac and rose—Comte de Montbrun, delicatissimum, Dr. Livingstone, Gaiety, Galathée, Herman Stenger, Lady Blanche, Lischen, Minerva, Uzziel, and roseum plenum.—P.

HINTS ON CHRYSANTHEMUMS.

Cleansing from Dust.—If those who live in and around towns and cultivate Chrysanthemums, as nearly all do if they have the least bit of ground, only knew how important it is that they should be kept free from dusty deposits, their success would be much greater than it now is. This being the case, those who would have them thrive should not fail to give them a good drenching overhead at least once or twice a week during the summer and early in autumn; if they do this, the return will be much finer plants and display of bloom. This watering overhead is almost of as much importance as a supply of moisture at the roots, especially if the plants are growing near dusty roads or where the atmosphere is not clear and pure, as it seldom is in the vicinity of large towns and cities, where Chrysanthemums are perhaps more appreciated than anywhere else. In applying water to cleanse the foliage it is best done through a good syringe, as it then can be done with some considerable force. Failing this, a good shower from the rose of a water-pot will answer the purpose; but, however carried out, the washing should be thorough, as a slight sprinkling would only aggravate the evil by moistening the dusty deposit, and making it stick all the tighter.

Watering.—One of the reasons why we so frequently see Chrysanthemums in the naked, shabby condition they are at the time they should be looking their best, is from lack of water at the root, a state that generally brings on mildew; and if not this noxious parasite, the leaves become so starved that they die from inanition. This will be apparent to any one, as it is those low down on the stems and which get the least sap that go first; but if the plants are well fed, they will retain these till they become exhausted by flowering, when they die away naturally. When in active growth, it is surprising the quantity of water or liquid manure Chrysanthemums will take; and to ensure thorough soakings, it is a good plan to have the crowns of the plants slightly lower than the soil, that a small basin-like receptacle may be formed round them, that each may get its due share without any loss.

Growing in Trenches.—Where large specimens are required for pots, or for transferring to positions in open borders, to take the place of summer-flowering plants, a purpose for which they are well adapted, the best way is to grow them in shallow trenches; and if, in addition, they receive a slight mulching, there will not be the least difficulty in keeping them in the most perfect health. Plants treated in this way do well for lifting and transplanting under sunny walls of dwellings where it would be much too hot to grow them successfully during the summer, but where in autumn, when in bloom, the shelter is just what they require. With a very little trouble, therefore, the beauty of a garden may be considerably prolonged, as all that is necessary when the summer occupants are over is to lift the Chrysanthemums with good balls just after they have formed their buds; and if this is done during a dull, showery time, they will scarcely feel the removal. The finest and best plants I have ever seen in pots were managed in this way, and it is a plan of growing them I can strongly recommend, saving, as it does, a vast amount of labour and time in watering, besides yielding better results. Before taking them up, the thing is to see that they are thoroughly soaked a day or so previously, which will cause the soil to adhere to the roots better than it otherwise would. In potting, well-enriched loam should be used for the purpose, and the plants afterwards set for a few days on the north side of a wall, where they can be frequently syringed or watered overhead to prevent flagging. The rapid way they form roots soon enables them to set to work and get re-established, after which they bear the air and sun in a greenhouse or conservatory just as well as if they had been grown in pots all the season.

Growing in Pots.—When grown entirely in pots the most suitable soil for Chrysanthemums is good sound fibry loam, rather inclined to adhesiveness than otherwise; and if this can be had tolerably fresh, they will succeed best without any admixture whatever except a little thoroughly decomposed manure; but even this should not be strong, as it is always more satisfactory to give most of what stimulant they require in a liquid form, the advantage of which is that it can be applied when the plants most need it, instead of being unduly forced in their infant state, as many are by having too rich a soil to start with. By the end of May, early-struck plants will be ready for their final shift into 10-in. or 12-in. pots, and should after that be plunged on a firm bottom in loose littery material in an open, sunny spot, where, if well attended to with liquid manure and clear water, they will make grand plants by the autumn.

Small Plants.—The most suitable-sized plants for amateurs and others who only require them for greenhouse or window decoration may be had from cuttings struck in April; this affords ample time to grow fine little specimens in 8-in. pots, and such as these are generally the handiest for most purposes. Beautiful little plants may be had by propagating as late as May or June, and these come in capitally for window decoration indoors, or for the fronts of stages among others to fill in vacant spaces and afford more variety. In all cases the treatment and culture they require is much the same, as, unless planted out, they all do best plunged in sunny spots, well sheltered from the wind, which otherwise is sure to break them down.

Staking.—To prevent any risk from breakage by wind, they should be staked and tied early, but not in such a manner as to give them a stiff, formal appearance, which spoils half their beauty. If the main branches are firmly supported, that is all they require; and every stick used should be out of sight, as at best they are necessary evils and never any ornament—though, judging by the way they are frequently employed, many would appear to think otherwise. It should be borne in mind that to have the flowers of Chrysanthemums perfect they need early protection from frost, as they are very liable to injury in the bud state; and if allowed to stand out exposed then, a whole season's care and attention may be lost in one night. If housed, they should have an abundance of air during the day, and be kept as cool as possible.

S.

CULTURE OF STOCKS.

THE finest strain of the Ten-week Stock is that known as the large-flowering Pyramidal Ten-week. I have seen magnificent varieties of this come from imported seed—large vigorous-growing plants, branching freely, and producing a huge main spike of double flowers, with numerous branching spikes in succession. Where cut flowers are in request, a bed of these Stocks should be grown to assist in supplying them during the summer. The seed may be sown at

any time from the middle of March onward; but it is always well to get Stocks from the seed early, so that plants may be ready for bedding. The seed can be sown thinly in pans or shallow boxes, in a gentle heat, and as soon as the plants can be handled without injury they should be transplanted into other pans or boxes, and grown on quickly, at the same time taking care not to draw them so as to make them weak and lanky. There are many places in gardens where a bed or line of Stocks might be grown with advantage; only give them a good rich soil to grow in, and they will amply reward the cultivator. The German growers have a formidable list of kinds, many of which are more curious than showy. There are, however, sure to be sufficient leading colours among them, such as crimson, rose, purple, violet, and white, to yield distinct and pleasing hues. There is a strain of English selected Stocks known as Pyramidal, which are of tall growth, and remarkable for the large pyramids of fine flowers which they produce; but they are by no means so generally cultivated as they deserve to be. There is a very distinct type of Stocks known as Wallflower-leaved, which were introduced many years ago from the Grecian Archipelago, and which have shining deep-green leaves, not unlike those of a Wallflower. In all other respects the Wallflower-leaved type is like the ordinary German Stock. One of the finest varieties of this type, and at the same time one of the most beautiful Stocks in cultivation, bears the name of Mauve Beauty, a kind remarkable for its huge compact heads of pale lustrous mauve-coloured flowers. The same treatment as that recommended for the Ten-week Stock will answer for this type of Stock. The Intermediate Stock, as it is termed, though only a later-flowering selection from or variety of the German Ten-week, may be set down as a distinct type. It is used for pot-culture, to flower in early spring, the seed being sown in July and August. In growth it is dwarf and bushy, and, being very free-blooming, it is well adapted for cultivation in pots. As striking colours are best adapted for this purpose, the varieties may be said to be confined to scarlet, purple, and white. There is a fine strain of this type grown in Scotland, under the name of the East Lothian Intermediate Stock, where it is much used for beds and borders, the cool moist climate of that country appearing to suit it exactly. Instead of sowing Intermediate Stocks at the end of the summer, they should be sown about the end of March in a cold frame, and in May they should be transplanted to the open ground, in which they will flower freely through August, September, and October. In November the double flowers should be all lifted and potted, as it is unsafe to expose them to the risk of wintering in the open ground, and they continue to bloom more or less during the winter in a cold frame or cool house. They should be again planted out in March, when they will make fresh growth and flower all the summer. The single varieties are also lifted in November, and either potted or planted by the side of a south wall, where they are wintered, and flower and ripen their seed the following summer. They, too, require a rich light soil, in which they root freely. There are yet the Brompton Stock and the Queen Stock. The latter differs from the ordinary annual Ten-week Stock in being somewhat shrubby, of larger size, and of perennial duration. The principal varieties are the purple, scarlet, and white—the former being most generally grown. It is a great favourite in cottage gardens round London; and at this time of the year dense bushes of it may be met with—a mass of fine double purple blossoms. The seed should be sown in April and May, either in a gentle heat or on a warm border in the open air; the plants should be pricked out into beds and grown on during the summer, and in August and September planted out where they are to flower. A. S.

Flower Shows at Kensington.—The fortnightly meetings of the Royal Horticultural Society, held in the large conservatory, are well worth a visit by those of our readers who are interested in gardening matters. They afford opportunities of selecting the best plants and flowers, as well as of inspecting new and rare plants. On Tuesday, April 13, Messrs. Barr & Sugden exhibited a large collection of Daffodils, affording the best possible opportunity for any one wishing to make a selection to do so. Here all the known forms and varieties which flower at the season were represented, many of them rivalling in beauty some of the choicest Orchids; of which latter, by the way, an effective group was contributed by the New Horticultural Nursery Company (Mr. John Wills). What are termed greenhouse Rhododendrons were shown in fine flower by Messrs. Veitch & Sons, of Chelsea. These plants require a warm greenhouse; and when in flower, as the plants in question, they are very effective. The flowers are principally white, very large, and sweetly scented. The kinds shown were Princess Alice, Veitchi, and Sesterianium. A group of white-flowered show Pelargoniums from Messrs. Hayes, of Edmonton, were remarkable examples of good culture—being clothed with fine healthy leaves close down to the pot, and studded with fine trusses of bloom. The variety was Maid of Kent, introduced by Messrs. Hayes a year or so ago. We were told these plants had been grown by the aid of Clay's Fertiliser. A yellow-flowered Paris Daisy, called Chrysanthemum frutescens Etoile d'Or, shown by Mr. Howard, of Southgate, is an excellent amateur's plant. It is of easy growth, and bears abundance of large soft yellow flowers in a greenhouse or window all through the winter, and it is also an excellent summer garden plant. A stand of blooms of zonal Pelargoniums from Mr. Cannell, of Swanley, showed to what perfection the Geranium—the name the Pelargonium is best known by—has been brought. The flowers were remarkable for their size and variety and brilliancy of colour. Choisya tenata, a hardy plant suitable for walls, was shown in the form of a bush grown in a pot; the plant was about 2½ ft. in diameter, and covered with white orange-scented blossoms.

Caladium Belleymei as a Vase Plant.

House and Window Gardening.

Caladiums in Vases.—Caladiums make excellent vase plants for indoor decoration during the summer; but for this purpose the bulbs must not be started till about this time of year, and then in a temperature not exceeding 60° at night. When in active growth the temperature of an ordinary greenhouse will be sufficient, as if grown rapidly in a hot temperature the leaves will flag when placed in the room. They must be kept near the glass and slightly shaded from the sun; and when the vase or pot is well filled with roots it may be moved into the room where there is no gas used. The leaves must be syringed gently with tepid water occasionally to free them from dust. In a warm window Caladiums might be grown successfully.

Primula amœna in Pots.—This is one of the best of spring-flowering plants for windows or cool greenhouses. It will grow well in the shade, or it does not object to a little sunshine. The best way to secure robust groups of flowers and foliage in pots from this beautiful Primula and its varieties is to allow the clumps of roots to remain in the same pot two years together, and then break them up and re-pot after the foliage had died down. To get a fine show in this way it is desirable to have enough of stock to be able to break up clumps in alternate years, so that some established for the second year would always be ready to bloom. About nine good strong single crowns planted in an 8-in. pot will give a good head of bloom, but it will be far better the second year. I find that these Primulas make but little root growth before the blooming period, and, indeed, if it be desirable to shift at all, I think it is better to do it after the flowers have died down, as the chief root-work is done during the summer. Still, it is evident that these Primulas, like nearly all hardy ones, prefer rather to be starved than pampered, and probably throw up more flowers having brighter colours than is the case if there be an excess of root-room. Single crowns are now flowering freely in 3-in. pots, and do not care to be kept too moist; if each of these get a shift into 3½-in. pots presently they will then flower finely next year. In breaking up an established clump it is easy to select the strongest crowns and to pot those separately; the weaker ones can then be potted up thickly and will very soon make plenty of stock. Primula amœna forces badly, but under ordinary circumstances commences to bloom early in April. Some of the new seedling kinds are much earlier than others, one of the laciniated forms, named Pink Beauty, having been in bloom since the middle of March, whilst others are nearly a month later. This is a good time to get plants to start with, as then a good stock of plants may be got by next year.—D. S.

GARDENING IN TOWN.

If any one living in the country were to ask how to keep a garden of a few yards square gay with summer flowers, no better answee could be given than a reference to what is don in similar gardens in the locality. But in town—and especially in a great town such as London is—the conditions are so different that we look in vain for the gardens, large or small, that are gay in summer, or at any other time of the year, as country gardens are; and it is useless to refer the querist to what cannot be found. Whilst human life would seem—thanks, doubtless, to the innate capacity of the human frame to adapt itself to varying conditions of existence—to be as healthy in towns as in the country, plants are not so accommodating, and no power or ability has yet been able to cause plant-life to be as healthful and vigorous in towns as in the country. Plants cannot exist if deprived of the requisite light and pure air; and these two elements are just those that are found in towns most wanting. Even more essential are these elements for the production of flowers. Whilst plants, and especially deciduous kinds, may, because of the intermittent nature of their leafage, manage to exist fairly well in a dingy

atmosphere, flowers are absolutely the product of light; and if this be wanting, they either fail to develop or soon decay. Where there is wealth, a small town garden might be covered in with glass, and the plants beneath protected from the products of combustion that so largely permeate the air and befoul the leafage. Still farther, the recent experiments made by Dr. Siemens show that the electric light may be successfully substituted for the sun; and what that luminary is incapable of giving through the town murky atmosphere electricity may supply. This is one of the most remarkable discoveries of modern times in relation to plant culture, and it is specially in the formation of artificial town gardens that its benefits should be most successfully displayed. Wealth can also command what is perhaps the most practical method of furnishing a town garden, viz., a constant supply from some florist, who can produce flowers in quantity in some outside locality. There is nothing in this way that wealth may not command or the nursery trade furnish. Still, it is very easy to comprehend that none of these replies satisfy the querist, who doubtless wishes to have a garden cultivated under natural conditions, and filled with plants similar to those that beautlfy country gardens. If bloom and plenty of it be wanted, more is being asked than it is possible to gratify; but if to secure neat effects with what little bloom is possible, then nothing could be better than the conversion of the small garden into a miniature rockery, and planting it with hardy Ferns, carpeting it with various Sedums, and in all the intervening places planting, or rather plunging in pots, Fuchsias, Pelargoniums, Lilies, Lobelias, Echeverias, and several kinds of succulents, Balsams, Calceolarias, and in fact any half-hardy or hardy summer-blooming plants that could be obtained cheaply and in plenty in pots during the summer season. To have plants that could be easily replaced by others when the bloom was past its best would be an essential part of the arrangement. Amongst plants that do thrive fairly well in a town garden are the Creeping Jenny and the common Musk. To these may be added the double Convolvulus (Calistegea pubescens); the Canary Creeper, raised in pots and planted out, will do well as a trailer, if the plants are kept from the attacks of snails; and some of the dark-coloured trailing Tropæolums will be very effective. Mignonette and Nemophila will do well if turned out of the pots when strong into spots where there is plenty of root-room, but may be sown in the ground in vain. The irregular and elevated nature of rockwork not only throws the plants in a town garden nearer the light, but permits of their being washed clean, so far that all the soot so freely engendered by the town smoke is also washed from them more entirely than if growing on a low flat surface. The free use of the water hose during summer is an important element of success in town gardening, and this should be applied in the evening, as the greater amount of foulness in the air is engendered in the day; therefore, if the plants are kept clean during the night, they have much healthier conditions of life than have those which get the cleansing only that Nature gives.

A. D.

Suitable Plants for the Margins of Rose Beds.—For the outer edges of Rose beds, in addition to spring bulbs (Snowdrops, Crocuses, Narcissi in variety, and Scillas), Pansies Myosotis, Violas, and Daisies, kept in the reserve ground, and now, when the Roses have been pruned and mulched, planted at suitable distances apart, will keep on making a display for a considerable time; but it is with the plants that come into flower when the bloom of the Roses begins to wane that the best results will be derived; and by employing such as I have named above Rose beds need not have the shabby look which many so often present when the first flush of bloom is over. As will be understood from what I have said, there should be no attempt to plant so as to cover the ground, as this would interfere with the ordinary work in attending to the Roses, as well as with gathering their flowers; but enough may be done to give the ground devoted principally to Roses a cheerful appearance all through the season, without much cost in either labour or material or the least detriment to the Roses. —T.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

April 26.—Sowing Champion and Painted Lady Runner Beans; also Mustard and Cress; putting in cuttings of double White Primulas; planting a frame with Vegetable Marrows to come in early; levelling down Celery trenches and getting them ready for Peas; forking amongst Potatoes and getting them earthed up where required; giving all the newly-planted Cauliflower and Lettuce plants a good watering; also all newly-planted fruit trees and shrubs; potting offsets taken from old plants of Echeverias; sowing Cockscombs, Celosia pyramidalis, and French Beans; trimming and tying in shoots of creepers in conservatory; mulching Strawberries out-of-doors with short straw; levelling Celery land for Winter Greens; staking Hyacinths in beds out-of-doors; dusting Turnips with lime and soot, to kill fly; thinning frame Carrots; mulching Vine and Peach borders with rotten manure; digging land for main crop of Turnips; clipping Box edging; hoeing between all growing crops.

April 27.—Potting zonal Pelargoniums for conservatory decoration; also Musk, Celosias, and Calceolarias; Sowing Mignonette in pots, and a row of Sweet Peas; also sowing mixed flower seeds among Rhododendrons, another crop of Veitch's Perfection and Champion of England Peas, Spinach, and Radishes; making beds for sowing Cauliflower, Lettuce, and Cabbage seed; top-dressing Cucumbers where the roots can be seen on the surface; cutting flower-spikes from Rhubarb; sowing Canadian Wonder French Beans; potting off Coleus and Alternantheras; planting out Giant White Cos and All the Year Round Lettuces, and thinning out those left in the seed-bed to 1 ft. apart; digging out Celery trenches and getting manure into them.

April 28.—Sowing Autumn Self-protecting Broccoli; pricking off Celery, Stocks, Asters, and Violas; thinning out and hoeing amongst Turnips, and tying up Lettuces to blanch; potting Caladiums, Perilla, Sedum variegatum, Capsicums, Chilies and Vegetable Marrows; sowing Victoria Stocks, ornamental Grasses, Clarkias, Collinsias, and Nemophilas; also Turnips among bush fruit trees, and more Spinach between newly-sown rows of Queen of the Marrow Peas on a north border; planting Violets in beds, herbaceous plants, Myosotis, and Cerastium; also Sir Harry Strawberry plants that have been forced and duly hardened off; pricking off Saponaria calabrica, Daisies, Stocks, and Aubrietias; putting in cuttings of scented-leaved Pelargoniums; top-dressing inside Vine borders with cow-manure, digging land for French Beans, and watering Turnips and Cauliflowers; hoeing among Cabbage and Cauliflower plantations.

April 29.—Potting off Globe Amarantus, Lobelia, Bouvardias, Plumbago and Fuchsias; repotting Vallotta purpurea, Palms and Pomegranates, plunging the latter in a leaf-bed; shifting tree Mignonette and Celosias into 8-in. pots; also Tomatoes; sowing another batch of Balsams, Cinerarias, Calceolarias, and Cockscombs; also a bed of Walcheren and White Cape Broccoli, Marjoram and Sweet Basil; likewise Syon House Cucumber, Melons; planting Asparagus, Celery, Globe Artichokes, Vegetable Marrows, and Tomatoes; pricking off Marigolds, Lobelias, Asters, Phlox Drummondi, and other annuals in cold frame; putting in Pink and Carnation cuttings; plunging Tuberoses out-of-doors; top-dressing Lilies in pots; transplanting white Spanish Onions brought forward in pots; washing Roses on walls with Quassia-chip water, to kill green fly; removing the coverings off Apricot trees, and thinning the fruit where set too thickly; spawning and moulding over Mushroom bed under a north wall.

April 30.—Sowing Spinach, Cardoons, Early Snowball Turnips, and a little Endive; potting Balsams and Caladiums; looking over Cucumbers and Melons, stopping them, picking off all false blossoms, and earthing them a little where required; getting out drills and planting early-sown Leeks; thinning out Parsnips, and hoeing the ground amongst them; potting off Tropæolum canariense, and Primulas; shifting Standard Pelargoniums and Heliotropes into the pots in which they are to flower, and placing them in a late Vinery; also potting young Fuchsias; sowing Peas in trenches which had previously been heavily manured; also a few more rows of Broad Beans amongst Currant trees; planting Lily of the Valley, and Spirea japonica; also Gladioli in well-manured ground; fertilising Melons as fast as they come into flower, and keeping them at a temperature of from 68° to 70°; syringing Plum trees with soft soap and Tobacco-water in order to kill black fly; raking round Rose trees to make the ground available for sowing Mignonette seed; thinning Apricots and Peaches; taking up Broccoli and placing it in a cool cellar.

May 1.—Sowing prickly Spinach, Parsley, Chervil, Ridge Cucumbers, Scotch Kale, White Cape, Surprise, Champion, and Eclipse Broccoli, and another bed of Radishes and a little Cauliflower; planting Madame Falcot Roses; staking and tying Pelargoniums and Clarkias; also tree and other Mignonette; pricking out East Lothian Stocks; watering Beans, Carrots, Potatoes, Celery, and seed beds with weak guano-water; disbudding Peach and Nectarine trees out-of-doors; digging ground for late Peas; looking over Rose trees for maggot; netting Sweet Peas to keep off sparrows; sowing Asters, Stocks, Mignonette, and other annuals; looking over Peach trees on open walls, disbudding them, and washing them with Quassia-chip water in order to kill green fly; rolling down all gravel and turf that require it; hoeing amongst all growing crops.

Glasshouses.

Brugmansias.—Old plants of these that were cut back and started some time ago will now have made a certain amount of growth, and may, if they require it, receive larger pots, or have the surface renewed with fresh soil, keeping them in any available structure where they will get plenty of light and air, so as to keep their shoots short and stocky, which latter is essential to a vigorous head of bloom.

Greenhouse Dracænas.—These, especially while confined to a small or medium size can be used for so many purposes that they are almost indispensable, but it is necessary to keep up a continuous supply of young ones, as the larger stock will come in for use where smaller plants would not be so effective. When they get naked and leggy it is well to take off their heads, putting these singly in pots just sufficiently large to steady them, and subjecting them to a warm, confined, moist atmosphere, treatment under which they will soon root. The stocks, after the heads are removed, if placed in stove heat will before long push out a number of shoots that can be taken off as they get large enough and rooted, or a portion of the stems may be cut into lengths of 1 in. or 2 in.; these, if treated like cuttings in warmth, will break and form roots in a very short time, making useful little plants in eighteen months.

Arum Lilies are most serviceable when grown with single crowns that can be flowered in 6-in. pots; a plentiful supply of this size will be found of very much more use than large specimens. The flowers are of such a distinct and striking character, that one bloom is frequently as effective as two or three, and when sufficient numbers are grown to admit of their being brought into flower in succession, there is no difficulty in a supply being kept up from Christmas until late in the spring, but where Callas are grown in quantity it is best to turn them out in summer. Specimens that have flowered, consisting of several crowns, should now be taken out of their pots and divided, putting them in a row in a light situation in a well-prepared piece of ground about 1 ft. apart, supplying them sufficiently with water through the season until the beginning of September, when they can be taken up and placed in pots of the size above mentioned, in which they will bloom.

Large-flowered and Fancy Pelargoniums.—The blooms of these will now be fully formed, and will have made some progress, and be indeed in a condition to be benefited by the application of manure-water, which if used too early in the season is apt to cause a disposition to produce leaves at the expense of flowers. If sufficient ties and supports have not been already given to the plants to keep them in a presentable state, at the same time avoiding all stiff, formal training, this should at once be attended to.

Ferns.

Hardy Ferns.—Remove any old leaves that may be on deciduous kinds out-of-doors, and loosen the surface soil about them, making it at the same time clean and neat. Roots of these may yet be safely transplanted in shady nooks. Hardy Ferns wintered in frames and greenhouses should have their old fronds cut away, the mould on the surface of the pots cleared off, and the pots themselves either plunged in the Fernery in the open air or the plants turned out of the pots and planted in the soil permanently. In some cases it may be advisable to re-pot a few, and to keep them growing for conservatory decoration, or for planting in the outdoor Fernery, after their fronds have been formed indoors.

Greenhouse Ferns.—These are now starting into growth, and if any remain yet unpotted which require a shift attend to them at once. Stove Ferns, as a rule, are in a moderately advanced state; consequently, heat, moisture, and condensed light by means of shading, are necessary for the perfect development of their fronds. Filmy Ferns must now remain undisturbed, closely shaded, and sprinkled overhead every morning, and in the evening too, if the weather be very bright and warm. Maintain an equable temperature about these plants by tilting up the lid of the case in which they are growing a little during the daytime, and closing it at night.

Flower Garden.

For the next two months lawns will require to be mown once each week, and after that once a fortnight to the end of the season. Walks should always be rolled after heavy rains, and the weeds on them be kept down by hand-picking. It is not yet too late to turn and surface-gravel any that require that attention; but the sooner it is done, whilst the weather is showery, the better will they consolidate. Bedding out will now demand a large share of attention, both as to preparation of beds and plants.

Auriculas.—We are now in the midst of preparations for exhibiting our Auriculas—not wholly welcome work, inasmuch as they, as a matter of course, must consist of the best plants and the choicest varieties, and they do not always come home in quite such good condition as that in which they were before being removed from home. It is, too, a very anxious time for the cultivator. Some of the choicest kinds are very scarce, and if any accident happen to them it is sometimes difficult to get another plant of the same sort. As a set-off, however, to all this, an exhibition of this kind affords an opportunity for growers from all parts of the country to meet together and discuss matters relating to Auriculas. The general public also have an opportunity which would not otherwise be afforded them of seeing the plants. As Auriculas go out of bloom, if it be not intended to save seeds, the flowers should be pinched off as soon as they fade, leaving part of the footstalks. If the stem be broken off the portion that is left does not dry up, but dies off, moist down to the centre, and sometimes kills the plants. Now is the time to hybridise, in order to obtain seeds that will produce new and good varieties. Green-edged varieties should be crossed with flowers of the same section; grey-edged with grey-edged, and so on. In the case of alpines the light-edged flowers with white centres should be crossed with others of the same class. Shaded-edged flowers are most esteemed, and such only should be used for parents.

Hollyhocks.—All these ought to be planted out by this time in beds or borders; even the spring-propagated plants should be put out at once, if not already done, and great care should be taken in planting them, especially if the spikes are intended for exhibition. Some good loam mixed with a third part of rotten manure should be placed round the roots. It is by paying attention to minute details that success is achieved.

Pansies.—These require continual attention. Now wire-worm and the leather-coated grub will be troublesome underground, and must be looked for if the beds indicate their presence. A show Pansy will continue to flower until the character of the blooms are so deteriorated that the variety cannot be recognised; in that case pick all the blooms off and surface the soil round the roots with rich compost; this will restore the blooms again to their original size and quality.

Tulips.—These are now becoming interesting; their flower-buds are rising strongly. They are later this year than usual. Ours are fully exposed to the weather, and, though frosts by night and keen cutting winds by day have been the rule rather than the exception, not a leaf or bud is injured. If the surface of the beds has not been dressed with rotten manure, that should at once be done. The different species of Tulips that have been introduced recently are very interesting, some even very beautiful, and they form a distinct and pleasing feature in beds or borders. They can also be grown in pots in cold frames, using light soil in which to plant them. The bulbs of some of them are small, and therefore they do not require to be covered deeply.

Hardy Fruit.

Peaches and Nectarines should now be disbudded, and if done early it may be done finally. As soon as the fruit is set it will be advisable to thoroughly syringe or wash the trees with the garden engine in order to cleanse them from fallen blossoms; and if aphides, appear, dust with Pooley's Tobacco powder or syringe with Tobacco water. Currant bushes are frequently, even before the foliage has fully expanded, attacked with the blue aphides, for the destruction of which nothing is better than frequent washings with clear water. Young, newly planted trees are apt to grow too strongly, more especially the uppermost shoots. In order to check this tendency it is well to stop the leading shoots twice or so during the season; a more equable distribution of sap to all parts of the tree is thus ensured, and therefore a more even growth. Such remarks are not only applicable to newly-planted Apricots, but to all other kinds of fruit trees, and not only to wall-trained trees, but also to nearly all others. Still, let the trees be sheltered nightly; the fruit will swell more kindly by avoiding extremes of either heat or cold, therefore, for the present, the blinds should be down for a couple of hours during the brightest sunshine.

Kitchen Garden.

A sowing of French Beans may now be made on a warm border. It is not, however, advisable to put in many until the beginning of May, as they are liable to be injured by the weather; neither is it advisable to sow at all until May where the land is of a cold retentive nature; but in such localities, when this vegetable is particularly desired early, a fortnight may be gained by at once planting a couple of Beans in 4½ in. pots, and keeping them in a frame until the third week in May, after which there will be little danger from frost. The seeds of early sowings out-of-doors do not cover more than 1 in., for if sown deeply, and the weather becomes very wet, they will rot. The Red Flageolet is one of the best of dwarf Beans, being good in quality and a heavy cropper. A few Runner Beans may also now be sown in a dry situation, but do not at present risk too many. Ordinary Pea-sticks, say 4 ft. in height, will answer very well for Scarlet Runners, pinching off the points of the shoots as soon as they get to the top of the support, and in this case the rows do not need to be more than 4 ft. apart. They will also do well without any sticks. If the rows be planted 3 ft. apart, the seed 9 in. asunder in the rows, and they are simply allowed to live on the ground, they keep breaking out and flowering all through the season, and the quantity of Beans which they produce would not be credited by those who have not seen them grown in this way.

A few more Turnips may now be sown, and for the general crop none are better than the Red-topped American Stone, already recommended for the earliest sowing. As with most other vegetables, it is much the best practice to grow Turnips in rows. Sowing in this way takes a little more time, but any loss in this way is saved many times over by the facilities given for the use of the hoe in place of hand-weeding, which must, in a great measure, be resorted to where such crops are sown broadcast. Another sowing of the different sorts of Broccoli before advised should now be made; also one of Cauliflower, both Summer and Autumn Giant. More Lettuces should likewise be at once sown; and now and all through the summer these should be sown in rows where they are to be grown. The ground for them should be well manured; the rows should be 15 in. apart, the seeds put in thinly, and, when large enough to handle, they should be thinned out to 1 ft. or 15 in. apart. Another sowing of Broad Beans may be made where these are required late, but such as are put in now will not bear so well as those sown earlier.

GLASSHOUSES & FRAMES.

GREENHOUSE PLANTS FROM SEED.

After Azaleas, Camellias, Epacrises, and similar plants are over, we look in a great measure to Fuchsias, Pelargoniums, and that class of subjects, to take their places; but these do not afford variety enough to be satisfying and effective. I purpose, therefore, to give a list of a few plants that may be raised from seeds sown now in time to supplement them.

Celosias.—Foremost in point of usefulness are Celosias, but many of the strains of these, like those of Balsams, are comparatively worthless. If, however, those having the fine pyramidal habit peculiar to some, and the lovely light feathery inflorescence which such produce be obtained, more ornamental objects than they are cannot be desired; and not only are these most valuable for furnishing purposes, but they are equally so for yielding cut bloom, a few sprays of which are a great ornament in any vase, as they are both light and elegant-looking, and, in addition to this, last a considerable time in perfection. By getting a mixed packet of seed, many shades of colour may be expected, as they vary from bright crimson to delicate pink, and there are others that bear soft yellow plumes; so that the contrast between the whole when selected and judiciously arranged is most effective. Being subject to red spider, they should be grown in a moist heat, and kept freely syringed till their flowers appear, when they will stand safely anywhere in the ordinary temperature of a greenhouse or room till quite late in the autumn; and if wanted beyond that time they do well in the warmth of a stove. The old Cockscomb, from which these Celosias originated, is a very stiff, formal-looking object compared with such graceful-habited plants as these. Nevertheless, they are very showy-looking, and have their admirers; and where it is desired to grow any of them they should be sown and managed in much the same way as recommended below for Balsams, so far as the potting, plunging in heat, and treatment of that kind is concerned.

Balsams are generally grown, and little need be said about them except that the finest strains should be procured, as the inferior kinds are not worth house room. To grow Balsams well, the seed should be sown in brisk heat, to induce free germination; and immediately the plants show themselves above ground it is important that the pots or pans containing them be set on a shelf, or elevated in some other way, so as to bring them close up to the glass to prevent etiolation. As soon as they stiffen a little, they will be fit for potting off singly, which should be done in light rich soil in small pots, and the plants returned to a similar position, there to remain till they are well rooted and ready for shifting. In doing this the best cultivators always drop them a little lower at the collar, the object being to bring the bottom branches well down, that they may be pegged or tied out, and thus furnish a good base towards forming a perfectly symmetrical specimen. In cases where room cannot be spared in a light house in which to grow them, a pit or frame answers the purpose very well after the weather gets a little warm. To keep them sturdy and short-jointed under such conditions, they must have plenty of air on all favourable occasions; and, to prevent the attacks of red spider, heavily syringe early in the afternoon, just before shutting them up. Their precocious habit of blooming renders it necessary to pick off the first buds that show if fine large plants are aimed at, by doing which those that come after are larger and more regular, and, as they appear in quantities together, make a far better display. The soil for potting in after the earlier stages cannot well be too rich, and may consist of one half loam and the other part thoroughly decomposed mild manure that has been laid up for a long time; but if such as this is not at hand, leaf-mould may be substituted, as stimulants can be given as often as desired in a liquid form.

Browallia elata.—There is another annual to which I would call particular attention as specially deserving pot culture, and that is, Browallia elata, which bears innumerable small blue flowers, of great service for cutting and working up in bouquets, as the sprays are just of that size and character to suit them for that purpose. A batch sown now, and grown on anywhere in a cold frame till the end of May, and afterwards outdoors, will be gay by September; and another lot raised in July will last in bloom the whole winter through. At that season, however, the plants require heat, and if in that of a cool stove, there seems no end to the flowers they yield. Being of a fragile habit, we grow three in a 7-in. pot, where they are placed triangularly near the sides, and thus make fine masses, fit for the embellishment of window recesses, or any other purpose for which they may be required. Rich, light soil suits them best; and as they require plenty of water, free drainage should be given, that it may pass off quickly without injuring the roots.

Schizanthuses.—These are very beautiful annuals, and make splendid pot plants, growing about 2 ft. high, and bearing flowers very much resembling butterflies with outstretched wings, the petals being blotched and spotted much in the same manner those insects are marked. The variety having these characteristics is named papilionaceus, on account of the similarity referred to; and there is another kind, of quite different habit, equally deserving of cultivation. This is known as Grahami, the blossoms of which have more the appearance of some of the choice Orchids, and are of great value for cutting. By sowing either of these in heat at once, they may be soon grown on to the flowering stage; and if another sowing is made towards the end of July they may be had in beauty nearly the whole year through. As with the Browallias, the best way

is to put three in 7-in. or 8-in. pots, by doing which they furnish up well, and produce a much better effect.

Torenia Fournieri.—Those acquainted with that old highly ornamental stove plant, Torenia asiatica, will require no further recommendation of the first-named than to be told that it is almost the exact counterpart of that once popular variety, so far as regards the form and colouring of the flowers; but, instead of being a creeper and requiring stove heat to grow it in, T. Fournieri has more of a shrubby habit, and only requires the temperature of a greenhouse, where it blooms profusely and continuously the whole summer through. To get it up to this stage, however, it needs some warmth, such as may be afforded in any pit or frame containing a bed of fermenting material, a situation in which it succeeds remarkably well, as it does also later on in any cold frame, if shut up early in the afternoon, so as to benefit by the assistance that may be obtained from the sun. To induce the seed to germinate freely, the best way is to cover the pot or pan containing it with a piece of glass, shaded for a few days with paper, which keeps the soil more uniform in respect of both heat and moisture. This is an important matter with all small tender seeds, but one that is too frequently lost sight of; and a want of due observance as regards this at the outset is the cause of many failures. The soil best suited to grow this Torenia is a mixture of loam and leaf-mould in about equal proportions, or, failing the latter, refuse peat answers the same purpose, and may therefore be used in its stead.

Ipomœas.—Of these there are many varieties, all more or less lovely in the rich markings of their flowers, which bear a close likeness to those of the Convolvulus, but are much larger and more brilliant than they. Placed along the front of a greenhouse under the rafters, and trained up beneath them on wires, they have a most ornamental appearance, as they have also up pillars or other supports in a conservatory, if the positions assigned them be not too shady, as sun is requisite to induce them to grow freely and open their blossoms. Seed should be sown in strong moist heat, and the plants grown on quickly in the same for a time, till they are large enough to be hardened off and transferred to their permanent quarters, where they will require plenty of water to keep them clean and free from red spider.

Petunias.—These make a splendid display in pots, especially if the new double varieties are obtained; but to have any of them in real perfection they must either be grown outdoors after May, plunged in some sunny spot, or in very light pits, or housed where they can have the solar rays without shade, and plenty of air to keep them from drawing. Managed in this way they come very stiff and short-jointed, and are therefore much more floriferous than they are when the shoots are sappy and soft. Besides being so gay and effective in pots, Petunias make capital basket plants, the single kinds being best adapted for this purpose, on account of their stems and habit being less stiff, which enables them to droop over and depend more naturally, without pegging or interference to bring them into that desirable condition. Seeds of Petunias germinate quickly, and the plants, under good treatment, are large and strong enough to flower in about nine or ten weeks from the time of sowing. Stiff fibry loam suits them best, in which they should be potted somewhat firmly.

Mimuluses have been so much improved of late years that they are thoroughly deserving of a considerably extended cultivation, as they are not only exceedingly showy, but they are likewise very enduring, and with plenty of water and partial shade they will continue blooming for months. For the embellishment of windows I know of nothing more telling and useful than these; they are just at home either in baskets or pots. Some of the kinds are very curious, having hose-in-hose flowers; and the majority of the different varieties are rich in colour, and very varied in the character of their quaint markings.

Grevillea robusta.—If foliage plants are wanted to disperse among the flowering, seeds of this, Acacia lophantha, and Zea japonica variegata should be sown, the two former being quite as elegant in point of appearance as any Fern; and the Zea, with its bold leaves so beautifully marked, is a striking object if stood well up, that it may show out here and there on the stages above others. The Grevillea and Acacia will be found to germinate more readily if the seeds are soaked for twenty-four hours in milk-warm water to soften them a bit, when they should be sown in light soil and placed on a hotbed. S. D.

Standard Fuchsias.—Fuchsias grown in the form of standards are for many purposes better than bushy plants, as they can be placed among small plants; and their heads of bloom standing boldly out, show themselves off to the best advantage. Standard Fuchsias are easily grown; all that is needed is to start with strong cuttings, train them in an upright direction to a stake, and keep all the side-shoots pinched off. When the desired height of the stem is attained, pinch out the growing point, and a bushy head, may, by stopping the shoots several times, be quickly made. A thick head, is, however, not

Standard Fuchsia.

so effective as a light one composed of long graceful shoots.

Standard Heliotropes and Habrothamnus.—Standard plants are often considered in themselves not very striking objects, but they are most useful in combination with others of a dwarfer character, as by their use the disagreeable even surface frequently present in greenhouses and conservatories is avoided. The above two subjects are particularly adapted for growing in this form, and the present is the most suitable time through the season for preparing them. They may consist of established plants, headed down to near the collar; when broken into growth the shoots should be thinned to a single stem, which should have a stick for its support, and should be run up to the height required, which may be from 3 ft. to 5 ft., according to the size or description of the structure which they are intended to occupy and the plants with which they are to be associated when in flower. After the desired height has been reached stopping must be resorted to, and continued until the heads have attained a sufficient number of shoots. If headed-down plants like these are employed, as soon as they have fairly broken they should be turned out of the pots, a portion of the old worn-out soil should be removed, and more root-room should be given them, using tolerably rich soil. Thus managed, useful-sized examples may be had by autumn, at which time their flowering will be found very acceptable. If established plants be wanting, it will be necessary to proceed in the usual way with cuttings, which, if treated liberally as regards pot room, will soon reach a serviceable size. In reference to the Heliotrope, so much esteemed for its perfume, it is doubtful if any of the new varieties are better than or equal for this purpose to the old original kind, which still appears to have the preference with growers for market.

Balsams.—As it is now time for sowing the seed of this beautiful greenhouse annual, a few lines as to its culture may not come amiss to some of my brother amateurs. As the Balsam requires the aid of a hotbed to start the seeds in, the third week in April is soon enough for sowing. In preparing the compost for the seed pan or pot it is best not to get it too heavy, as the small rootlets cannot then get down. The mixture I find to suit best is one-half good fibrous loam well chopped up, and one-half leaf-mould nicely sifted. As soon as the young plants appear 1 in. above the pot take them out of the hotbed and place them in a cold frame for a few days until their second pair of leaves appears; then pot them off singly in 3-in. pots, using similar compost as for sowing the seed in. Care must be taken not to pot too firmly. Place the plants back on the hotbed for a few days until you see they have made a fresh start; then take them out, place them on a shelf in the greenhouse, or place them in a cold frame facing south, where they will have the benefit of the light and sun, giving more air as the days increase in length and the sun in strength. Watering must be carefully attended to; if they are allowed to remain dry the lower leaves will fall and give them an unsightly appearance. Syringe them overhead in the afternoons of bright days; they will not only be benefited by it, but it will also help to ward off green fly. By this mode of culture I have grown them on, and flowered them in 8-in. pots, with the stem just above the rim of the pot as thick as a spade-handle, 18 in. high and 15 in. through, one solid mass of flower, which is suitable either for the window or the conservatory.—D. W. B.

Tree Pæonies in the Conservatory. Plants of the Tree Pæony forced into bloom at this season of the year form attractive objects in the Conservatory at Pine-apple Place. They consist chiefly of plants with a single stem 12 in. to 15 in. high, and surmounted by large heads of blossom. The variety chiefly grown is one named P. arborea Elizabethæ; it bears very large heads of flowers, which are well formed, very double, and of a bright rosy-pink. In order to get Pæonies to open their blossoms perfectly, little heat must be given until the bloom-buds are visible, when they may be placed near the glass in a warm temperature with every prospect of success. On account of the attractive character and longevity of the blossoms of the Pæony, they might be grown for conservatory decoration, either in the shape of large or small plants, to a much greater extent than is at present the case. Small plants such as those described are among the best subjects for vases in rooms.

Cordyline indivisa.—This is by no means an easy plant to cultivate, but when well grown it is one of the most graceful. Its leaves are of a pleasing bronze, and maintain their character under good culture for years. At one time it was rather scarce in nurseries, but during the last year or two it has become fairly plentiful. The best treatment is the following: Procure a nice healthy plant in a 4-in. pot at once, and if the roots are fresh and healthy remove it at once into an 8-in. pot; but if they are not strong then a 6-in. pot will be sufficient for the first shift. The most suitable compost is fibrous peat and loam in equal proportions, broken so as to pass through the meshes of a ½-in. sieve, but with the fine portions sifted out. To the rough pieces add an eighth of potsherds and charcoal, broken to the size of Peas, and sufficient sand to make the whole perfectly porous. Let the pots be perfectly clean, and drain them thoroughly. In potting, take care to keep the base or collar of the plant well rounded up, and press the soil firmly. Place the plant in a warm and shaded part of the greenhouse, and water cautiously until such time as the plant starts into free growth, and then a copious supply may be given. If the plant gets into free growth, a second and perhaps third shift may be given during the season; but it will not be advisable to shift later than the end of July, as it is important that the pot should be full of roots before the winter commences. As the light decreases, gradually diminish the supply of water, so that the plant may be kept comparatively dry during the winter. The best situation for the plant through the winter will be a dry shelf, where there is a free circulation of air, but no cold draughts. In such a situation, with judicious

attention, the Cordyline will grow on for years. —A.

ANSWERS TO QUERIES.

1930.—Begonias and Cockscombs.—Begonias can be grown easily in any ordinary greenhouse if it be kept fairly warm at this time of the year (that is, a temperature of about 60°), and will do without artificial heat in the summer months. Many kinds do well planted out in beds in the open air. The seed should be sown in a gentle heat in shallow pans, and in fine sandy sweet soil. If good it will germinate in a week or two, and the chief requisite of good cultivation is to keep the plants growing on without check till they come into bloom. Cockscombs should be sown and raised in the same way, but, as it is of the first importance the plants should be dwarf, it is a good plan to grow them on in a warm frame near to the glass, giving a little air in the daytime. Some growers to keep them dwarf make cuttings of the plants and re-root them, but that is of questionable advantage. The needful cultivation may be summed up in the words—rich soil, enough pot room, a gentle heat, plenty of light, and kept constantly growing.—A.

1925.—Begonia Seed not Germinating.—There is too much reason to fear that Begonia seed sown in entire accordance with the instructions given on the packet must have been bad at the first. It is, however, often easier to read such specific directions than to follow them to the letter, and, therefore, after all the seed may have been good, but it was perhaps swept off by woodlice or by a slug in a night; or it may have been too often watered, or the temperature was not high enough, or a thousand things may have happened to it. No doubt it will be wise to get more seed and sow again, and probably as the season is more advanced better results may follow.—D.

1926.—Green Carpeting Plants.—Sedums are amongst the best of carpet plants, and propagate so rapidly that a carpet is soon obtained if merely single points be pricked in over the surface of the bed. The two best are S. lividium (green) and glaucum (silvery). Both kinds are remarkably neat and effective, and the diversity in the hues of the foliage is a great recommendation. Another capital carpet plant is the Veronica repens, a close, compact, creeping kind that forms a singularly dense covering. It is of a deep green colour, and in the spring is literally smothered with tiny white flowers. This is also propagated by division, and increases with great rapidity. Spergula pilifera may be raised from seed or propagated by division, but although a very fair carpet plant, it is not so good as the others named. The Russian Pyrethrum gives a capital covering, but is a deep-rooting plant, and is better fitted for rockwork, where it may remain permanently. The dwarf mossy Saxifrages will do very well also, but they increase more slowly. All these plants will do fairly well either in shade or in sunshine. The old-fashioned Creeping Jenny and double Daisies will also make carpets of foliage, and at the proper season bloom also.—D.

1930.—Caterpillars on Cabbages.—The best way of destroying caterpillars on Cabbages is to hand-pick them off and drop them into hot water, or kill them in some other equally expeditious way. To prevent caterpillars appearing, look under the eaves of buildings and under coping and other warm sunny corners in summer and autumn, and destroy the insects in the chrysalis state. The name of the common black slug is Limax ater. Lay brewer's grains in little heaps about the beds where they are troublesome, and visit them at night with a candle. Freshly-slaked lime dusted about very early in the morning as soon as it is light will reduce their numbers.—E. H.

1788.—Old-fashioned Flowers.—The best way to cultivate the varieties of the common Primrose is to provide for them a bed of turfy loam, such as can be dug from an old pasture; or failing that, old mellow garden soil such as would grow first-rate Celery; if the latter, it should be mixed with about a third of leaf-mould rotted to powder, peat, or old hotbed manure rotted to dust. At least 18 in. of soil should be provided, and the drainage must be good. The best position is one exposed to the sun in winter and spring, but shaded from the hottest sunshine in summer, and sheltered from cutting winds. If there are no deciduous trees to give the necessary shade, a shelter can be easily contrived by means of summer climbers, such as Sweet Peas, Convolvulus, or Scarlet Runners; the position must not be made confined or damp. An inch of half-rotten leaves should be placed on the bed every autumn, and slightly pricked in with a fork. The Wood Anemone may be found growing wild in the thicker parts of the same coppices in which Primroses thrive, and therefore may be planted in the more shady parts of the same border. Pansies will grow plant and plant with the Primroses. Polyanthuses and Auriculas require the soil a little heavier, but otherwise the same treatment will suit them. Violets require the soil still more inclining to clay, but the same annual dressing of leaf-mould. The plants described would seem to be starving; the new roots should spring in the autumn from the collar of the plants immediately under the leaves. There must be something wrong with the soil or situation if Daisies refuse to thrive, as they will grow almost anywhere except in a stiff intractable clay.—J. D.

1970.—Grubs on Lawns.—This is the grub of an insect resembling the Daddy-longlegs,

A fine Vase Plant (Cordyline indivisa).

but about half the size, and darker in colour. I do not remember noticing it until about three years ago, since which time it has increased greatly in the suburbs of London. If it goes on increasing in numbers, it will be much more destructive to lawns than the Daddy-longlegs; for, whereas the latter comes to the surface to feed in the night and can then be destroyed, this seems to remain underground until March or April, when it appears as described, to search for dry crannies in which to assume the chrysalis state. It seems to feed exclusively in the late autumn and during winter. Catch and kill is the only way of getting rid of them. This class of insect is the favourite food of the swallow, and the absence of these birds in towns is the cause of their great prevalence.—J. D.

1924.—Tortoise in Vinery.—I have kept a tortoise about six years in a Vinery, and never saw that it did the least harm to the Vines. It eats readily Mustard flowers, Lettuces, and leaves and flowers of the Dandelion; but its favourite diet is Buttercup flowers, never seeming to tire of them. I feed it once in the day when the sun shines, and it has access to a pan of water, but I never saw it drink; it also likes some loose soil to burrow in, and some hay to sleep in. I think the tortoise will stand any amount of heat, though I often put mine in a cold frame during summer, with hay and shelter in one corner, as he does not like to be rained upon. I had it to destroy insects, but believe it is a perfect vegetarian. I winter it in the cellar amongst some hay.—E. Jackson.

1891.—Cobæa scandens from Seed.—The plants are probably kept too moist, especially in the winter. I had one which lived and grew in a 12-in. pot, and almost refused to die, although it had no water for six weeks. Several shoots of it which had found their way amongst other climbers seemed ambitious of realising *Fun's* facetious invention of the creeper which grew and flourished, though its stem was severed, because it could not see its root, as they remained green and growing some weeks after the pot containing the roots was removed. The plant was in an unheated greenhouse, exposed to the whole sunshine after 12 noon.—J. D.

1981.—Wild Flowers.—The Wood Anemone may be found in profusion in the coppices between Wrotham and Stanstead, in Kent. Seal Chart and the woods between Seal and Igtham, in the same locality, are also likely places for the flowers named, the most shady places for Wood Sorrel. Wild Hyacinths may be found by the footpath over Shooter's Hill to Eltham. The western slopes of Hayes Common, in Kent, should also be visited. I have only been there in the late autumn, but the locality seemed likely. The Wood Anemone flowers in March or April, the wild Hyacinth in April and May: both these plants are in cultivation, and may be had from nurseries. The Wood Sorrel is also in flower now in warm localities, but in cold ones it will not flower much before the end of June.—J. D.

1969.—Painting Greenhouse Floor.—Procure from a chemist some commercial hydrochoric acid and mix one part with ten-parts of cold water, taking care not to inhale the fumes of the acid, as it occasions a kind of colic. This acidified water will remove any deposit of carbonate lime, which would tend to make the tiles dirty-looking; also it decomposes any green stains. I would advise, after the use of the solution, a good swill down with clean water, drying the floor with a flannel.—A. B. T.

1923.—Peas with Beetles Inside.—Considering that there are something like 500 species of weevils or beetles inhabiting Britain, all living upon vegetable substances, the wonder is that so little is known about them. The species named by "Gardener" is probably one of the Pea weevils (Cureulis lineatus), which not only eats the seed but attacks the plant when above ground. In the latter case dustings of soot, by making the plants distasteful, often causes the beetles to move on.—E. H.

1921.—Keeping old Primulas.—Move to a well-ventilated cool frame on a coal ash bottom, cut away all old flower spikes and dead leaves, re-pot towards the end of the month, removing some of the old soil. The new soil should be rough and porous: about equal parts of turfy loam and peat or leaf-mould, with some sand and crushed charcoal. Shift into larger pots in July and grow them on in the frame till October; then move to greenhouse.—E. H.

1920.—Manure for Cucumbers.—Under certain circumstances nearly all kinds of manure may be used for mulching Cucumbers when they require support. For heavy retentive soils I should use horse-droppings that had been dried in a shed for two or three weeks; but for lighter, warmer soils, cow or pig manure is better. Mellow cow manure is an excellent top-dressing for Cucumbers when exhausted from long-bearing.—E. H.

1016.—India Rubber Plant.—India Rubber plants are large rooters and want ample pot space. A plant that sheds its lower leaves shows that it wants more pot room and that its roots are starved. The best course to pursue would be to take off the growing top and plant it as a cutting, which would soon root, and cut back hard the old plant and re-pot it to induce it to break again. —A.

1917.—Plants for Greenhouse.—In a greenhouse where such tenacious things as Geraniums die it is too obvious that the foul air emitted by the paraffin must be destructive to plant life. The arrangement is in fault, and some better heating apparatus should be obtained if tender plants are to be grown. A small gas stove heated from the outside, or a small hot-water boiler, would soon set matters right, and the plants would thrive.

1918.—Window Plants.—Gas need not materially injure plants in a window if air be given during the period combustion is going on, and any ordinary plants may do very well. Just now a window should be gay with Cinerarias, Deutzias, Dielytras, Genistas, Pelargoniums

and may be dressed with one or two hardy Ferns, and a Palm or two, such as Chamærops Fortunei, or Cocos Weddeliana and Draccenas.—A.

1919.—**Soil for the Royal Fern.**—In its native habitat the Royal Fern likes the side of a ditch or stream, where for many seasons leaves have fallen and decayed, thus forming a natural vegetable loam. Good turfy loam, and a large admixture of peat and leaf-soil, should suit the Osmunda well, giving shade and plenty of water in hot seasons.—D.

—— This may be grown in peat, its chief requirements being shade, perfect drainage, and plenty of water; indeed, if the drainage be good, it can hardly have too much water. The finest specimens are those grown upon banks of ponds, &c., where the roots touch the water.—W. S.

1900.—**Cats in Gardens.**—Some years ago I planted some Perilla nankinensis round a border in a garden much frequented by cats, in the centre of which were some choice flowers. In the course of the summer I was surprised to find that that border was carefully avoided by the cats, whilst the flowers in the other borders were almost destroyed by them.—E. B.

—— Respecting cats destroying the Nemophila, I find the very best remedy to be that of sprinkling the beds with Cayenne pepper. I have had cats pay a visit to the bed, and after having smelt it once never return.—R. R.

1934.—**Ferns for Damp Cave.**—I have seen Cystopteris fragilis and Cystopteris dentata growing most luxuriantly where there is a constant drip. I think the Oak Fern would also answer. The Maiden-hair likes such a situation, but I am afraid would be too delicate for the English climate.—A RECTOR'S WIFE.

1917.—**Plants for Greenhouse.**—If the paraffin stove is inside your house I should advise you to have it out at once, as the smell is very offensive to plants, especially those you have mentioned. I have had the same results you mention through having a paraffin stove inside my house. The Musk was a great failure; also some of those you have mentioned; but I was advised by a gardener to have the lamp outside, which I did, at once, and now all is flourishing.—IGNORANT.

1926.—**Green Carpeting Plants.**—Asperula odorata (Sweet Woodruff) will very quickly cover a bare space in any aspect. The foliage now is very compact and a lovely delicate green; next month there will be whorls of deliciously fragrant white waxy flowers; they are a charming mixture with the blue Forget-me-not; a dead white will not do with their blue. In September the plants look untidy, but are most easily pulled even with the ground. The plant runs rampant in sand.—MARK.

1811.—**Brussels Sprouts.**—The best way to obtain fine buttons is to sow in March and transplant first week in May. I intend to sow the seed in September on a warm border, and plant out as early as possible in the spring. If the winter proves tolerably mild they will grow during the next summer 4 ft. or 5 ft. high, if planted 3 ft. to 4 ft. apart and staked to keep them up; manure water benefits them immensely.—A. F. C.

1776.—**Hardy Coleus.**—The name of the Coleus referred to is probably refulgens, and it may be obtained at Messrs. Veitch's, of Chelsea. No Coleus, however, ought to be called hardy.—W. E. LEE.

1987.—**Crested Shield Fern** (Aspidium cristatum).—I have a root of this Fern, but its fronds, when expanded, droop and become flabby. It is in a flower-stand before a sunny-window, in a very warm room (where gas is never burnt); good drainage; soil, leaf-mould. It has been well watered. How can I prevent the fronds drooping, and restore it to its former healthy state?—AUREUS SCARABÆUS. [By giving it plenty of air and keeping it in a cooler place, rather shady than otherwise.]

1988.—**Soap-suds for the Garden.**—Are soap-suds of any use for the garden?—LAURA. [Yes; they may be applied to strong growing crops with advantage.]

1989.—**Guano for Crops.**—How should guano be used for flowers and vegetables?—LAURA. [In a liquid state. If the guano is good, a 3-in. flowerpotful to four gallons of water will be plenty strong enough. If applied frequently, half that strength would be better.]

1990.—**Heat for Cucumber Frame.**—I have a Cucumber frame, the heat of which is declining. Can I still keep the plants going by any heating apparatus other than by manure lining? and can I make the frame of use for anything else during the year? Is it necessary to have bottom heat for Cucumber growing?—A. EVERETT. [If you renew the linings you will get all the heat you require. Bottom heat is necessary for early crops, but not during summer. When the Cucumbers have done bearing you will find plenty of uses for the frame if you read GARDENING weekly.]

1991.—**Watercresses for Sale.**—Is there any work published concerning the growth of Watercresses for sale? If no such work, will some one inform me how I am to lay out beds on about 1½ acres of land, the size, &c., of the beds? I have a piece of land with a small stream running along the top of the land, and having a slope to a river at the bottom, which would take off the water, so that I could keep a constant stream passing over the beds.—C. T. [The system of growing Watercresses for the London markets is given in "Shaw's London Market Gardens," published at our office.]

1992.—**Applying Artificial Manure to Plants.**—How often should Clay's fertiliser be applied to pot plants, also plants in the open ground?—H. T. [A little should be mixed with the soil at potting time, and a little should be applied when the pots are getting full of roots and most want assistance. You must be careful how you use it, as it is very powerful. The best way to apply it is to mix a little with some fine soil, and remove the surface soil from the plants, replacing it with the mixture. Much, however, depends on the kind of plants to be operated on. Arum Lilies, Balsams, Fuchsias, and similar quick-growing plants will take more than plants of less rapid growth.]

1993.—**Heating Stove-house and Conservatory.**—What is the best and at same time the most economical boiler and pipes for the above? also size of pipes and boiler for from 60 ft. to 70 ft.? and what kind of joints to pipes are the best?—DEVONIENSIS. [A fair-sized saddle boiler would probably be the best. The pipes should be 3 in. or 4 in. in diameter. Apply to some respectable horticultural builder.]

1994.—**When to Sow Biennials.**—When should biennials such as Antirrhinums, Wallflowers, Canterbury Bells, Pentstemons, Heartseases, Sweet Williams, be sown, so as to grow sufficiently large to be planted out in the autumn where they are wished to bloom the following spring or summer?—A SUBSCRIBER. [Sow at once in well-drained pans or shallow boxes of sandy soil placed in a frame or in a window, with a sheet of glass over them. Prick out when large enough, and finally plant them where you want them to bloom.]

1995.—**Celeriac.**—Where can I procure the seed of Celeriac, or Turnip-rooted Celery?—A. F. C. [From any good seed house. See our advertising pages.]

1996.—**Treatment of Spiræas.**—Are Spiræas hardy, or do they require some protection? Should they be grown in pots or in the open ground? I believe they require an abundant supply of water; but should the pots stand in water, or be well drained?—F. HODGSON. [If you mean the Spiræa japonica, so much grown for market, which we presume you do, it is best grown in pots. It should have protection, and may by forcing be had in bloom from January onwards. It requires abundance of water, but it is not well to place the pots in water. It is really not a Spiræa; all the Spiræas proper are hardy.]

1997.—**Sowing Dahlias.**—Will Dahlia seed sown this spring produce plants to bear flower this year or next?—CHLOE. [Next year.]

1998.—**Taking up Crocuses, &c.**—I shall be compelled to take up my Crocuses, Tulips, Hyacinths, &c., to make room for bedders. What will be the best way of keeping them through the summer?—C. BAIRD. [Plant them elsewhere in good soil. When the tops have died down, store the bulbs in any dry place, and plant in October.]

1999.—**How to Earth up Crops.**—How can I do this neatly and well.—C. B. [First loosen the soil with a hoe or a fork between the rows; then, standing on one side of the row, draw the soil carefully up to the plants; then turn round and do the other side. When done rake between the rows. You can only learn to earth up neatly by observation and practice.]

2000.—**Greenhouse Plants after Flowering.**—What treatment do Camellias, Azaleas, Heaths, and Cyclamens require that have done blooming? They are in a greenhouse where heat by night is 45° to 50°.—INQUIRER. [You cannot do better than keep the Camellias and Azaleas where they are, picking off all the dead flowers and seed-vessels, and syringing them twice a day till they have made their growth. They may then be placed in a shady situation out-of-doors, or be kept in a shady, airy greenhouse or frame. The Cyclamen should be put into a cold frame, and kept just moist till the leaves have nearly died down, when they may be repotted, removing part of the old soil from the roots. The Heaths should be put in a cool frame or greenhouse where they can have abundance of air night and day. They need not be shaded; as if grown in a sunny, airy place, they will flower better than if shaded.

2001.—**Sowing Primulas.**—When should I sow Primula seeds so as to flower in a greenhouse about December or January?—C. C. [Sow at once.]

2002.—**Narcissi after Flowering.**—May these, after flowering, be kept in same pots for next year's flowering?—J. T. P. P. [If you must keep them in pots we should advise you to re-pot them in rich soil, and place them in a sunny situation, giving them plenty of water.]

2003.—**Climbers for Greenhouse.**—What would be the best climber to cover permanently the inside roof of a lean-to greenhouse, exposed to full sunshine nearly all day. Would a Clematis do, and, without requiring a shade for itself, act as a shade for the greenhouse?—J. T. P. P. [A Clematis would do; so would a Maréchal Niel Rose, some of the Passion flowers, and, in fact, any good greenhouse climber.]

2004.—**Manure-water for General Use.**—How can I make this?—C. B. [Place horse, cow, or sheep manure in a tub or tank, and fill it with water. Then dilute it as you use it, according to its strength.]

2005.—**Hydrangeas.**—I have some Hydrangeas in 5-in. pots; they are showing bloom on the leading shoot. Shall I take the side shoots off or not? and shall I re-pot them in larger pots?—C. J. P. [If the side shoots do not show bloom take them off and use them as cuttings. Give the plants coming into bloom some manure-water twice a week. Do not pot them.]

2006.—**Rhubarb Running to Seed.**—What can I do to prevent my Rhubarb running to seed? The plants were newly planted last year, with plenty of rotten manure under them.—J. G. H. [Your only plan is to pull out the seed-stalks as soon as they appear; they will not be so numerous next year.]

2007.—**Primula denticulata** is a hardy perennial plant. "E. E.'s" description of Veronica Blue Gem corresponds with a flower I have long wanted—an old-fashioned one which in early days, for want of the real name, we called Garden Forget-me-not.—V. F. [Primula denticulata is a hardy perennial, but is best protected during winter. The Veronica Blue Gem is very different from the plant you probably allude to.]

2008.—**Harrison's Musk.**—Is this as hardy as the common variety? and, if it is not, could I keep it through the winter in a cold frame by plunging the pots in coal ashes? The frame is tanked up with turf all round.—HAL. [This Musk is not quite so hardy as the common kind, but would be all right in the frame.]

2009.—**Flower bed.**—I have a little Box-edged flower bed in front of my house that I want to fill with Verbenas this summer. If I sowed some Verbena seeds at once, would they flower this summer? How close ought the Verbenas to be planted together? If I put a row of Portulaca about 6 in. from the Box, and then fill the middle up with Verbenas, will they do together, or will the Verbenas be too high for the Portulaca? The soil of the bed is rather dry and sandy, facing south-west.—HAL. [Verbena seed should have been sown in February; you might try it now. Place it in a warm frame, and plant out rather closely. Portulacas would do well for edgings.]

2010.—**Making a Hot-bed**—*C. B.*—Get a quantity of fresh stable manure with the straw in it, and mix with it a good portion of leaves, if you have them; or short Grass will do. Turn the heap over several times, and if dry, throw plenty of water on it. After a few days the rank steam will be out, when you may make the bed. Mark out a square 3 ft. wider all round than the frame you are going to put on the bed. Then commence to build the manure all round with a fork, always keeping the middle hollow, and treading the whole firmly as the work proceeds. When about 4 ft. high, put on your frame and build all round it till the manure is on a level with the top. Then put in your soil, and in a few days after the bed has settled down you may plant in it what you require.

2011.—**Cineraria Offshoots.**—My Cinerarias have thrown out several offshoots. Should they be taken off when the plants are in flower? or what is the proper time to remove them?—A. V. R. [Let the plants go out of flower; then the off-shoots will gain strength and may be removed.

2012.—**Scale on Apple Trees.**—The Apple trees in my orchard are infested with a blight which covers the entire trunk; it looks like small grey scales, and can only be removed by scraping. What is the name of the blight, and how can I get rid of it?—A LADY. [It is the mussel scale probably. The best cure is that of painting the trees with seal oil after the leaves fall in autumn. Whitewashing the trunks of the trees in winter would do good.]

2013.—**Dielytra spectabilis.**—I have had a magnificent show of Dielytra spectabilis that I bought with other things as a job lot, not knowing what they were (being only roots), and am now anxious to know how to preserve them.—E. C. L. [Divide them if you wish to increase your stock. In any case plant them out, after being duly hardened in rich soil in the open air. Mulch them with rotten manure and give them plenty of water. Pot up in autumn; or you may pot them now and plunge them out-of-doors in ashes.]

2014.—**Growing Chrysanthemums.**—In February I had sent me some small cuttings of Chrysanthemums. I have kept them in a warm window, and they are now growing nicely, some having made good progress, filling the pots with roots; others only now starting. I have but little garden ground; already there are some well-established Chrysanthemums in it which bloomed fairly well last year. I should like to turn the others out if there was a fair chance of their doing well in the open air.—A. M. S. [Put those that are full of roots into larger pots, and when again established you may put them out-of-doors. They would do fairly well in the open garden, but your better plan would be to grow them in pots plunged in the garden till they are coming into flower; then remove them indoors.]

2015.—**Liquid Manure.**—Will you give the proportions of fresh horse manure and water for liquid manure? and will that manure suit Clematis, Wistaria, Passion-flower, Virginian Creeper, Sweet Peas, and Convolvulus? How often should it be given, and in what quantity?—EALING. [Such liquid would suit the plants named; it is, however, difficult to give the proportions. Put a barrowful of horse-droppings into a tub and fill it with water; you can then dilute it as may be necessary. Weak and often will be better than strong and seldom.]

2016.—**Planting Anemones and Ranunculus.**—I have a few Persian Ranunculus and Anemone Hortensi. Should I plant them in the open ground so late as this, or keep them till next year?—L. A. [It would be better to plant them at once than keep them.]

2017.—**Leeks for Exhibition.**—How can I grow a few good Leeks fit for exhibition in July next? I have a box of Leeks which are 3 in. high in a cold frame; could I have them ready in time, and what treatment should they receive?—J. W. [Dig out a trench about 6 in. deep and 9 in. wide. Into the bottom spread 2 in. or 3 in. of rich rotten manure and fork it in. Then plant the Leeks out of the box, 9 in. to 12 in. apart. Apply abundance of water once or twice a week when the plants are growing freely. They should be gradually earthed up with fine soil, in the same way as Celery. You ought to get good Leeks by July next.]

2018.—**Fumigating Vines.**—Is it safe to fumigate a Vinery when the Vines are about to bloom, or are in bloom?—E. T. B. [It would be better to defer, if possible, fumigating till the berries have set, as the smoke will fetch off the bloom prematurely.]

2019—**Sowing Calceolarias and Cinerarias.**—When is the time to sow seeds of herbaceous Calceolarias, Cinerarias, and Primulas, to bloom after Christmas and how?—V. [Sow now in pans of fine sandy soil, placed in a shady frame or greenhouse. Put a sheet of glass over the pans till the seeds are up.]

2020.—**Sweet Peas.**—I have a quantity of Sweet Peas in boxes 3 in. and 4 in. high; I am afraid they are getting spindly. Can I put them out yet with safety, covering them, of course, at night. I keep them out all day, only putting them back in a warm house in the evening. I have so little room with the seeds and plants coming on, that I am afraid I cannot afford space to pinch them out.—G. HARCOURT. [Put them out-of-doors, and protect them slightly at night.]

2021.—**Cyclamens after Flowering.**—How should these be treated?—V. [Place them in a cold frame, giving enough water to keep the soil just moist. When the old leaves have nearly died down and young ones are pushing, re-pot them, in doing which remove about half of the soil from the roots, and pot in the same sized pots, afterwards giving them larger pots if necessary.]

2022.—**Abutilons.**—What heat and treatment do these require?—V. [An ordinary greenhouse or frame; or they will grow out-of-doors in summer. Any good soil will suit them, and in winter a rather dry atmosphere.]

2023.—**Lime Water for Ferns.**—Will lime water to kill worms injure Ferns?—W. S. [No; unless applied very strong.]

2024.—**Raising Seeds.**—Can Cinerarias, Celosias, and Carnations be raised in a cold greenhouse without bottom-heat?—W. S. [Celosias are best raised in heat; the others would grow well in a greenhouse.]

2025.—**Sowing Seed in Pans.**—In sowing seeds ought the soil to be moistened? Ought it to be pressed down or merely levelled previous to sowing the seeds? Should the covering layer of soil be pressed or left loose on the top? Is it well to water at all before the seedlings appear.—Hepatica. [The soil should be pressed moderately firm and be well watered with warm water previous to sowing. The top covering should be slightly pressed to make it level. The less water it is necessary to give before the seeds come up the better, but the soil must be kept moist.]

2026.—**Soap-suds for Pot Plants.**—*F. G. C. P.*—Although soap-suds might in some cases be beneficial to plants in pots, we should certainly not advise you to use them. Pure soft water is much better, and if you want a little liquid manure it is easily made, or there are plenty of artificial manures now sold, excellent for the purpose.

Tulips and Snowdrops not Flowering.—*Learner.*—Bulbs in pots of all kinds have flowered very unsatisfactorily everywhere this year, and probably you had your bulbs potted too late in the season.

Taking up Dahlias and Hollyhocks.—*C. B.*—Dahlias should be taken up when the tops are cut by frost and stored in soil in a box in any dry cellar or loft. Place them in a warm frame or house in spring, and when they have made sufficient growth, take off cuttings if you wish to increase your stock; or part the old tubers and pot them singly, planting them out at the end of May. Hollyhocks can be divided in autumn, and potted and planted out in spring; or they may be left in the ground all the winter, covering their roots with ashes.

Asparagus Kale.—*W. H.*—The true Asparagus Kale is that known as the Milan Kale. Several different kinds are supplied by seedsmen as Asparagus Kale, but the one named is the correct one.]

Hot water.—*J. C. H. P.*—A boiler holding only three quarts of water can not be expected to heat 20 ft. or 30 ft. of piping satisfactorily.

Smilax in Windows.—*Window Box.*—In addition to the article in Gardening, April 3, you will find its culture fully explained in the numbers for July 19th and December 13th of last year.

Labels.—*L. M. S.*—See Gardening, February 7th of this year. If you had sent your address, we could have told you where to get what you want.

H. L.—Your question is one which can only be answered from time to time in Gardening. There has been much information already given on the subject of window gardening.

What is the difference between Scilla præcox and S. siberica? Does the latter succeed the former as to time of blooming?—V. F. [We never could discern any difference either in the appearance of the plants mentioned or their time of blooming.]

Index to Vol 1.—*J. M.*—This may be had of all booksellers, with coloured plate, price 3d.

Title Page for Vol. I.—*E. C. L.*—There is not the least difficulty in obtaining this from our office. We supply title page, complete index, and coloured plate, price 3d.

QUERIES.

Readers are requested to note that every number of Gardening Illustrated *is in print, and may be obtained. Before sending queries it is well to consult the first volume, which contains an immense number of practical articles and questions answered by men well acquainted with the subject.*

2027.—**Acacia in Window.**—Will any readers kindly instruct me as to the management of a small Acacia about 2 ft. high, kept in a 7-in. pot in a south-west window? The leaves are constantly turning yellow, and falling off. I water it two or three times a week according to season; it is planted in a mixture of loam and leaf-mould.—C. J. Bream.

2028.—**Celery for Rheumatism.**—Will the seed of Celery answer this purpose as well as the plant?—T. H.

2029.—**Snails and Slugs.**—I have read with interest the result of "G. W. O.'s" experiments with Little's soluble Phenyle (see p. 65, April 10) as an insecticide or slug-preventive for flowering plants. Will "G. W. O." or any correspondent give their opinion of the use of this liquid as applicable to vegetables, viz., Celery, Cucumbers, Kidney Beans, &c.? My crops are annually half destroyed by the depredations of these troublesome visitors, which defy lime, soot, &c. Also whether this liquid may be safely applied to vegetables without detriment to the consumer, and from whom can the Phenyle be obtained?—G. B., *New Cross.*

2030.—**How to Arrange a Garden with Flowers.**—I shall be going into a house on May 1, and as the garden is 20 ft. by 18 ft., I shall be grateful for information as to arranging it for flowers to look pretty this summer. The mould put into the garden looks good, but rather stony. What flowers or seeds shall I put in? what edging? What designs for beds would be prettiest? Can I get any book to thoroughly instruct me, as I am quite a novice at gardening? I get plenty of sun.—G. J. G.

2031.—**Show and Fancy Dahlias.**—Would some one be so kind as to give the names of the best eighteen varieties of the above for exhibition?—W. H.

2032.—**Carnations, Picotees, and Pinks.**—When is the correct time to sow the above in a cold frame with a little bottom-heat? Any hints regarding sowing of the seeds and after treatment would be esteemed.—W. H.

2033.—**Large Wellingtonia gigantea.**—Can any reader give me the dimensions of the Wellingtonia gigantea that was exhibited at the Crystal Palace some ten or eleven years ago? It was destroyed with the fire that happened there about that time. It came, I believe, from Australia.—Tasmanian.

2034.—**Graveyard Gardens.**—What would be best for a somewhat shady situation, partly under a Yew tree, in a graveyard?—Woodchurch.

2035.—**Ants in Gardens.**—Can any one inform me the best method to get rid of ants in a garden, as my garden is infested with them?—Alpha.

2036.—**Bottom-heat for Frames.**—Will "Petros" kindly explain the undermentioned queries in reference to his article on "Bottom-heat in Frames" in No. 55? 1st. He says "place a (mineral oil) lamp about 2 in. from bottom of boiler." I presume 2 in. from top of chimney is meant? 2nd. He adds "a sun burner 7-8 in. thick is best to use, and large enough." What description of lamp is this? whether for crystal oil or benzoline? what is its capacity, and does he mean that the wick should be 7-8 in. wide instead of thick? 3rd. Is the conical chimney he speaks of glass (as I suppose)? what is its height? and would not the metal one mentioned be sufficient without it? I should be glad of a reply at his earliest opportunity.—F. H. W.

2037.—**Window Boxes.**—Will some one favour me with instructions for making window boxes for plants and seed? And please state if Cocoa-nut fibre mixed with light soil would be suitable for filling same. Can creepers be grown in boxes to avoid a border against the wall of the house which is already damp? and would boxes as for windows be suitable?—Window Gardening.

2038.—**Glazing Without Putty.**—"H. S. H." says he has constructed a greenhouse on the no-putty principle. I should be glad if he would kindly give a few details, as I wish to build one, and should like to adopt the best plan possible. Are such houses suitable for forcing, or only as cool greenhouses?—J. T.

2039.—**Dracæna Leaves Withering.**—Will some one tell me the best method of preventing the leaves of Dracænas turning brown and withering at the ends?—T. W.

2040.—**Gladioli for Succession.**—Will some reader kindly give a list of named Gladioli for early flowering? also a list of late flowering kinds, with their respective colours, &c?—A Learner.

2041.—**Culture of Double Primroses in Pots.**—Will some one tell me how to grow double Primroses in pots in London? I can never get them to live. There is no garden here; the aspect is nearly south. I could put them in a window conservatory among Ferns, but I think it would be too close for them.—Cryptogam.

2042.—**Pansies for Exhibition.**—Being desirous of growing Pansies for exhibition, I should be very glad if any one will give me information how to proceed.—Heartsease.

2043.—**Large Flowering Cactus.**—What treatment should be given to a large scarlet blooming Cactus? It is alive and showing signs of bloom, but some of the leaves appear faded.—J. C. W.

2044.—**Shrubs Under Trees.**—Which are the most suitable shrubs for planting or making a fence under trees? They will be subject to smoke, &c., of passing railway engines; exposed east aspect. I have tried Thorn hedge and evergreens, but without success. What would be the cause?—Zig-zag.

2045.—**Rusty Geranium Leaves.**—Can any one inform me what is the cause and means of prevention of Geranium leaves becoming rusty or spotted?—Fifeshire.

2046.—**Stocks Losing their Leaves.**—I have some stocks in pots which seem healthy and make steady growth, but the lower leaves turn yellow and fall off. What is the cause?—A Learner. [An insufficiency of water or poor soil, probably.]

2047.—**Specimen Blooming Plants.**—Can any one give me the names of one or two plants of easy culture in a town greenhouse to exhibit in a class of specimen plants in bloom in a show about the middle of August?—Exhibitor.

2048.—**Woodlice in Frames.**—Will any reader inform me how to destroy these insects, which infest my frames, and eat off directly they are out of the ground such things as Phloxes, Stocks, &c.? For several seasons I have had entire crops destroyed by them.—C. J. B.

2049.—**Temperature for Ferns and Anthuriums.**—Will some one tell me the lowest temperature (summer and winter) in which I could grow Anthurium Scherzerianum and Adiantum Farleyense?—Arthur.

2050.—**Making a Fern Case.**—Will any reader favour me with hints for the proper construction of an oblong Fern case? It is the bottom of the case that I am in doubt about. I cannot tell how to construct it to get the proper drainage required. Any other information will greatly oblige.—Subscriber.

2051.—**Flowering Shrubs for Front of House.**—I am in want of two flowering shrubs for the front of my house—north-east aspect. Which are the most suitable?—T. M.

2052.—**Rhododendrons.**—I have a bed of good and deep alluvial soil in which I want to grow Rhododendrons. Will some one name me about six good hardy sorts, and the best time to plant?—A. B. G.

2053.—**Climbers for Planting out in Cool Conservatory.**—Which of the following climbers are evergreen, what are their respective colours, to what height will they grow, which ones will do best on the shady side? Also, will any of them do if the roots are planted outside conservatory and protected in winter?—viz.—Passiflora Newmani, Tecoma jasminoides floribunda, Berberidopsis corallina, Stauntonia latifolia, Jasminum gracile variegata, Physianthus albidus, Celastrus scandens.—Hamilton.

2054.—**Hints for Amateurs.**—How truly delicious a garden would be with Mignonette sown broadcast! and I much wish I could succeed in getting it in such profusion into mine. I have the greatest difficulty in getting a few plants to thrive; every year I sow from 6d. to 1s. worth of seed; have tried April, May, and June, and even March. In other plants I am very successful. The seed comes up fairly, and when there are four or six leaves they invariably turn yellow, and finally disappear. My soil is sandy. I should much like to know if any of your other correspondents are equally unlucky with Little Darling.—Mark.

2055.—**Plants for Bleak Exposure.**—My house faces the east, and I have a rockery at the front. Can any one say what will grow in it, as the winds kill everything I put in on the north and east sides, with the exception of King Feather (or London Pride)? Also will some one say if any annuals will flower in my north-east borders?—W. D., *Lancashire.*

2056.—**New Zealand Flax.**—Will some reader kindly give me full details for outdoor culture of the above, whether it is best planted in clumps or otherwise, and what treatment for the winter?—G. Y., *London.*

2057.—**Orange Tree not Flowering.**—Can any one who has had experience tell me if an Orange tree grown from a pippin will ever bear flowers? The tree is seven years old, has good foliage, and is about 3 ft. high. How should it be treated?—Laura.

2058.—**Making Screens.**—I am making a folded screen, covering the framework with black leather, but I cannot make the scraps adhere firmly to the leather with gum; when dry, they are easily removed with the aid of a pen-knife, the whole scrap coming away intact. Can any one tell me what will ensure success in this respect, and whether the screen when complete will be best varnished? if so, with what kind?—A. Everett.

2059.—**Outdoor Winter-blooming Plants.**—Will some reader give the names of a few perfectly hardy plants suitable for a London garden, to bloom in winter or very early in spring; and supply also some information respecting the time that the seeds for such should be sown, together with a few hints relative to their after culture?—J. G. S.

2060.—**Cimicifuga racemosa.**—My plant is alive after the severe winter, and making a weak shoot. Can any one who has grown it successfully tell me the soil and situation it prefers, and whether it requires plenty of moisture?—H. C.

2061.—**Spigelia marylandica.**—My plant, which flowered well last season and seemed healthy, has died during the winter. Does the plant require protection? Does it dislike a calcareous soil mixed with peat? Information from any one who cultivates it successfully will oblige?—H. C.

2062.—**Cottager's Flower Shows.**—A cottager's flower show is to be held in our parish the last week in August. Would any reader who may have had some experience in such things tell me what hardy annuals or other flowers would be suitable to advise the cottagers to grow, either in window-boxes or pots or in very small gardens, and when they should be sown so as to be in bloom at the time named? Also is it advisable to combine a children's flower show with the other, and what would be the probable outlay in a country place, where tents, &c., would have to be hired?—A Yorkshire Curate.

2063.—**Humea elegans Dying.**—Can any one suggest what is the matter with my Humea elegans? I bought six plants from a good nurseryman; they were in 3-in. pots, and I potted them into 6-in. ones. They grew well till last week, when three of them went off all at once. The roots had got to the bottom of the pots. They where potted in leaf-mould, sandy and yellow loam.—An Inquirer.

POULTRY.

Experience in Poultry Keeping.—"A Working Man" on this subject recommends a cross between the Spanish and Dorking fowls as the best sort to keep. Perhaps for laying purposes only they may be; but my experience is that the best fowls are obtained by crossing Brahma hens with Dorkings, and to kill the cockerels and cross the pullets again with Dorkings. By this means a large-bodied and very hardy bird is obtained, with little or no feathers on the leg, which are always an eyesore to the poulterer. The birds, moreover, are excellent layers and good mothers; the eggs, too, ar much richer than the eggs of the Spanish fowle but perhaps not quite so large; and, from having, shorter legs and plumper bodies, the fowls are much better for the table than a bird with Spanish blood in it, whose long dark-coloured legs always look unsightly.—W. T. D.

Gapes in Chickens.—I believe the only safe method of curing this disease is to let the chick inhale the fumes of hot carbolic acid (Calvert's). The best way where only a few chickens have to be operated upon is to put about a tablespoonful of the acid in an empty salad-oil flask (the straw covering being removed); place the flask on its side in a saucer of sand, and apply a spirit lamp under the

saucer, which can be fitted on a wire stand easily made for the purpose. As soon as steam is emitted from the flask, place the chick's head close to the opening, so that it must inhale the fumes; but care should be taken that the operation is not continued too long at one time, as it may otherwise be injurious. In ordinary cases one application is sufficient.—SABINE.

Non-laying Brahmas.—No fowls will lay if fed only on maize. Give them one meal of oatmeal and house scraps, and all the refuse vegetables, and they will soon do their duty. I have for years kept about eight Brahmas in a small enclosure; they only get an occasional run in winter for an hour or two, but I get plenty of eggs (about forty a week now), and from four to six couple for the table during the year, and have never had a sick fowl; but I am most careful about giving variety of food. Every scrap is saved for them in the kitchen, and they are kept most scrupulously clean. I never feed on maize only, but give a mixture of maize, barley, tail-wheat, and buck-wheat.—C. H.

Duck Eggs Failing to Hatch.—I keep seven ducks and two drakes, from which I sat sixty eggs, and every one was rotten; they were kept about a fortnight in an egg closet. What is the reason for this? and is there any means of testing the eggs before sitting?—PINK MAY.

Eggs for Sitting.—Will "Andalusian" say why eggs should be placed with the small end upwards for keeping? I have always understood that to keep them well the large end should be uppermost. The yolk is always nearer to the large than to the small end, and consequently would be likely (I should think) to adhere to the shell and spoil sooner if the small end were placed upwards.—A RECTOR'S WIFE.

Keeping Fowls.—I want to keep, say, half-a-dozen pullets, and a cock bird for eggs (not chickens). I have no yard, and but a small garden, which they would spoil, so must confine them to a run covered in with wire. We have an adjoining place where they could roost. About what size should their run be—length, width, and height, and what for the floor? Are some of the Hamburgh kinds suitable? or are Houdan or any other sorts better? Are the upright sides of the run best of brick, wood, or wire?—HENRY CAMPS.

Fowls Eating Eggs.—I noticed one morning lately a pullet coming away from the poultry house with a considerable portion of an egg, which led me to think all was not right. I found she was eating eggs, a thing which has been taught her ignorantly by giving her the egg-shells to eat.—J. H. A.

Caponizing Fowls.—Can any one inform me where I can get instructions on caponizing fowls?—A CONSTANT READER.

Poultry Breeding.—Can any reader tell me whether chickens hatched from true-bred Dorking eggs by a barn-door fowl, and brought up by the same, away from all other poultry, are in any way injured in their breed, or would injure others hatched by true-bred fowls?—COCK-A-DOODLE-DOO.

Egg Testers.—In last week's issue of GARDENING "Andalusian" informs the readers that eggs may be tested by an egg tester about the eighth day to see whether they are fertile. I think it would have been a benefit to most readers to know what this egg tester is, and should therfore like him to explain; also, whether it would be of any use for eggs which have been set nearly the full time.—A. H. W.

HOME PETS.

Sitting Doves.—I should think "Angie's" sitting doves must be two hens. I never heard of doves laying more than two eggs at a time. They sit for a fortnight. I know of no other way of distinguishing the male dove from the hen except that it is generally larger and coos much louder and more than the hen, which makes a more harsh sound. I shall be very glad to exchange one of my male birds for one of your hens if you are willing.—Mrs. HENRY HENLY, *Calne, Wilts.*

Canary with Rough Plumage.—*Tilly Slowboy.*—A bird out of health will always have rough plumage, no matter what it is suffering from. It is most likely suffering from a cold. Give the hemp a little more frequently, and an occasional sprig of Watercress or other green food.—A. D'A.

Feathers coming off Canaries.—This arises from various causes. Weakness will cause it, or it may be a sort of skin complaint that canaries sometimes suffer from. All you can do is to give it a nourishing diet—not rich, but strengthening; also let it have as much fresh air and sunshine as possible, and an occasional dose of finchine.—A. D'A.

Canary not Singing.—I have a German cock canary which sang beautifully all last year, but will not sing at all now, and has not done so for four or five months; he is not moulting, but looks depressed, and is ill-tempered; eats well; what will make him sing again? I vary his food, and give him green stuff, and put him in a sun-lighted window; what else must I do?—PUSS.

Rearing Hares.—Can any one tell me how to bring up a young hare?—F. M.

Budgerigars.—I have two of these; their noses are blue. Are they males or females? At what time of year do these birds pair?—M. F.

THE HOUSEHOLD.

"THE HYGEIAN COOK-BOOK."*

THIS is a useful little book, based on the principal of cooking all food without salt, pepper, or other condiments. In the preface, Dr. Trall remarks: "For a dozen years past our table for invalids has been prepared without the employment of milk, sugar, salt, yeast, acids, alkalies, grease, or condiments of any kind. Our only seasonings have been fruits and other foods in a normal state, so prepared and combined as to produce the requisite flavour to please without perverting the taste. As our institution stands alone among all the real or pretended health institutions in the world in this respect, we have taken much pains and made many experiments to improve every article and perfect every dish; and we have reason to believe that all persons who desire pure and palatable food, and who wish to 'eat to live,' will find ample directions in this little volume. Among the special advantages of the plan we have adopted, so far as invalids are concerned, is the absence of sour stomach, biliousness, and constipation, so troublesome to all dyspeptics who use milk and sugar. Nor do our patients have any desire to drink at meals. Pure food never occasions thirst; and all physiologists know that taking water with food renders digestion and assimilation imperfect in all persons, and seriously interferes with the recovery of health by invalids." Referring to making sauces, for which there are many recipes given in the book, Dr. Trall remarks: "Persons whose ideas of sauces as dressings or relishes for food are limited to combinations of butter, sugar, salt, vinegar, and spices, may be astonished to learn what varieties of wholesome as well as palatable articles can be made by combinations of fruit and their juices. The number is practically unlimited; but hygienists usually have, or soon acquire, appetites so nearly normal, that they are satisfied with few. All that is required to make wholesome and palatable sauce or dressing is a selection of fruits that are themselves wholesome, and such mixtures and preparations of these as will suit the taste."

Leaf Impressions.—We have received from Mr. Hodson, of Liverpool, a book of leaf impressions, which are so good that we have been induced to obtain from him his *modus operandi*, in the hope that it may be useful to some of our readers. Mr. Hodson says: "After many and careful trials, I found the following to be the best way to success:—On gathering your leaf, mind and not crumple or crack it, and whilst it is fresh place it between two oiled sheets; then place them between any old book-back or pad, and put them under the press; give them a good squeezing, so as to flatten the leaf, and also to take out any extra sap there might be in the veins, because if this is not done the sap might smear your impression. Then take your leaf out and place it between your carbonic paper, which then put between the oiled sheets. (I may add here—let your carbonic sheet be doubled, so that you then get the back and front of the leaf, as I show.) Again place the whole arrangement in your old book or pad and give them a good squeeze. You must then allow a few seconds for the leaf to impregnate itself with the colour from the carbonic paper. After this, take from under the press and lift your leaf from off the carbonic paper very carefully and place it flat in your impression book. Close your book without disturbing the leaf (which will now appear quite black and useless) and give a good squeezing. Take out after about a minute and your impression is complete. Mind and leave your book open for a while, so as to allow the impression to dry; or you may place a clean oiled sheet between the impressions and go on with more without any danger. If you have good-sized carbonic paper and oiled sheets, about that of my book, you will be able to copy five or six ordinary leaves at one time. You must excuse the prolixity of my explanation; however, the *modus operandi* is not so when once you have got in the way; indeed, some of our fellow-readers of GARDENING who can get at an office copying press can do the thing to perfection."

* "The Hygeian Cook-Book; or healthful and palatable food without condiments." By R. J. Trall, M.D. New York: S. R. Wells & Co., 737, Broadway.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 4s to 6s; Azalea, 6s to 12s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 6s to 9s; Lily of the Valley (forced), 6s to 18s; Lilac (forced), 4s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus (paper-white), 6s to 9s; Narcissus (Pheasant's-eye), 6s to 9s; Pelargoniums (zonal), 4s to 9s.; Pelargoniums (large flower), 6s to 12s; Pelargoniums (double), 6s to 12s; Pelargoniums (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 6s to 9s: Violets (blue), 1s to 2s; Violets (Neapolitan), 2s to 4s; Violets (French), 4s to 0s 0d.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s to 6s; Camellias, 1s to 4s; Tra, Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias 4s to 8s; Roses (forced), 1s 6d to 6s.—*Per dozen spray or trusses.*—Bouvardias, 1s 6d to 3s; Euphorbia, 2s to 4s Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 4s to 9s.

Plants in Pots.—*Per doz.*—Arbor-vitæ (golden), 9s to 18s; Arbor-vitæ (common), 6s to 12s; Arum Lilies, 6s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Aralia Sieboldi, 12s to 30s; Ardisia crenulata, 18s to 30s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Berberis, 4s to 9s; Bouvardias, 12s to 18s; Box, 4s to 9s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Clematis, 9s to 18s; Cyclamen, 6s to 18s; Daphne indica, 4s to 9s; Deutzia gracilis, 9s to 18s; Dielytra, 12s to 18s; Dracæna (green-leaved kinds), 12s to 30s; Dracæna 18s to 60s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Hyacinths, 4s to 9s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Narcissus, 9s to 12s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 12s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Scilla sibirica, 9s to 12s; Selaginellas, 3s to 4s; Virginian Creepers, 6s *Per pair.*—Azaleas (large), 20s; Maiden-hair Ferns (large). 5s to 7s; Aucubas (berried), 4s to 6s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 10s to 15s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 20s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pears (fine dessert kinds), per dozen, 9s to 12s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 9d.

Vegetables.—*Per 100.*—Asparagus, 3s to 6s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 9s to 12s; Parsley, 6s; Turnips (outdoor), 3s to 4s; Radishes, 1s 6d to 3s; Herbs, 2d to 6d. *Per dozpunnets.*—Cress, Mustard, or small salad, 2s; Seakale, 36s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s.—*Per bundle.*—Celery, 1s to 4s; Horseradish, 3s to 6s; Salsafy, 6d to 9d.—*Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 9d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel. 2s 6d; Saveys, per score, 8s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 4s to 8s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

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GARDENING
ILLUSTRATED.

VOL. II.—No. 60. *SATURDAY, MAY* 1, 1880. PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

THE AMARYLLIS.

THOSE who knew the varieties of Amaryllis in cultivation fifteen years ago, and have seen the magnificent groups exhibited at the Royal Horticultural and Botanic Societies during the past three or four years, cannot have failed to have noticed the striking improvement that has been effected in form, size, and colour. Instead of the small or medium bell-like flowers produced in pairs, with narrow-pointed perianth segments, and varying in colour but little beyond a few not very easily defined shades of scarlet and crimson, we have now robust scapes producing four, six, and even more, grand flowers with broad well-rounded petals, often fully 3 in. wide, forming finely expanded flowers measuring from 7 in. to 9 in. across, with colours varying from rich scarlet and deep crimson to a delicate light rose, and even occasionally to almost white. This great improvement has been brought about by

VEITCH'S NEW RACE OF AMARYLLIS (one-third natural size). 1, Emilia; 2, Ophelia; 3, Malvolio.

several distinct and separate agencies, among the most potent of which may be mentioned the introduction of new species, the hybridisation and inter-crossing of these with the best older varieties, and by assiduous cultivation. It is now some years since the Messrs. Veitch received two remarkable natural species from South America, through their collector, the late Richard Pearce, which have been named respectively Leopoldi and Pardina. By crossing these with the older kinds a progeny was raised showing a remarkable advance over those then in cultivation. The further inter-crossing of this progeny with the species themselves, and with other kinds—such as Ackermanni pulcherrima, and including even the robust Aulica—has resulted in the production of the magnificent race of which our illustration represents three kinds. The Amaryllis must henceforth take a far more prominent place in amateurs' gardens than it has hitherto done; and there is no reason why this should not be so, for the culture is of the easiest kind where a warm greenhouse is available.

The bulbs should be potted early in spring, in a mixture of equal parts of loam and leaf-mould, with the addition of a little animal manure, the ingredients of the compost being thoroughly mixed together. During the growing season water must be freely supplied, and until the flowering is over, and then gradually diminished in quantity till the leaves have died off and the bulbs are at rest. When they have become dormant, stow them away in a dry warm place to rest. After about a three-months' rest, introduce the earlier-ripened ones again to a moist heat, and if they be slightly sprinkled with water now and then all the better; some of them will soon push up flower stems, and when such are distinctly visible let the plants receive a good watering. It is important that the flower-stems clearly show themselves before the plants receive much water, or leaves will be produced at the expense of flowers; in weak plants, if the leaves get the start, the tips of the flower-sheaths just show themselves above the necks of the bulbs, and there remain. Those which flower should have their roots examined as soon as the flowers are off, and if sound and healthy should have a shift into larger pots, using soil as before. It is not well to be in a hurry to separate the offsets which push from the parent bulbs. They make blooming bulbs quite as soon if left undisturbed as if taken off, and a potful of strong bulbs grown together, when in bloom, has a good effect. In examining the clumps of bulbs at the time of re-potting, should any feel loose to the touch divide them and start each bulb separately as at the beginning, using small pots as before, until they have become again established Pots 8 in. or 9 in. in diameter are plenty large enough for Amaryllises intended for ordinary use. As to the time of flowering, Amaryllises may be had nine months out of the twelve by gradually pushing on those that show bloom the earliest and leaving the later-blooming kinds to start without encouragement of any sort.

The following kinds, raised by Messrs. Veitch, are now among the best in commerce, most of them having been awarded certificates by the Floral Committee of the Royal Horticultural Society, and by the Royal Botanic Society:—

Brilliant, a really rich crimson, and beautifully spotted.

Cassandra, bright scarlet, with a rich velvety lustre.

Chelsoni, brilliant fiery crimson.

Crown Prince, broad petals, striped with reddish-crimson on a creamy white ground.

Duke of Connaught, a variety of extra fine form; the most brilliant and deep scarlet yet obtained, which is relieved by a beautiful clear white eye.

Empress of India, a vivid light scarlet, suffused with orange-yellow, relieved by a whitish central stripe.

Junius, deep crimson scarlet. In this variety the white filaments contrast very effectively with the rich colouring of the perianth segments.

Macaulay, rosy red, with white-tipped petals, very distinct.

Maid, a beautiful light variety, dashed with crimson upon a creamy-white ground.

Sultan, deep maroon crimson.

The Baron, deep lake-red, tipped with straw yellow.

Virgil, ground colour delicate French white, the inner portions of the petals spotted and barred with bright scarlet-crimson

To these fine kinds may be added the three shown in our illustration, which are among the most recent novelties.

Double-flowered Ivy-leaved Geranium.—The flowers of this Geranium are perfectly double, and pink in colour, with deep

Double-flowered Ivy-leaved Pelargonium (König Albert).

carmine streaks or veins down the centre of the upper petals. It is named König Albert, and was, we believe, the first double-flowered form obtained in the section to which it belongs. As a decorative plant it is extremely useful, owing to its elegant habit of growth and the profusion with which its flowers are produced by established plants. The Ivy-leaved section of the Geranium family, we need scarcely say, make excellent window plants. For this purpose they are unrivalled, and should always be grown for such purposes, as well as for hanging baskets, for vases, and for the decoration of hollow tree stumps, and for forming beds in the flower garden. All Ivy-leaved kinds are easily propagated by inserting cuttings in a balcony or window-box during the summer months. In the spring they may be struck easily, and cuttings taken off so late as August may be well rooted in the open border before frost sets in, and make pretty little plants for next year's decorations.

Yellow Day Lily (Hemerocallis flava).—For the last three years I have grown this Lily in pots for early forcing, and I must say with very good success. I would, therefore, strongly recommend it for that purpose, its colour being an acquisition and its perfume very sweet. It is, moreover, easily grown, a circumstance which makes it doubly valuable. I had plants of it in bloom all through the spring, and have yet more to flower. They have produced from nine to eleven flower-spikes, and have six and seven blossoms on a spike, forming attractive objects in a conservatory.—J. C.

Potting and Treatment of Camellias.—It is sad to see Camellias in a sickly state. I do not know whether it is owing to the way in which the plants are propagated or to early mismanagement, but it is a fact that vast numbers of plants, especially imported ones, die after they are sent out of the nursery, in spite of all that skill and good management can do for them. There are two periods at which the Camellia may be shifted or repotted. One is to pot the plants as soon as they have made their growth, and before they have matured their flower-buds; and the other is to pot before they have begun to grow, and not when the plants have done flowering. I prefer the first plan, because growth buds are ensured before the plants are meddled with; while, by the second plan, unless the plants are very vigorous, there is a chance of their making feeble growth, not to speak of possible accidents. However, both plans succeed well enough in good hands, or when the shifting of the plants is intelligently performed.

There are fine examples of Camellias to be found growing in pure, or almost pure, loam, which should in all cases form at least the staple of the compost; and perhaps equally good specimens are to be seen in a compost consisting of loam and peat, or loam and leaf-mould, or all three together. As regards the operation of potting or transplanting, it should be performed with great care. It should first be ascertained whether the roots are dry in the centre of the ball—a thing exceedingly likely to occur in the case of old pot-bound Camellias; and, if they are, the whole ball of roots should be immersed in a tub of water, and left to soak for four-and-twenty hours, or longer if necessary. Afterwards the plant should be lifted out, and the ball allowed to drip in some shady corner till it is in a fit condition to operate upon and pot. If the roots are found to be abundant and active at the outside of the ball, they must not be molested much, but the soil may be loosened all over with a blunt peg, just to disentangle the rootlets and induce them to push into the fresh soil. Should, however, the roots be poor and decayed, the soil should be carefully removed until active roots are found in considerable quantity. The plant should then be potted in a smaller pot than before; but I do not consider it advisable to reduce Camellia roots in this way under ordinary circumstances. In potting, the soil should be made tolerably firm under the roots and rammed, not hard, but with moderate firmness, round the sides, taking care to leave plenty of room for watering. In tubs and large pots we leave from 2 in. to 3 in., and in smaller pots seldom less than 1 in. Much depends on this, as we have invariably noticed that the work of watering is much facilitated by providing as much space for water as will soak the roots thoroughly at one watering, instead of at twice or three times. If possible, rain-water should be given to Camellias, and it should at all events be free from lime. Liquid manure may be given, weak and often, to healthy-growing plants that are known to have plenty of healthy roots; but weakly or newly-potted ones are better without it for a time. Under ordinary circumstances the Camellia needs no special treatment, but will grow and thrive well in an ordinary conservatory or greenhouse, or even a window, where the temperature does not often fall below 40° or 46° in winter, nor rise above 80° in summer. The sun's rays should never directly reach the leaves of the plants at any time, but should always be broken by a thin shading of some kind.—W.

Ferns for Covering Walls of Greenhouses.—One of the most easily established plants either on the back walls of greenhouses or on inside rockwork is Asplenium bulbiferum, The young plants form and commence to grow on the mother plant, and if taken off with the portion of the old frond attached to them, and just pegged on to the surface of rockwork, or into the interstices of the brickwork itself, they will soon take root and establish themselves without further care. A. bulbiferum is almost hardy; the individual fronds, too, being of good substance, last a long time in perfection.—J. C. B.

A Blue Primula.—I saw the nearest approach to a blue Chinese Primula I have yet seen the other day in Messrs. Carters' nursery, at Perry Hill, The flowers are really of a bluish lavender colour. The plant is a vigorous grower, and very productive of blossom. A quantity of plants of it in a group were very effective.—S.

Cannas for Indoor Decoration.—I would strongly recommend any person who has not yet done so to procure a packet of Canna seeds and sow at once in pots, in a slight hotbed,

having previously soaked the seeds in hot water for twelve hours, as this hastens the germination. They soon form fine plants for summer and autumn decoration, and their drooping Dracæna-like leaves have a beautiful effect amongst other plants in a greenhouse or in rooms, and will be found very useful and ornamental for halls and staircases.—W. A. G.

Raising Plants from Seed.—For the benefit of those who are desirous of raising plants from seed, but have neither greenhouse nor hotbed, I wish to explain the very simple and successful method I have adopted:—Take a large flower-pot and put Cocoa-nut fibre in it to the depth of 2 in. or 3 in.; then place in it a pot 2 in. smaller in diameter; fill up the space between the two pots with fibre, and soak it with boiling water. Stand the large pot in a saucer; sow the seed in the smaller pot, and cover with a piece of glass. Stand the pots and saucer upon the kitchen range, away from the fire, and the seeds will quickly germinate. When the heat is excessive, as at cooking time, move the pots off the range altogether, and replace when the heat is less. By feeling the outer sides of the large pot it is easy to ascertain when removal is necessary. The fibre must be kept wet. Of course, when the plants are fairly up I cease the stove treatment, and stand the pots in a room looking south, and so gradually harden them off. By this means I have this year raised Begonia Fœbeli and Balsams from seed.—Illawarra.

A Crested Fern.—Few Ferns are more valuable for decorative purposes than Pteris serrulata cristata major. In a small state it is exceedingly pretty, and when grown into a large specimen 3 ft. to 4 ft. through, its beautiful crested pinnæ droop gracefully from arching fronds 2½ ft. to 3 ft. in length. This variety produces spores (seeds) readily, but they seldom produce anything like the parent plant. Division is, therefore, the only sure way of propagating it.—S.

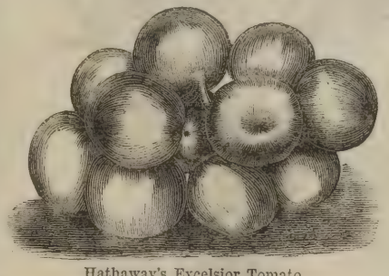
Clematis indivisa.—I observed that a few weeks back some one recommended Clematis indivisa lobata as a conservatory climber, as being free from attacks of insects. My experience of it is the reverse; scale will attack it sooner and increase upon it more rapidly than any other plants I know. It is very pretty for about a fortnight or three weeks; and when the bloom is over the plant is disfigured by the stalks of the blooms, which hang on a long time and require cutting off—a most tedious job. If I had to plant a conservatory with climbers, I would have no plant liable to attacks of insects. One cannot fumigate, as one cannot keep the smoke out of the rooms; and one cannot syringe with insecticides without injuring the bloom of plants underneath or on the other climbers. I should confine my selection to the Lapagerias, red and white, the Tacsonias and the Passifloras, with perhaps a Heliotrope and a Fuchsia. —E. T. B. [We have seen the Passiflora mentioned grown for years without being attacked by insects; whilst we have seen the Lapageria covered with scale from top to bottom. Good culture is the only sure way of warding off insects from greenhouse climbers.]

What can be Done in a Small Garden.—The vegetable portion of my garden is only 55 ft. by 28 ft., in which I have grown, with the exception of last year, sufficient to supply our family of five with one dish all the year round, very often with two, besides herbs, Lettuces, and small salad. We only buy a few Onions and Potatoes, of which we grow enough for one month's consumption. For winter use we have Cabbages, Carrots, Beets, Parsnips, Celery, and Artichokes, all of which failed last year, except the latter and a few Beets. My average outlay for ten years, including manure, gravel, Pea sticks, &c. (but not labour, as I work it myself), has been only 25s.—Hortus.

The Bible Flower Mission.—This mission is started for the purpose of providing patients in hospitals with flowers. Last year no fewer than 260,000 bouquets were distributed amongst the hospitals and infirmaries of London; but this number could be vastly increased were all our readers to contribute a few at times through the year. Any contributions of even the commonest flowers, evergreens, everlastings, &c., would be most thankfully received; and any information will be given by Mrs. L. E. Turton, hon. secretary, 28, St. Martin's Lane, Cannon Street, E.C.

VEGETABLES.

The Tomato, or Love Apple.—Plants for outdoor culture require to be in readiness for planting out by the first week in June—that is, if ripe fruit be expected from them in the open air; if delayed longer, the chances of success are greatly diminished. If the weather be favourable during the latter end of May, a plantation might be made, at the same time reserving sufficient to take their places should they get injured by frost. The exact time at which to sow the seed will of course depend upon the convenience at command for protecting the plants after they are up. If at starting a temperature of 55° or 60° can be given them, the beginning of April will be early enough; but if that amount of warmth cannot be given, and they are obliged to be raised in cold pits, it will be useless to sow before May. Pans are generally used for seed sowing, but if a gentle hotbed can be spared it will be better to sow on that, provided the plants are taken up before transplantation would damage the roots. Perhaps the best method of all is to put two or three seeds in 3-in. pots, and place them near the glass, thinning them out after they are up, so as to leave the best and strongest plant in the pot. After that they should be kept moist, and potted on as they require a shift until the middle of May, when they may be gradually hardened off by putting them into cold frames, and keeping them close for a few days, giving them air more



Hathaway's Excelsior Tomato.

freely as they advance in growth. After they have attained the height of 9 in. or 12 in., the shoots may be stopped, to strengthen the plants and make them more bushy. The growth made after this will be more hardy and shorter-jointed than when the plants were in heat, and they will be more likely to succeed when planted out than if they had not been stopped. A warm situation is indispensable for Tomatoes; therefore if there be one spot in the garden warmer and more exposed to direct sunshine than another, let them have the benefit of it. Vacant spaces between fruit trees on a south or south-east wall are generally the places allotted to them; and where this can be done it is an excellent plan; but the best place for them is a sunny bank, pegging them down close to the ground as growth advances. If a bank be made for the purpose, it should be thrown up high enough at the back to give it rather a steep slope; any kind of rough soil will do for making the bank itself, provided a space be left at its base for suitable soil for the plants to grow in. Ridges similar to those employed for Cucumbers are likewise sometimes used, and with satisfactory results. Another way, and a very good one, is to have rough pieces of trellis-work or hurdles placed in a slanting direction and firmly secured at the front, the back being supported on stout stakes. Plant them at the base, as in the case of banks, and allow the Tomatoes to run over the trellis thinly but regularly; and when a good show of bloom has been produced, pinch off the points of the shoots one joint above the flowers. The fruit will then set quicker and more evenly than it would if allowed to make overgrowth. When sufficient fruit has been set for a good crop, all flowers should be removed, and the shoots should be kept closely pinched in. Thus treated, the fruit will swell rapidly—that is, if the weather be favourable. After planting, a good mulching of rotten manure may be advantageously applied if the weather be dry. As regards size and appearance, Tomatoes have doubtless been improved, but the new varieties are much more tender than the older ones; therefore, for outdoor culture, the latter are to be preferred. The Large Red and Early Smooth Red are the two best varieties for outdoor culture. The Orangefield is a good dwarf, hardy, and prolific variety, and should also be largely grown for outdoor crops. For early crops under glass, or for general crops, where protection is afforded, Hathaway's Excelsior, which we now figure, is perhaps the best variety that can be grown; it is large, round, perfectly smooth, and excellent in flavour, and is valuable for exhibition purposes. It is a kind highly appreciated by American growers, who consider it the best variety in cultivation. Red spider, green fly, and small-winged white fly, are the principal enemies by which Tomatoes are attacked; and these may easily be kept in subjection by means of frequent syringings with Tobacco water. Of late years the Potato disease has attacked Tomato crops just as they are ripening, rendering them useless.

Pea Protector.—I have a Pea protector of my own construction which answers most admirably. I, therefore, desire to describe it. I take two Hazel sticks about as big as my finger—green, and 2 ft. long; then form a bow by bringing the two ends together within 8 in. or 9 in., and sustain them in that position by a string tied across 6 in. or 8 in. from the apex of the bow; then with a knife cut slight notches at 1 in. apart all round the outside of the bow from the said string. I then measure the row of Peas I intend to protect, and thrust the ends of the bow in the ground firmly. I do it at the side of a walk or somewhere to avoid too much treading of the ground where the Peas are sown. Then take a reel of cotton (I think black is best), and, securing the end in the lowest notch in one bow, and holding the reel on a small round stick, run to the other end and fasten it in the corresponding notch, and so on till all the notches are filled. When done it will be a complete arch of parallel lines. It then requires two to take it and place it over the Peas; then a stick thrust down inside close to the bows will keep them from drawing together and keep the cotton tight.—G. T.

Egyptian Turnip-rooted Beet.—This is an excellent variety for shallow soils; its colour is good, it comes into use quicker than the long-rooted kinds, and, having a small top, it can be grown closer together than most sorts, which in small gardens is a great advantage.—W. D.

Mulching Peas.—Covering the soil for a space of 2 ft. or so on each side of the rows of Peas with manure, or half-decayed litter, has at this season an astonishing effect upon both the quantity and quality of their produce; and on dry soils mulching should always be resorted to. —R. A.

Young Winter Carrots.—I find no more useful vegetables during the winter and spring months than young Carrots. I sow them in August outside, on a south border if possible, and commence drawing them in October; and seldom does the bed escape a visit daily. They are used both as a dish, and cut up in so many forms for purposes of decoration, that they have become quite a necessity.—R.

Dwarf French or Kidney Beans.—On a warm south border these may be planted as early as the middle of April; Canadian Wonder and Negro Long-pod are two of the best varieties. Where an early crop is an important consideration, the Newington Wonder, although small, is prolific, and comes in early, but the pods must be gathered when fit for use, as, unlike the larger kinds, they soon get old and tough. Plant in single rows 2 ft. apart, draw the drills with the corner of the hoe from 2 in. to 3 in. deep, and plant the Beans 6 in. apart in the rows. In many gardens they are planted too thickly, and the plants in consequence do not bear so continuously or so freely as they ought to do; and, moreover, this thick planting induces weakly growth, that succumbs sooner to drought or any other unfavourable influences. When fairly above ground draw some of the warm dry surface-soil round the stems to shelter and strengthen them, and gather all Beans as soon as they are fit for use. To secure a plentiful succession, plant a few once a month till the end of June.

Potatoes on Strawberry Beds.—Observing that your excellent correspondent "A. D." intends growing his Potatoes on the above kind of soil, in order to test the relative efficiency of certain artificial manures, I beg to say that I—in common, probably, with many others—shall look forward for the results with much interest. During April, 1878, I dug up and immediately planted, without any manure or previous preparation whatever, a similar bed, 24 ft. by 10 ft., with eighty-one sets of Magnum Bonum Potatoes. In September following I dug up half-a-dozen bushels of excellent tubers, perfectly free from disease, one-third of which averaged nearly a pound each. Last year I obtained somewhat similar results. This season I have planted nearly a quarter of an acre, by way of experiment, with medium and small-sized whole tubers, crown sets and side sets respectively in order to test their relative producing powers under precisely similar and different circumstances.—NORTHANTS.

FRUIT.

GOOSEBERRY TREES THROWING UP SUCKERS.

THIS is often owing to the soil being of such a nature that the plants cannot root deeply without injury. When trees or shrubs root close to the surface, there is always a tendency to throw up suckers. The remedy is to provide the plants with a soil in which they can send their roots deep without meeting anything injurious. Suckers may also be caused by the parts of the plant which are above ground being partly injured and the bark dried up. Any fresh flow of sap from the roots will then have a tendency to rise in suckers. Last winter I had to remove a lot of Gooseberry bushes, which were in a very bad state, all the old wood being covered with Moss and fungus. Some of them had seemingly only produced a few weak shoots since leaving the nursery; these, however, had during last season sent up a dozen or more strong suckers from just under the surface of the soil. The ground is level, and the soil light and shallow, but resting on a stiff marl, through which water passes very slowly, so that the lower part of the soil remains during winter and at any other season in a state of liquid mud.

On removing the bushes I found those which were sending up suckers had been planted so deeply that the original roots were lying in water on the top of the subsoil, and had scarcely thrown out a fresh fibre. A wig of strong fresh roots had, however, sprung from the main stem just under the surface of the soil, from the same point the suckers sprang from. The cause of the suckers was, seemingly, that the plants had been so long in a decrepid state that the vessels were dried up, and unable to carry off the sap made by the fresh roots, which found vent in suckers. A number of Currant trees were in exactly the same condition where planted too deeply. Those bushes which had their roots near the surface were in a better state, but the only one that was really healthy was standing in a drier soil.

Where the subsoil is impervious to moisture, the only permanent remedy is deep cultivation and drainage; but for the present the suckers should be cut away as fast as they appear, a mulching of manure or Grass-mowings applied so as to keep the surface roots moist and cool, and the bushes encouraged to make plenty of new wood and foliage. This treatment will produce a healthy layer of bark and wood by autumn, and if continued for a second year will supply the plants with newly-formed vessels sufficient to carry up all the sap the roots can supply. If the soil is very rich, the plants might be induced to form a second tier of fruiting branches at a higher level than the first by allowing a vertical shoot to rise from the centre and getting horizontal branches from that. Close pruning, thinning, and heavy crops of fruit will always have a tendency to dry up the sap vessels of a plant. With Gooseberries and Currants, which fruit early, a good treatment would be to manure freely as soon as the fruit is gathered, so as to produce vigorous young wood to carry next year's fruit. J. D.

Tuberous-rooted Begonias.—These are becoming popular garden and greenhouse flowers, judging by the immense quantity in preparation at Messrs. Laing's nursery, Forest Hill, where during the summer probably the finest sight of Begonias ever seen will be displayed. A large piece of ground has been prepared in which to plant a variety of the best sorts to show their usefulness for flower-garden decoration. As window or cool greenhouse plants these Begonias are worthy the attention of all amateur gardeners. Small plants grown on now in pots will be ready for planting out in the garden early in June, and will flower in August and September; and when cold nights set in, if the plants are potted and placed indoors they will give a display of bloom till nearly Christmas.

Sisyrinchium grandiflorum.—This elegant hardy perennial is well suited to small gardens. The habit of the plant is well shown in the accompanying illustration. It grows about 1 ft. high, forming an erect tuft of irregularly sized sheathing leaves. The flowers are either solitary or, more generally, produced in pairs, from a two-valved spathe, and are of a splendid dark velvety vinous-purple colour, with yellow anthers. They bloom in April and May. There is a very pleasing variety of this plant with pure white flowers. It is, as yet,

The Spring Satin Flower (Sisyrinchium grandiflorum).

rather scarce, but when it can be obtained it forms an admirable contrast to the purple-flowered type. These plants are quite hardy enough to withstand our ordinary winters. It is, however, safer to grow them in pots, and winter them in a greenhouse or under a frame. The best compost for them consists of a mixture of sandy loam and peat broken into largish lumps. The pots should be well drained and placed in a half-shady position. The plants are very easily multiplied by division of the fibrous-rooted tufts in autumn. It may be had at any good hardy plant nursery.

Primroses for Spring Gardening.—Few plants are more deserving of culture than the many fine varieties of the common Primrose. As they all proceed from the wild Primrose of the hedgerow, they are perfectly hardy, and only require their natural soil, situation, and habits to be imitated as nearly as possible. The double varieties are amongst our finest spring flowers, and may be had in various shades of colour, including white, primrose, golden yellow, lavender, and various shades of rose and crimson. The single varieties are equally fine, and even more profuse bloomers. Country cottagers in the Home Counties are great at Primroses; beautiful beds of them may now be seen in many Kentish villages. I noticed some beds the other morning in a Middlesex village presenting many shades of primrose, rose, crimson, and purple, some of the plants making a very close approach to scarlet, being what is usually described as an orange-crimson. They are not so suitable for spring bedding as some plants, as they do not bloom in perfection unless transplanted in May or June of the previous year; but being neat in effect when out of bloom, and dwarf in habit, two or three lines of them might be used in the front of beds, to form a pleasing contrast with bedding plants, and allowed to remain permanently. Where good single varieties are grown, seed should be saved and sown in leaf-mould as soon ripe, and kept shaded and moist. Many of the plants so procured will be worthless, but some good ones may be expected. Primroses root freely, and require a light rich well-drained soil, containing plenty of vegetable matter in a state of decay. Peat or leaf-mould should be used as manure. The withered leaves should not be removed as they fade, but allowed to decay about the plants. In suburban gardens where the air is still fresh and the houses are not overcrowded, Primroses may be grown with success.—J. D.

Hoteia (Spiræa) japonica in the Hardy Herbaceous Border.—This most popular plant is rarely seen as an occupant of small gardens, presumably from its being commonly offered for sale in a forced, and consequently tender, state; it is, nevertheless, one of the best plants known for a shady border in a rich soil. Strong clumps planted in autumn will flower the following spring. Where forced plants have been purchased they may be planted out when they have done blooming, but will not do much the following season.—J. D.

The Lesser Celandine.—Few native plants are more showy or more likely to yield interesting results under cultivation than this, which would be more prized were it less plentiful. The habit of the plant is neat and compact; the flowers, 1 in. across, are freely produced, and of a good shade of yellow. The plant thrives well in damp town gardens where little else will grow. At one period there were two double varieties in cultivation, double yellow and double white. The leaves are heart-shaped, bright green, and sometimes show a tendency to a variegation similar to that of Cyclamen persicum. The whole plant is glossy, as if varnished.—J. D.

The May Flower (Epigæa repens).—I was surprised and not a little pleased to hear what "Junia" had to say about Epigæa repens, for I delight to overcome difficulties, and I have the plant now in bloom in my garden. I had it from Messrs. Backhouse, York, who doubtless will be able to supply "Junia." It is planted in a peat bed, under the shade of Rhododendrons, and has only had the protection of a few small stones all winter.—HARTSIDE.

Liquid Manure.—As this is the season when amateur gardeners are considering the question of providing liquid food for their "pets," I venture to send a few notes anent my own experiences in this direction, The summer before last my friends and neighbours used to say "How beautiful and healthy your plants look," and certainly they did grow grandly and look well, although the soil of my garden is not a soil, but a dry, hungry sand. As the means I adopted are within the reach of everyone without cost, a few words of explanation will, I trust, prove both interesting and serviceable to the readers of GARDENING. It is no new thing to suggest the use of urine as a liquid fertiliser, but its beneficial effects are only fully realised when it is properly prepared. Fresh urine applied to plants is a mistake. It is only when the nitrogenous matter has become decomposed and turned into ammonia that its value as a manure exhibits itself. To bring about this decomposition in the most rapid and thorough manner is the first consideration. It is a curious fact, and one very well known to our Lancashire fulling millers, that urine will ferment and develop ammonia much more rapidly and perfectly when mixed with water than in its raw state. Hence, to prepare this article for my purpose, I proceed as follows:—Into a pan, tub, or other suitable vessel, I put all the chamber slops (that have had no water put thereto), and other collected urine. To this I add warm rain-water in the proportion of one-fourth, that is, one gallon of water to every three

of urine. When the vessel is full, I allow it to stand exposed to the sun and weather for a fortnight or three weeks, giving it an occasional stir with a stick. Meantime, a second vessel is being prepared to keep up the supply. If the liquid is kept in a warm corner, and well exposed to the sun, it well be ready for use in about a fortnight, but in is none the worse for being double that age. For use, I take from a pint to a quart of the fermented liquor and add it to a bucketful of water, giving my plants a dose three times a week. But in the case of heavy retentive soils I should certainly not exceed the proportion of one pint to a bucket of water, until I had very carefully watched the effects. Where the soil is as sandy as we have it in south-west Lancashire, stronger doses may be used, not only with impunity, but advantage. For vegetables, the stronger dose may be used with safety. My firm belief is that this simple natural fertiliser excels all the patent concoctions. Of course I admit that it is somewhat more troublesome to prepare than taking guano or other portable fertiliser and mixing it with water, and using right off. These latter, however, are not always available, whereas the former is. Moreover, I am a believer in the utilisation of whatever refuse matters are within our reach, without going further afield.—Saxon Deyne.

ROSES.

ROSES FOR NORTH YORKSHIRE.

Hybrid Perpetual Roses.—*White.*—Boule de Neige, Perfection de Blanches. *Light Peach.*—Comtesse de Serenyi, La France. *Salmon Flesh.*—Captain Christy, Madame Devert. *Light Pink.*—Comtesse de Chabrillant, Princess Louise Victoria, Bessie Johnson. *Rose Colour.*—Anna Alexieff, Madame Boll, Princess Mary of Cambridge. *Light Crimson.*—Victor Verdier, Jules Margottin, Glory of Waltham, Camille Bernardin, Comtesse d'Oxford, Marquise de Castellane, Edward Morren, John Hopper. *Full Crimson.*—General Jaqueminot, Maurice Bernardin. *Scarlet, &c.*—Madame Victor Verdier, the Shah, Duke of Edinburgh, Maréchal Vaillant, Sénateur Vaisse. *Darkest Shades.*—Charles Lefebvre, Vicomte Vigier, Jean Liabaud, Duke of Connaught.

Bourbon Roses.—Modèle de Perfection, Armosa, Queen, Souvenir de Malmaison.

China Roses.—Ducher (white), Eugène Beauharnais (amaranth), Mrs. Bosanquet (flesh), Marjolin de Luxembourg (dark crimson), Cramoisie Supérieure (crimson), and Fabvier (scarlet).

Amongst the Bourbons may be planted the two Hybrid Perpetuals, Baroness Rothschild (light pink), and Madame Noman (white). Plant the Hybrid Perpetuals from 5 ft. to 6 ft. apart, the Bourbons from 4 ft. to 5 ft., and the Chinas from 2 ft. to 3 ft. If pot plants can be had they may be planted now; but if not it will be better to wait until October. A good effect would be produced if a few tallish standards of the Noisettes Céline Forestier and Caroline Kuster (yellow), Aimée Vibert (white), and La Biche (cream), were planted amongst the Hybrid Perpetual bushes. These form effective weeping Roses, and, having light coloured foliage, would contrast with the perpetual bushes in every way. No protection would be requisite for any of the above unless the situation is peculiarly exposed. Bush Roses like a rather lighter soil than standards. Gladioli, and such annuals as the Clarkias may be grown between the plants the first year or so, until the bushes attain some size. J. D.

Weeping Roses.—This form of Rose growing on the English Briar is most suitable for Roses naturally of a climbing or rambling habit, and which flower mostly on the ripened shoots of the previous year, requiring little or no pruning, but only an annual cutting away of the old wood which has already flowered. The Briars for the purpose are generally recommended to be planted, trained, and budded where they are to remain. Long clean-stemmed Briars of extra length can only be looked for in strong soils and where the roots have the help of the drainage of a farmyard. In such situations stocks may be found even 12 ft. or 14 ft. high; there is nothing impossible, therefore, in raising such exceptional Briars artificially. Standards of suitable varieties can be had from the leading Rose nurseries up to 8 ft. high. Of summer flowering Roses, suitable families are the Austrian Briars, the Boursaults, some of the Hybrid Chinas, the Ayrshires, and, for very sheltered situations in the south of England, the Multifloras. For conspicuous positions the best Roses for the purpose are the evergreen Roses, and the Noisettes, and hybrids of Noisettes and Teas; both these classes flower best with the shoots bent down, both flower mostly in clusters or bunches. As the finest of all, take Maréchal Niel, and imagine it like a Weeping Ash covered with flowers. The shoots have to be trained something in the form of a frame or hoop.—J. D.

THE LACE-WING, OR GOLDEN-EYE.

The lace-wing or golden-eye (Chrysopa perla), here figured, is not a garden destroyer, but a destroyer of garden destroyers. It is the great destroyer of green fly; hence all gardeners will look upon it with respect. Its aspect (that is, the aspect of the perfect insect) is by no means suggestive of destruction; a more delicate, beautiful, and ethereal creature cannot well be imagined. The species are pale greenish, or yellowish, or almost white. The wings are like a film of lace, the body "as thin of substance as the air," and its eyes large, prominent, and like polished golden globes glittering in the sun.

A Gardener's Friend: the Lace-wing, or Golden-eye (Chrysopa perla).

Although called a fly, it is not truly what is ordinarily meant by that word, It is not a two-winged fly like the house-fly, but belongs to the same order as the dragon-flies, and forms one of the genera constituting the family Hemerobidiiæ. There are about a dozen of species of Chrysopa found in Britain, of which the commonest is the one of which we now speak.

They are common about hedges, gardens, fields, plantations, &c.; in fact, wherever they prey the green fly is to be found. They fly principally by night, and are sluggish and easily caught by day. Although so lovely, they are in one respect like a whited sepulchre: they have a bad smell. They are common in June, July, and August, in which months the eggs are deposited in a very remarkable fashion. The reader will see in the woodcut something like an aigrette, a few hairs, surmounted each by a knob, standing out all round. These knobs are the eggs, and they stand upon a fine elastic flexible hair-like stem. It is not difficult to conjecture how they are thus laid. There must be glutinous liquid near the ovipositor which envelops the egg, and does not immediately part from it when the female places it on the leaf or object on which she is laying. As she withdraws her abdomen from the spot, the egg does not readily quit it, but the gluey matter is drawn out like a thread of sealing-wax, and when it parts the egg is left standing on the top of it. The length of this hair of glue varies; it is sometimes as long as an inch, at other times shorter. These eggs are thus very curious-looking objects; and we well remember how puzzled we were when we saw them for the first time. It was on a Cherry, where several were standing, and, like others before us, we were at first disposed to take them for some sort of vegetable production—a fungus, or the capsule or seed-vessels of some Moss. It is unnecessary to say that this contrivance is a very effectual protection from enemies, the elasticity and tenuity of the hair or stalk giving no hold to any creature that might attempt to lay hold of it. The eggs are often laid in clusters, as here represented, but as frequently one by one at little distances from each other. It is the larvæ that are the real enemies of the green-fly—the perfect insect apparently eating little or nothing. But the larvæ make up for it. They are called by the French *lions des pucerons*, or green-fly lions. They vary considerably in colour, being brown or whitish with orange spots, and having sixteen fleshy tubercles down the sides, but they are difficult to detect unless when engaged in the actual occupation of seizing and devouring their prey. They cover themselves with a coat of many colours, composed of portions of the green and delicate lichens which cover old trees or palings, or of the skins of the green-fly that they have sucked dry, so that unless when they are in motion it is not possible either for the prying eye of the entomologist, or the still quicker eye of the titmouse and other small birds to detect them; and thus disguised they lie in wait with patience for their prey. When amongst them, however, their sluggishness vanishes; they seize them with their long and powerful jaws, and will devour the largest of them in half a minute, leaving nothing but the skin. They are exceedingly voracious, and will clear a whole leaf from green fly in an incredibly short time. After feeding in this way for about a fortnight, they go into the chrysalis state, first spinning a small whitish cocoon, which they attach to the leaves of the plants, and about which the pieces of lichen and skins of flies that formed the covering for the larvæ usually stick; but the remarkable thing is that this silken cocoon is spun, not from the mouth of the insect, but from its tail, as is done by the spider. It would seem that it must be spun from the same reservoir of glutinous matter which supplies the hairs on which the eggs stand, and seems opposed to the view entertained by Curtis and other entomologists that this reservoir is in the ovaries. The cocoons are very small—so small that it is a matter of surprise how the long wings of the insect could ever have been folded up in them—often not bigger than a Barleycorn or small Pea. In this they change to the pupa, and in the summer time they come out in the perfect state in about three weeks; but those that pass into the pupa in autumn remain in it until spring.

Freeing Walks from Weeds.—During May these will require particular attention in regard to weeding, the old method of hand-picking being yet the best. The objections to this system are the amount of time taken up in the work, the impossibility of pulling up the very small weeds which show themselves after the first shower, the loose surface left should there be many weeds, and that hand-weeding does not destroy any seeds which may exist in the gravel. Corrosive acids have been recommended for clearing weeds from walks, and also salt; but these, although effective, if used of sufficient strength and in sufficient quantity, can only be applied with great care, as any vegetation in the shape of edgings with which they may come into contact will be sure to suffer more or less. Acids are also destructive to watering-pots, clothes, &c., and they will be found expensive, whilst salt is unsightly, as, to be effective, it should lie on the surface for some time, its effect when used with water in a boiling state being less satisfactory than when used in a dry condi-

tion. It must also be remembered that whether acids or salt are used the weeds remain for some time in a withered condition on the surface. Generally, when roads and walks are made with a view to utility, the work of weeding is trifling; but if broad roads and walks little used exist, they are certain to become extremely troublesome in this respect. Sulphuric acid (vitriol) is perhaps the most efficacious for the purpose of killing vegetation, and it should be diluted with twenty, thirty, or forty times its volume, according to and in proportion to its concentration. Salt used in a dry state may be put on at the rate of from 2 lb. to 4 lb. per square yard with boiling water. It matters very little the quantity used, provided it be not less than that recommended in a dry state. The action of both acids and salt is not permanent, but may, if well done, last the summer and autumn. The best time for applying them is during dry weather, as weeds are then in a state to take up the maximum of the poison applied. Hand-picking should be done in moist weather, the weeds coming up better when the paths are in a soft state; and if well rolled, the effect is more easily obliterated.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

May 3.—Sowing Dwarf Green Curled Savoys, and the following sorts of Broccoli — Walcheren, Autumn Self-protecting, Carter's Champion, Wilcove Late White, Cattell's Eclipse, and Leamington; potting on Cockscombs, Celosias, young Cyclamens, and Duetzia gracilis; hoeing up all weeds and suckers amongst Raspberries, leaving six canes to a root for training; digging out a trench and getting it filled with fermenting material, and otherwise getting it ready for ridge Cucumbers and Vegetable Marrows; potting scarlet, pink, and white Pelargoniums; shifting seedling Petunias into 6-in. pots; sowing Centaureas, Coreopsis, Jacobæs, and Celosias; also Marjoram and Basil, and more Scarlet Runners; plating Celery with Lettuces on the ridges; staking Tree Carnations and placing them in the open air in a sunny situation; putting in cuttings of scarlet Pelargoniums and Panicum variegatum; watering Radish, Mustard and Cress, and other seed-beds; hoeing among all growing crops.

May 4.—Sowing the following sorts of Peas:—Giant Emerald Marrow, Dr. McLean, Ne Plus Ultra, and Omega; also two rows of Johnson's Wonderful Longpod Bean; giving all Broccoli, Turnip, and other seeds a dusting with wood-ashes early in the morning to keep down the fly; digging all flower borders ready for planting; turning over gravel walks in back shrubberies to give them a fresh appearance; looking over all Strawberries that are well set, picking off the weak and late blossoms, and tying up Lettuces to blanch; potting double-flowered Wallflowers, scented-leaved Pelargoniums, and Duetzia gracilis; also Ridge Cucumbers; sowing pots of Mignonette and beds of Chervil; planting Vegetable Marrows and pricking off a frame of Stocks; dibbling in Beet seed where plants have failed to come up regularly; putting Balsams in intermediate pits; thinning Turnips; stopping the shoots of Broad Beans as fast as they come into flower; staking Collinsias and other annuals intended to flower in pots; earthing-up spring-planted Cabbages and Cauliflowers; hoeing among Rose trees, Raspberries, Carrots, Parsnips, and Peas; sticking Peas as they require it; washing Camellias and syringing Peaches and Nectarines with soft soap and Tobacco-water to kill aphides.

May 5.—Sowing Primulas, Cinerarias, Stocks, Asters, and Humea elegans; potting on Chrysanthemums and Azaleas; leaving on air night and day in early Vinery in which the Grapes are colouring; clearing early Potato frames, and getting them ready for Melons; digging out more Celery trenches, and getting the manure into them. Sowing Rhodanthe Manglesi and another crop of Spinach; pricking out East Lothian Stocks in frames, and Lettuce plants in beds out-of-doors; putting in Coleus and Scutellaria cuttings; tying Carnations and staking Delphiniums; placing Camellias at one end of greenhouse and putting shade over them; earthing-up Broad Beans; putting all spare hand-lights over French Beans in border; filling up blanks and watering Cauliflower plantation; also watering Turnips and mulching Strawberry beds with short straw to keep the fruit clean.

May 6.—Sowing Leeks and Mustard and Cress; potting Balsams and spring-struck Fuchsias; stopping all young shoots on Fig trees; staking and tying out old Fuchsias for exhibition; planting out three trenches of Red and White Celery to come in about the middle of August; hoeing amongst Strawberries, and cutting up chaff from litter as it comes from the stable for mulching them; looking over peach trees on walls, picking off all curled leaves, and disbudding them where required; potting Capsicums, Tomatoes, and Cucumbers; also Globe Amarantus and Petunias; sowing another crop of Turnips, Lettuces, and French Beans; staking Heliotrope and Mignonette in pots; preparing land for Scarlet Runners; weeding and cleaning Asparagus beds.

May 7.—Potting a batch of young Vines; also Melon plants; staking and tying up Mignonette in pots; planting French Beans in cold pit previously brought forward in pots; thinning Turnips, Carrots, and Spinach; renovating all linings round frames; potting Heliotropes in 4½-in pots for summer blooming; potting off Tuberoses, Marjoram, and Sweet Basil; also young Cyclamens; sowing another batch of Balsams, Mignonette, Mustard and Cress, and Chervil; putting in cuttings of Iresines, Justicias, Thyrsacanthus, Panicum, and Fuchsias; clipping hedges; weeding Violet beds; thinning Turnips; raking land ready for sowing Peas and Beans; watering Cauliflowers, and top-dressing Liliums; earthing up Broad Beans; hoeing Strawberry plantations previous to mulching them with short litter; manuring and digging land for planting Savoys.

May 8.—Looking over Peach house, and tying in all young shoots; also Cucumbers and Melons; picking off all false blossoms, and stopping them where required; hoeing amongst all growing crops; sticking Peas and getting them earthed up; potting off spring-struck scented Verbenas; shifting scarlet Pelargoniums, Stocks, and Anemone japonica into large pots; sowing White Stone Turnips; making ridges ready for planting Vegetable Marrows; manuring Celery trenches; sticking Peas and Scarlet Runners; thinning Carrots and Turnips; clearing Watercress beds of weeds; cutting down remainder of old Fuchsias, and placing them in Peach-house to start into growth; watering seed-beds with weak guano-water.

Glasshouses.

Azaleas done flowering remove from the conservatory to a warm pit or a warm corner of the greenhouse, where they can be daily syringed and assisted to make their growth. Camellias, Acacias, Myrtles, Araucarias, and similar plants planted in beds and borders in greenhouses, should now be growing freely, and consequently require extra attention in the way of watering. Pot on plants of double Petunia, using light sandy loam and well-decayed manure for the purpose. Mimuluses in conservatories are very ornamental; and, used in that way, a strong, rich, moist soil and cool position suits them best. Lemon-scented Verbenas also make good conservatory plants, as do likewise well-grown Heliotropes.

Cinerarias and Primulas.—A little more Cineraria seed should now be sown to succeed the earliest batch; also Primula seed to furnish plants in bloom for the winter. Those who have not had much experience in raising Primulas from seed frequently find a difficulty with them, as the seeds are very tender, and must only be very slightly covered. A good method is, after filling the seed-pans with finely sifted soil, consisting of three-fourths loam and one of leaf-mould mixed with a little sand, and making the surface firm, to sow the seeds evenly, not using any covering of soil, but laying over the top a little chopped Sphagnum Moss; a sheet of glass placed on the top will keep the soil sufficiently moist to cause the seed to vegetate. As soon as growth has commenced, the Moss must be removed, otherwise the young plants will become lanky and weak; gradually expose them to the light.

Flower Garden.

Phloxes, Pyrethrums, Pentstemons, &c., in Pots.—These hardy border plants may be classed together for convenience sake. Their culture is much the same; they require good rich loam and 8-in. or 9-in. pots, well drained, for plants with four or five stems. The flowering-stems are now well advanced and the pots are filled with roots; if there is any lack of vigour give manure water weak at every alternate watering. Support the stems with suitable sticks. This class of plants requires a considerable supply of water at the roots, and they suffer if that be neglected even for a day; they show signs of distress by the oldest leaves becoming yellow and the stems hard and wiry. They should all be out of doors now, sheltered if possible from the north-west wind.

Polyanthuses.—These are much more lasting than Auriculas; the centre truss comes up first, and small trusses are produced for a few weeks afterwards; therefore the same plant will remain in flower, if kept in a cool place and shaded from the sun, for at least six weeks. The leaves under glass have a tendency to become drawn; it is better to remove the lights altogether in fine weather and admit air at night. Water freely and remove all decaying blooms; as they go out of flower place the plants on a cool bottom out-of-doors for a time.

Chrysanthemums.—A cold frame, up to the time when the plants have got fairly established in 5-in. or 6-in. pots, with plenty of air, and fully exposed to the light, is the most suitable place for these. If cuttings were put in in November or December, and kept in a cool place just out of the reach of frost, they will ere this have been transferred to pots of the size just named. Such as were propagated later through the winter must, as soon as the little pots they occupied are filled with roots, be at once moved into larger ones, stopping the shoots of those that are intended to be grown in the usual bushy form; but a portion may be grown in the shape of standards on a single stem from 2 ft. to 2½ ft. in height, and not stopped until they have reached this, after which, nip out the points two or three times, so as to induce them to break a sufficient number of shoots to form the head, and all on from the first, removing any side breaks below these or sucker growths from the bottom; but for growing in this way the freest flowering medium-sized kinds should be selected, as many of the largest bloomed varieties that are not able to perfect so many flowers are not so well adapted for this shape. Mrs. Rundle, white, incurved; Mrs. Dixon, rich yellow, incurved; George Glenny, straw coloured, incurved; Julie Lagravère, velvety crimson; Hermione, blush; Annie Salter, yellow; Lady Talfourd, rosy-lilac; purpureum elegans, violet-crimson; and others of similar habit, will all be found suitable for growing in the form of standards.

Carnations and Picotees.—Plants in beds and borders are now starting into growth, and will not succeed if neglected. Make them firm round the roots by pressing down the soil with the fingers; and, if necessary, a short stick should be placed to any weakly subjects. See that the surface of the beds is stirred up and that weeds are removed while they are in a small state. By this time the earliest-rooted plants of the perpetual-flowering section ought to have been potted off; and on the care taken of them now depends whether they will gladden the cultivator with their beautiful sweet-smelling flowers at Christmas or not. The plants should be encouraged with a little warmth during cold weather, but they must be placed near the glass, and where a free circulation of air can be admitted amongst them. Pot off others as they require it, using small pots. Seeds of the different sections may also be sown in pots, placing them in a hotbed.

Hardy Primulas.—The most useful at present are P. amœna and its varieties—hardy kinds enough, but they do not stand well out-of-doors, owing to damp and frost. In cold frames they stand severe frost with impunity. We leave the plants in cold frames until the flowers open, when they are removed to the greenhouse. Primula japonica sometimes flowers well in pots, and, although this variety has not quite realised the expectations formed of it, still it should be grown for the sake of variety. Green fly persistently attacks it, and also red spider, pests which must be destroyed. In short, all this class of plants grow and flower freely in cold frames, and should be removed to the greenhouse when in flower.

Fruit Garden.

Orchard House Fruit Trees.—In orchard houses in which no artificial heat is employed the temperature must be ruled by the weather. It is advisable, therefore, on bright sunny days to close the lights early in the afternoon, to secure a higher temperature for the night. Disbudding and pinching all strong shoots, and thinning the fruit where set too thickly, will be the routine for this month. Insects must be diligently looked after. Green fly and red spider may be eradicated by fumigation or syringing with Tobacco water or with Quassia-chip water.

Cucumbers and Melons.—A steady bottom heat will still want keeping up, and by attention to syringing and a moist atmosphere the foliage will appear clean and healthy. The fruits on both Melon and Cucumber plants often set too many at a time, and require thinning, so as not to weaken the plants too much. Put pieces of slate or glass under Melons grown in frames, to prevent the damp soil from rotting the young fruit. When Melons are grown in pits, and the plants trained on wires or trellises, the fruit when getting heavy must be supported on a square piece of wood with a piece of string fastened to each corner tied to the wires, leaving plenty of room for the fruit to swell to their full size. Cucumber and Melon plants in frames will still want covering up with mats at night, and continued till all danger from cold weather is over.

Kitchen Garden.

It is by strict attention to the smallest details that success is to be attained; therefore, beginning with the seedlings, these should always be thinned before there is the slightest danger of disturbing the roots of those that are to remain. Many crops are irretrievably injured by neglect in regard to thinning them at the proper

time. Onions, Carrots, Parsnips, Turnips, and kindred subjects, should all be thinned out as soon as they are large enough to handle, and afterwards the ground between the rows should be deeply stirred. The main crops of Beetroot, Broccoli, and Kale should now be sown. Broccoli requires light deep soil, free from rank manure, its best fertiliser being soot or a surface-dressing of guano as soon as the seed is sown. For heavy tenacious soils, burnt earth, charcoal, and wood ashes are preferable. French and Runner Beans may now be sown in quantity. Amongst the different sorts the best for a main crop is the Canadian Wonder; if sown thinly in rows, 30 in. apart, it will require small Birch twigs to support it, as, under good culture, it is a prodigious cropper. As a Runner Bean, Giant White bears to the very bottom of the haulm, and continues bearing throughout the season, if well mulched or watered in dry weather. Cauliflower plants that were wintered in hand-lights require high feeding, and, should the weather turn out to be dry, a dose of liquid manure will be of great assistance to them. Plant out successional batches, and also spring-sown Cabbages and Coleworts, which will come in for early autumn use. Brussels Sprouts are a most important crop, for amongst all the winter greens these have this winter proved to be about the hardiest. The main crop should now be planted; 3 ft. row from row, and 2 ft. plant from plant is none too much. Thin out the seedlings of any that were sown in rows for a permanency. This is the best system of culture, its only drawback being that ground cannot at all times be spared to thus sow them. Main crop Peas must now be sown in quantity, in doing which it is well to forestall the weather, and sow them in trenches, in order that in the event of drought supervening they can be well watered, as these, like Cauliflowers, are thirsty subjects, and resent dryness by the production of mildew instead of Peas. Earth up and stake advancing crops, and if an extra early dish be desired pinch out the tops; the lateral growths will soon show blossom, but, of course, this is at the sacrifice of produce. Asparagus should now be looked over every morning, in order that all heads may be cut before there is the least trace of the buds at the tips of the shoots opening. Plots of ground that have been occupied with winter greens will now be becoming vacant, and should be dug or trenched, according to the crop intended to be sown or planted on them. If for Celery, simply clear off the stumps, and dig out and manure the trenches; and if time and labour be scarce, the same mode of culture will answer for Peas, but preference should be given to entire trenching, when time and labour admit of it. A constant succession of small salads must be kept up by frequent sowings in the open air. Tomatoes, Capsicums, Ridge Cucumbers, and Vegetable Marrows should be potted ere the roots get entangled together, and be grown on sturdily till the last week of this month, when they may be transplanted to their fruiting positions, either near south walls, on south borders, or in other sunny sheltered spots. Prick out Celery, Cauliflower, and herb seedlings, and grow them on, with partial protection as long as cold winds and frosts continue.

Pot Marjoram, Sweet Marjoram, Thyme, and Sage should now be sown on ground previously well prepared for them by fine raking, as owing to the seeds being so small they would be lost if the surface was rough; after raking, smooth the surface with the back of the spade, then sow the seeds and cover lightly with sifted soil. A little Beet may now be sown for an early supply, but do not yet sow the principal crop, as it is liable to run to seed if sown early. Sow in ridges 15 in. apart; where the soil is shallow it may be drawn into ridges about 6 in. high, and on these sow the seed, four or six together, in shallow holes 1 ft. apart, covering them not more than ½ in. deep. A little more Cabbage seed should also be sown, using on this occasion the small-growing Cocoanut, a kind which comes to maturity quicker than the larger varieties; these will form good heads for use all through the autumn, planted on ground on which the first Potatoes and other early crops have been grown. One of the principal things to be observed in a well-managed kitchen garden is to always have in readiness something to plant in the places of such crops as have just been cleared off. Keep the hoe going wherever it can be used when the weather is dry.

Leptosiphon roseus.—To produce the best results with this charming annual, it must be strongly grown, and robust specimens can only be obtained by thin sowing. In light dry soils early autumn sowing is strongly recommended. It is not enough to sow the seed at any period of autumn, it must be—and this applies to most annuals sown at this season—committed to the soil sufficiently early to permit the young plants to attain some size before the setting in of winter; in short, a good framework must be laid, which, on the return of spring, will develop into an effective tuft, covered with multitudes of elegant rosy-carmine flowers, both reflecting credit upon and delighting the heart of its cultivator. When the sowing of the seed has been deferred till a late period of the summer, it is better to sow in boxes or pans in a frame or orchard-house, and plant out seedlings in April; or, in case this should be thought to involve too much trouble, the sowing may be deferred till early spring. A fair amount of success may be looked for, especially in good soils, in which spring sowing will often yield excellent results; the advantages of autumnal sowing are, in fact, best seen in the light sandy soils which suffer so much in seasons of drought. In the accompanying engraving the habit and profuseness of bloom of this exquisite little annual are well represented, and it needs but a slight effort of the imagination to guess the results which might be produced by combination of similar tufts in the formation of beds or borders. All the species of this genus, or rather section of the genus Gilia, are thoroughly deserving of universal cultivation. The very pretty L. luteus and its deeper-coloured variety aureus, are scarcely inferior to the L. roseus, which they

Leptosiphon roseus (a hardy garden Annual).

closely resemble in their general habit, but have somewhat smaller flowers. The hybrid varieties of these, introduced by Messrs. Vilmorin-Andrieux & Co., of Paris, are no less interesting for their supposed origin than for the singular variety of shades occurring amongst them. Of both species there are good white varieties, which deserve special recommendation, that of L. densiflorus being particularly desirable.—W. T.

SMALL SUBURBAN GARDENS.

It is very difficult to get a satisfactory effect out of the narrow slips of garden usually attached to semi-detached villas and terrace houses in the neighbourhood of towns. If shrubs and trees are planted to hide the fences, the circulation of air is impeded, and, especially if the houses are high, the ground becomes sour, breeds Moss and fungus, and refuses to grow many plants that would otherwise thrive.

A bare style of garden becomes almost a necessity if flowering plants are to be grown, but there is no valid objection to a few trees at one end or both ends, so long as the greater part of the ground is not shaded in any way, or sheltered too much from the prevailing winds. The best way of hiding the fences in such gardens is to cover them with creepers or climbing shrubs: Cydonia japonica, Cotoneasters, and Ivies for shady or easterly aspects, and Jasmines, Passion-flowers, and Virginian Creepers, or fruit trees, on sunny walls. A very frequent mistake in gardens of this sort is to lay down Grass in the centre, surrounded by a continuous walk, and a narrow border of flowers close under the side fences. The centre of the garden is the best place for flowers, and many things will grow there which will not do in the side borders. If the length of the ground lies east and west, there will be a shady side which gets no sun in winter and very little in summer. This may be planted with Periwinkles (Vinca Major and Minor), Lily of the Valley, Scillas, Hoteia japonica, and Pansies raised from seed in spring.

In gardens running east and west it is not well to attempt a symmetrical arrangement of plants or beds. If a single walk is made near the south side, the remainder can be arranged for a display of hardy herbaceous plants, with front lines of spring flowers, annuals, or bedding plants, or a mixture of all three; or a piece of turf may be laid down, with small beds next the walk and a continuous border under the sunny fence. If the length of the garden is north and south, a symmetrical arrangement will be more successful; but even then the border facing east will not suit plants which require plenty of sunshine so well as the other side. In selecting plants the time that can be devoted to gardening should be well considered. Beginners, in the first flush of enthusiasm, are apt to attempt too much; and that which is at first a pleasure becomes a task, and at last a burden. A thoroughly good soil, not too stiff, is the first consideration; and that provided, a good stock of hardy things which will almost take care of themselves should be purchased. Those who can only give a glance at their gardens morning and evening, except on Saturday, should avoid all difficult subjects, and fill their beds and borders with plants which only require to be properly planted in the first instance to be all right for a year at least, with the help of an occasional watering in dry weather. For a beginner who has everything to learn, it is not a bad plan to lay out a garden as a school, by running a straight walk down the centre, and laying out the ground in small beds, 3 ft. or 4 ft. wide, at right angles to the centre walk. If only one kind of plant is grown in each bed, the requirements of each can be studied separately. One bed may be Stocks, another Pansies, a third Sweet Williams, a fourth Zinnias, and so on; and if the general effect is rustic, a fine display of cut flowers can always be had, without injury to the effect of beds in which no general effect is attempted.

It is a great mistake to keep continually digging and chopping the soil amongst plants. Many things root near the surface, and if these roots are cut, the year's growth is injured. Beds and borders should not be tidied up in the autumn to make them look clean and smart in the winter; decaying stems should be cleared away, but the litter of withered leaves should be allowed to remain on herbaceous borders, when it protects the plants from frost, and nourishes them for the returning spring. A great deal can be done in small gardens with annual climbers trained up trellises and poles. Even the best varieties of the common scarlet Runner Bean are not to be despised as decorative plants; Sweet Peas and major Convolvulus do well in good soils; and the climbing Tropæolums in poor ones. A semi-circular screen of trellis-work covered with climbers make a good finish to a small narrow strip of garden when the back of the house faces the north, as all the flowers turn their faces to the south. Such a screen will serve to hide a vegetable garden, or the indispensable heaps of manure, frames, beds for propagating, &c. Amateurs whose time is limited should avoid bedding plants, except those which can be purchased cheaply every spring. A few Geraniums can be kept in the windows of the living rooms during winter and planted out in summer; but any attempt to preserve a stock of tender plants without proper appliances and plenty of time to attend to them, will almost certainly result in failure. Cuttings of Geraniums can be struck in the open ground during the summer; these will make nice plants by the following season, if kept rather dry, and just safe from frost during the winter.

Many hardy plants can be multiplied by cuttings exactly in the same way; and those which refuse to strike in the open ground will do so in pots or pans under bell-glasses, or with the simple help of deep boxes covered with sheets of window glass. Where a small hotbed and a cold frame or unheated greenhouse are available, a good display of Asters, Zinnias, and annual Phloxes may be made in beds and borders with very little trouble. These are very suitable for small gardens, and require very little attention when properly planted beyond picking of the faded flowers. In the matter of edgings, ornamental tiles have a neat effect, but have a tendency to harbour vermin. Dwarf Box looks

well with old-fashioned plants, but precludes the use of very dwarf plants close to it. Grass verges are very neat and pleasing but take up a lot of time in keeping them in order. Perhaps the best of all edgings is the common Thrift, but, being a rock plant, it requires peculiar treatment, or it becomes irregular. Where it is used the beds must not be raised or sloped to the edging, and the walks must be very porous, so that there is no accumulation of moisture where they touch the beds; and must not be raised in the centre to throw the rainfall to the edgings. The plants must be set almost in the walks, so that at least half of the cushions of leaves they form rests on the gravel. The plant may be found growing wild on the sea-beach, just out of the reach of high tide. A Thrift edging, with a line of Double Daisies next it, forms a very neat finish to small beds or narrow borders.

Where time is limited, it is well to keep all plants which have to be moved, such as spring bulbs and bedding plants, within comfortable reach from the walks, so that the beds have not to be trodden on in attending to them. The back portions of borders and centres of beds can easily be filled with plants requiring only very occasional attention. By this arrangement much may be done by utilising occasional scraps of time in planting out and picking off past flowers without change of dress. When the best annuals are used, as they should be in all suburban gardens, a great point is to have a good supply of pots of various sizes in which to bring on successional sowings of plants to take the place of those which have done blooming. A little practice enables the cultivator to have nice bushy plants ready to plant when wanted; and if these are in pots the old plants can be removed, and the new ones substituted quickly, and with very little check to the plants. In a small garden a great improvement on the ordinary bedding system can be effected by simply ringing the changes on the many fine varieties of annuals, biennials, and perennials, which can be easily raised from seed, growing only a few varieties each year. For example, in August of the present year sow beds of Pansies, Sweet Williams, and Campanula Medium Calycanthema, and prick them out when large enough where they are to flower the following season. In spring raise Ten-week Stocks. With the help of a few annuals and Tom Thumb King Nasturtiums, these will, with a stock of permanent plants, make a garden for one season. Next season take Delphiniums and Foxgloves sown in autumn, and Asters and Zinnias sown in spring. The third season take autumn-sown Stocks and Indian and Japanese Pinks, and Phlox Drummondi; the fourth season Pinks and Carnations sown the previous year, and so on. The best of the perennials may be retained as permanent bedding plants and propagated.

No suburban garden in the south of England should be without a good stock of Chrysanthemums. They make a fine show on the very verge of winter, and are easily grown if suitable varieties for outdoor cultivation are selected. The cheaper kinds of Gladioli also should on no account be omitted from the most circumscribed list, especially if the soil is light and well drained. A beautiful centre line for a flower-bed would be alternating clumps of Gladioli, English and Spanish Irises, and white Lilies, all of which like the same light rich soil. It is not advisable to attempt the cultivation of Roses in the suburbs of large towns, except in parts where the prevailing winds blow the smoke and exhausted air in a different direction. If the air is comparatively pure, the old white Rose may be tried with success; also the Maiden's Blush, and the common Damask or Monthly Rose, as bushes on their own roots. If these succeed, some of the very vigorous Hybrid Perpetuals may be tried in the same form. Standards should be avoided.

Vases of flowers, statuary, fountains, and all kinds of artificial ornaments, are particularly suitable for small gardens, and agree well with the evidently artificial boundaries and confined space. Some of the best arrangements of small gardens may be likened to conservatories without roofs, and stocked with hardy plants instead of tender ones. For a thoroughly town garden perhaps the best arrangement possible would be to run a line of beds 4 ft. or 5 ft. wide down the centre of the garden, alternating with one or more terra-cotta vases in the same line; these beds to contain no earth, but 2 ft. deep of Cocoa-nut fibre refuse. A few small beds of earth might be left close to the walls, in which might be grown Vines and Ivies to cover the walls, White Jasmine to form an arbour, and German Iris and Orange Lilies as permanent plants; between these beds semi-circular wire or ornamental wooden stands for pots might be placed against the walls. The whole stock of flowers except the plants named would of course be pot plants plunged in the vases and stands, and in the Cocoa-nut fibre beds. The walks might be either asphalte or ornamental tiles. Such a garden would be expensive, but would be far better than struggling to grow in beds of earth plants which would gradually dwindle away. Many things might be grown on the roof or in the windows of the upper floors, where there was more air and sunshine, and transferred to the garden when in bloom; and if a small greenhouse is available, and the air which passes into it is filtered through cotton wool during winter a respectable list of plants may be grown on the premises. It is during cold weather that many town plants suffer through the resinous coating which protects the dormant buds of many of them becoming encrusted with soot and dirt; during summer the evil influence of smoke is much lessened. Pot plants are much more easily and handily managed and kept clean in a town than plants in beds, and in case of an outbreak of vermin they can be much more easily washed or fumigated. J. D.

A Greenhouse Annual (Schizanthus papilonaceus).

Schizanthus papilonaceus. — This beautiful annual makes a really splendid pot plant, growing about 2 ft. high, and bearing flowers very much resembling butterflies with outstretched wings, the petals being blotched and spotted much in the same manner those insects are marked. Seed should be sown at once in a moist heat. The plants should be pricked out when large enough, placing four or five round the sides of a 6-in. pot. In this way, if rich soil be used, excellent plants may be had in flower in July and August.

House and Window Gardening.

CULTURE OF PLANTS IN WINDOWS.

THERE is no branch of gardening which embraces such a wide range as that relating to the culture and preservation in a healthy state of plants in dwelling-houses. There are and always will be so many who have no frame or greenhouse, that the question of how to grow plants successfully in windows is necessarily of the greatest interest to them. Those who have even the convenience of a cold frame will, of course, find the task of decorating the dwelling much facilitated; but, as I have said, there is unhappily a great portion of our population who not only are not provided with this simple accommodation, but whose garden is of the most fragmentary character. This is more especially the case in large towns, where windows in many parts form almost the whole available space in which garden operations are conducted. There is, however, no reason for any one to despair of attaining success, for I have noticed that it is more from want of knowledge than from adverse circumstances that failures occur.

Choice of Subjects for Cultivation.

Formerly the choice of plants suitable for culture in rooms was somewhat restricted, Cactuses and various other kinds of succulents being mainly relied upon for that purpose. Now, thanks to the exertions of plant collectors and to the improvements which have been effected in many of our florists' flowers, we have an abundance of subjects from which to choose. It is almost impossible to give a list of plants suitable for every one, as the conditions of air, light, warmth, and atmospheric humidity vary according to the situation and uses to which the rooms are put. For instance, a plant that would do perfectly well in an apartment that is not constantly occupied, where ventilation is somewhat freely given and where artificial heat is seldom applied, will linger and die where a fire is constantly kept and oil or gas is freely burnt. On the other hand, we shall find certain plants that can only be kept in health by placing them where they are screened from draught, and where the air is maintained at a certain temperature. The care which these two classes of plants will require will necessarily be of an entirely different description, and it is just in this respect that the plant grower in windows will have to exercise judgment. As an illustration let us take the Cyclamen, a beautiful window plant, but one which will only succeed in a cool room; confinement is certain death to it. An india-rubber plant, on the contrary, will thrive best if kept tolerably close, but it must receive certain attentions which the Cyclamen will not need. It will thus be seen how widely varied the treatment of room plants must be, and how necessary it will be to choose suitable subjects for each situation. Then, again, we must take the aspect of each window into consideration. A Moss or a Fern will thrive admirably where a Fuchsia or a Pelargonium will give but little satisfaction. In most dwellings there are windows having different aspects; all that is necessary, therefore, is to ascertain in which of them the desired plant will best thrive. The various types of vegetation, flowering and fine-foliaged plants, &c., may be all represented, and the grower will thus be enabled to secure a series of plants — pictures, as it were, each one presenting distinct characteristics of its own. Whilst indicating a few of the plants best adapted for window gardening, I would advise that growers should allow some scope to their individual likings, and make trial of those plants which they may have a fancy for. There is much yet to be accomplished in this branch of gardening, and the pleasure and honour derived will be in proportion to the difficulties surmounted. There are many plants now considered difficult of culture which probably only require to be better understood to render them amenable to room culture. For a confined atmosphere, such as an ordinary sitting-room, we must rely chiefly upon fine-foliaged plants, those possessing leaves of a somewhat hard, leathery nature being the easiest to preserve in health. Ficus elastica and Cooperi, Aspidistra lurida and its variegated form, Dracæna terminalis, congesta, and indivisa, Cordyline rubra, Chamærops excelsa, Livistonia borbonica, Corypha australis, Maiden-hair and other Ferns, are amongst the best for such situations. For apartments that are but occasionally heated, Grevillea robusta, Acacia lophantha, Aspidistras, Chamærops excelsa, Aralia trifoliata and reticulata, Cyclamens, Solanums, Primula sinensis and denticulata, Violets, Mignonette, Tropæolum tricolorum, and bulbs of all kinds may be grown. The plants enumerated are all suitable for winter and early spring. In summer we get a much greater variety. Pelargoniums, Fuchsias, Lobelias, Petunias, and all the various kinds of bedding plants will grow and bloom admirably in windows during the summer season. A very effective and gratifying display can be made by sowing different kinds of annuals in boxes made to fit and affixed to the outside of the window. Nasturtiums, Sweet Peas, Esch-

scholtzias, Mignonette, Phlox Drummondi, and such free-growing persistent-blooming plants, when thus grown make a dwelling very pleasant to the eye. This method of floral decoration is not nearly so much adopted as it should be; the cost of a box or two and the necessary fittings, as well as the small amount of seed required to sow them, is very trifling, the cultural care, too, being of the simplest. Windows facing the north and east are most suitable for boxes, inasmuch as they there get only the morning and afternoon sun; and, being shielded from the fierce noonday heat, the flowers last longer in perfection. For a northern aspect there is no more beautiful plant than the common Moneywort; when well grown it forms a drapery of lustrous green and bright yellow, such as is scarcely equalled by any other plant. In windows facing the north nothing will give more satisfaction than Ferns and Mosses, which, at all times lovely, acquire additional luxuriance and beauty in just those very places where most other plants refuse to flourish. Any of the following may be selected, they being all of fairly easy culture:—Asplenium bulbiferum, Adiantum Capillus-Veneris and cuneatum, Pteris cretica and scaberula, Onychium japonicum, Davallia Novæ-Zealandiæ, Niphotolus Lingua, and Selaginella denticulata. Succulent plants should not be omitted, as they afford variety, give but little trouble, and are really interesting; they must, however, be grown where they get the full heat of the sun. Many of the old-fashioned plants, such as the Candle-plant and the Partridge-breasted Aloe, are now but seldom seen. They are, however, very distinct in manner of growth, and deserve a little more attention than they now get. Vallota purpurea is a handsome, evergreen, bulbous-flowering plant which any one may grow. Campanula Barrelieri is a pretty little trailing plant suitable for a small basket. I once saw a beautifully flowered specimen of it hanging on the outside of a window in a crowded part of London. Saxifraga sarmentosa and Cactus flabelliformis may be both employed in the same way—the one in a shady situation, the other in the full sun. The plants above enumerated may all be cultivated and kept in health in the dwelling-house. There are, of course, a great number which may be introduced for a time into apartments but which cannot be retained therein without injury; but of these it is not my intention to treat. The owner of a glasshouse will, of course, not need to grow these plants in the windows of his residence.—J. B. C.

The Night-scented Stock.—Amongst night-flowering and night-scented plants this is one of the best. Its flowers, being of a dull colour, would probably be passed by unnoticed were it not for the delicious perfume which they emit as soon as the sun goes down, and which claim for them a place in balcony and window gardens, where their value is soon recognised. Plants with either scented leaves or flowers are great favourites here, but the prevailing fashion of adorning gardens as if sight were the only sense to be appealed to has driven out of cultivation many plants that once were held in high esteem; their unobtrusive hues would be lost amongst the glaring clouds of scarlet Geraniums and similar showy plants, whilst the foliage of many does not adapt them for the sub-tropical department. In balcony and window-boxes and borders, however, such plants are at home, and their fragrance is always welcome as it steals through the open window on the morning breeze or in the calm of a summer's evening. The Heliotrope, Stock, Balm of Gilead, Mignonette, Musk, Aloysia citriodora, and scented-leaf Geraniums are all thoroughly adapted for purposes such as these. It strikes freely by means of cuttings, or may be raised from seed, and only requires the protection of a cold house or pit in winter. It will succeed in any good light soil, and will flower in great abundance with a small amount of attention.—J. G. H.

Birds and Peas.—Place wooden pegs at each corner of the bed; also two pegs in the middle of the bed, one on each side of the row; stretch white cotton from corner to corner, so as to form diagonals; recross to half-length pegs. The birds do not touch my Peas treated this way.—R. K.

HARDY FERNS IN GARDENS.

In most gardens there are situations which, owing to perpetual shade through buildings or trees, are found extremely difficult to embellish satisfactorily. Places of this description occur frequently in the neighbourhood of the dwelling-house, and are often a source of vexation, as the majority of flowering and fine-foliaged plants will not thrive therein. For such localities hardy Ferns are the most suitable occupants, inasmuch as the self-same conditions which prove so fatal to the well-being of the majority of ornamental plants are just those which enable them to maintain themselves in health and luxuriance. The construction of a Fernery is often supposed to entail a considerable amount of labour and expense, and it is this consideration which deters many from undertaking the culture of hardy Ferns. The Fern tribe is a large and varied one, and if it is desired to cultivate a large variety, then, undoubtedly, a good amount of forethought and care will be necessary to ensure success. There is, however, a considerably large class which is really hardy in every sense of the word, inasmuch as they will thrive in almost any situation, and require but an ordinary amount of care to be taken in planting. And amongst these are fortunately to be found great variety and exquisite beauty; they are, therefore, all that can be desired for our purpose. Many varieties of Lastrea, Asplenium, Scolopendrium, and Polypodium will

Cave for the Killarney Fern in Yorkshire.

flourish in the most ordinary garden soil, and can hardly be excelled in elegance of form and diversity of growth by the more tender kinds. They may be easily procured at a cheap rate of any nurseryman, and some of them, such as the common Polypody, the male and Lady Fern, are to be found plentifully in moist hedgerows, from whence they may be safely removed in early spring before growth commences. These varieties are mostly strong growers; they should therefore, be so planted that they are not stinted in the way of nourishment. Ferneries upon a small scale are apt to dry up in hot weather, and the occupants fail to obtain that luxuriance which constitutes one of the greatest charms of the Fern tribe. Although something in the way of burrs, stumps, or sandstone is necessary to keep the soil open, yet this kind of material should be introduced in the present instance merely to effect that purpose, leaving as great a bulk of mould as is consistent with good drainage. The cheapest material that can be employed is the root stumps of trees. In country districts hedges are being grubbed up occasionally, and a good cartload may be purchased for a few shillings. Those living in the neighbourhood of populous towns could arrange with some friend in a rural district to consign a load to them as an opportunity might occur of procuring them. They are admirably adapted for the purpose, and not only serve to efficiently drain the soil in which they are placed, but appear to retain in themselves a certain amount of moisture, even in very dry weather. Root stumps are often objected to on the ground that they ultimately rot away. That is, however, no detriment in the present case, as by the time they do so, the plants are well established, will have filled the soil full of fibre, and be eager to feed upon the decaying matter which is thus presented to them. As to soil, there is no necessity to be at all particular. If some turfy loam or rough peat can be easily procured, they will be benefited by an admixture of it. Ordinary garden soil, with some of the roughly-sifted portion of the refuse-heap, will meet their requirements. No garden can be considered properly furnished without Ferns of some sort, and many a dark dingy corner may be simply and almost inexpensively beautified by them. Where winter verdure is desired, the evergreen kinds need only be employed. In a general way, however, they should be used with the deciduous ones, as they contrast so beautifully when bursting into growth in spring.

J. C.

The Killarney Fern.—So many notes and questions have appeared in Gardening in respect to this Fern, that we give the accompanying illustration from Robinson's "Alpine Flowers," to show that it may be grown successfully without the aid of glass. The illustration shows the entrance to Mr. Backhouse's cave for growing this plant. It is in a deep recess, perfectly sheltered and surrounded by high rocks and banks clothed with vegetation. Here in the darkness grows the Killarney Fern, Hart's-tongue, and other hardy kinds, guarding the entrance. It is likely that various kinds of New Zealand Trichomanes and Filmy Ferns will prove as hardy as the Killarney Fern, and, if so, this is likely to be one of the most attractive and interesting of all phases of outdoor gardening.

Birds in Gardens.—Those who recommend the indiscriminate destruction of small birds can never have taken the trouble to study the habits of the different species that inhabit our island—a difference, so far as the gardener is concerned, that is not always determinable by the individual species of birds, for some will attack particular crops in one part of the kingdom that escape injury in others. There is also a difference in the stage of growth in which a particular crop may be when it is attacked by some species of birds in different localities. Sparrows, for instance, in some parts of the country begin their work of destruction upon Peas the moment they appear above ground, nipping the points of the shoots; but if kept from them until the Peas get fairly above ground, no further molestation will be experienced until the crop is ready for gathering. In other places they never cease their attacks from the time the Peas are up until they are removed from the ground. In my garden they keep at them all through the season, nipping out the leading points, and as soon as the flowers are formed picking them out from the leaves with which they are enclosed; and if means were not taken to prevent them we should never have a Pea to gather. In the Cheshire market gardens and in the neighbourhood of Manchester they will frequently make an attack on the Onion crop as soon as it appears above ground, pulling the young plants up, simply through, to all appearance, a disposition to do mischief, for they leave the young plant, seed and all, lying on the ground entire, while in no other part of the country have I seen them molest Onions. My winter Lettuces are often attacked about the beginning of March, and if not made unpalatable by a dressing of soot they destroy the whole crop. Crocuses they never allow to open, as they attack the flowers as soon as they show colour, pulling the petals to pieces so as to get at the pollen, for which they seem to have a particular liking. Gooseberry and Currant buds suffer as much in this neighbourhood from sparrows as they do in some localities from bullfinches. Cotton, such as is used for dip-candle wicks, ravelled out singly, and strung loosely so as to be moved by the wind over anything they molest, I have always found sufficient to scare them off; even after the Peas are sticked I find it necessary to use this. Chaffinches and greenfinches take indiscriminately the seeds of all the Cabbage family. At one time I used netting to protect these seeds until they were sufficiently large to be out of danger; but it is a troublesome job,

as nothing you can do will deter them, and if there is a possibility of getting under the net, or through it, you generally have the mortification of seeing your young crop destroyed. I have, for a good many years, coated the whole of the seeds of this description with red lead, and never since have I lost a crop. I have heard, however, that some who have tried this have found it to be ineffectual; but I suspect the lead was not properly applied. The seed should be damped, but not made too wet, and thoroughly coated with dry powdered lead, which should be allowed to dry on before the seed is sown, when it will stick so fast that if any of the seed lies on the surface of the ground the rain will not wash it off. The house sparrow and the finches are all but an unmixed evil in gardens; all the small soft-billed birds should be encouraged as much as possible; the larger species—blackbirds and thrushes—notwithstanding the quantities of snails and other pests they destroy, require to be kept within reasonable limits, or the production of fruit, where it is required in quantities, without incurring expense in nets and other protecting material equal to the value of the fruit, is an impossibility. Those who advocate the protection of all small birds forget that kestrels, merlins, sparrow-hawks, jays, and magpies—Nature's instruments for maintaining the wanted balance in the smaller feathered tribes—are all but exterminated; hence the necessity for reasonable reduction in their numbers by other means.—B. A., *Middlesex*.

ANSWERS TO QUERIES.

1962.—**To Make a Garden Pay.**—That a garden of the size mentioned can and does in some hands realise a profit is certain; but the willingness to work hard must be blended with forethought and knowledge of the requirements of a neighbourhood. I know a man that has occupied all his life since he grew up to manhood a garden of about an acre, and from that acre of land he has produced enough to bring up a family of four children; but his Radishes, of which he grew vast numbers, were always first in the market, as were also his Lettuces and ridge Cucumbers, Vegetable Marrows, &c. To have crops coming on when there is little or no demand for them cannot yield a profit; and mixing up the supply of a private family with market gardening is also a drawback, as things have to be grown in dribblets to produce a succession. The market gardener only aims at getting his crops ready when they make the best price.—E. H.

1955.—**Rats in a Country House.**—I live in a country house, and when I first came here rats and mice were a serious nuisance. I, however, got rid of the lot in time. I tried several rat poisons without effect; ultimately I procured some paste from a chemist (I withhold his name for fear it may be looked upon as "touting" for him, although I shall have pleasure in giving it). I spread it on some bread and butter, cut it in squares, and laid it in the runs. Next morning I found dead rats in all directions. Nevertheless, there is a serious objection to poisoning rats, as the bodies rot and become very offensive. I therefore procured a little Scotch terrier, a thorough good ratter, and an additional cat. Since then I have not seen a rat nearer the house than the piggery.—RUSTIC.

1895.—**Green Garden Pots.**—To clean garden pots as good as new, get 1 quart of hydrochloric acid and mix with about 14 gallons of water in a wooden or earthenware vessel, and lay the pots in for six hours or more; then rub them with a piece of rough cloth. Wash well in clean water and leave them to dry. I have done about 300 pots, and find this plan answers admirably; I have also recommended it to my friends, who are much pleased with the result. The pots are fit for use as soon as dry. The price of the acid is 1s. for 8 lb., which will clean about 2 gross of pots of various sizes.—T. BROWN.

1986.—**Watercresses.**—These may be grown by turning the overflow water from a well along a channel or over a bed of any size or shape planted with roots or cuttings of Watercresses in spring, when they are plentiful. The bed may be excavated 1 ft. or so deep, some good soil placed in the bottom, made firm, the cuttings dibbled in, and the water permitted to flow gently in on one side, and make its exit at the opposite one. Watercresses may easily be grown by planting cuttings in a shady border, and keeping them moist; or they may be grown under hand-lights anywhere, shading during sunshine; they be also be successfully grown in pans or pots in the greenhouse or window; and a succession may be kept up throughout the year as easily as Mustard and Cress.—E. H.

2030.—**How to Arrange a Garden with Flowers.**—The prettiest designs for beds are circles, or ovals, or figures in which curved lines predominate. There is no book that will thoroughly teach gardening or any other business. Books are aids, and often remove a stumbling block from our path; but reading and experience should go hand in hand. It is too late now to think of spring flowers, but there is yet time to sow Sweet Peas, which may be done in circular patches. Gladiolas may yet be planted; mark the place with a short stick to prevent injury being done to the young growths. For centres and backgrounds, Hollyhocks, Tritomas, tall Phloxes, and Delphiniums may yet be planted; and for late autumn display, Rudbeckias, Japanese Anemones (white and red), Sedum spectablis, and Michaelmas Daisies will give freshness and beauty amid the falling leaves. All kinds of annual and other flowers may be sown now thinly in patches; amongst others may be named Candytufts (red, white, and purple), Clarkia pulchella, Nemophilla insignis, Collinsia bicolor, Calliopsis coronata, Virginian Stocks, German Ten-week Stocks, German Asters, Sweet Williams, Snapdragons, &c. For edgings the Golden Feather is bright and pleasing; Sedum glaucum makes a neat grey edging, Cerastium tomentosum a good white, and Dell's Crimson Beet, sown now, not a bad dark crimson for those who are not prejudiced against vegetables among the flowers, and the roots are good for use in winter if stored before frost comes. Lay the ground out as simply as possible, avoiding intricate figures; place a good-sized circle in the centre, a good path of turf or gravel round it; and a border round the outside would be a good arrangement, and give easy access to every part.—H.

1964.—**Making a Lawn.**—"Alpha" will find several articles on this subject in GARDENING ILLUSTRATED, Vol. I. If good turf cannot be got, get good seed. The ground should be dug a uniform depth, and made quite level by trampling first and rolling afterwards; then rake the surface, removing all coarse stones; sow the seed thickly; cover with some fine soil, and roll it in firmly. If sparrows are plentiful near the ground you had better put them some food at night, so that they can breakfast without your Grass seed.—RUSTIC.

1838.—**Ants on Lawns.**—I have always found that camphor water will drive ants away. It can be made by putting an ounce or two of camphor in a stone bottle holding about a gallon of water; let it stand for three or four days, pour off, and use. If the camphor is not all dissolved, the bottle can be refilled, as the water will only absorb a certain quantity. Should the ants be indoors, or anywhere else that water cannot be used, dry camphor laid about their haunts will answer the same purpose.—H. W.

1975.—**Parsley for Exhibition.**—Parsley if sown in a hotbed frame or a moderately warm house in February will by the first week in April be fully 1 in. high. The plants should then be potted off singly into 3-in. pots, and grown on in them for a month, gradually hardening them off. Plant out early in May in a good bed or border about 18 in. apart; shade a little till established, after which they will begin to grow vigorously. Water liberally with weak liquid manure, say once a week, but withhold it the week previous to the show. The day before the plants are required for exhibition, lift them with a large ball of earth; have an 8-in. or 9-in. pot at hand, and when you have reduced the ball sufficiently, allow it to drop into the pot. If this be in the month of September, you may consider you have a good plant if the outside leaves project 3 in. over the pot all round, and it is finely curled; but remember curl is the point more than size. If "John Brown" is required to have only one plant in a pot, by following these directions he ought to succeed; but use a pot in proportion to the size of plant at the time.—ECOSSAIS.

1960.—**Culture of Sunflowers.**—Sow the seed at once in gentle heat; harden the plants in due course, and pot them into good soil in clumps of three or more, about 6 in. apart, surrounding each plant closely with peat charcoal dust if you can get it, to prevent the ravages of the slugs; they are partial to young Sunflowers. Procure your seed from a good house, and ask for the double kind; the single ones are not worth growing. There is not the slightest difficulty in cultivating this plant. If you keep poultry, the birds will eat and enjoy a few of the seeds occasionally.—RUSTIC.

1963.—**House Slops as Liquid Manure.**—I am a strong advocate for the use of peat charcoal, and, having recommended it in several of my contributions, I may here perhaps answer "J. T.'s" inquiry and that of "Victis" at the same time. Some months ago I had several bags of charcoal left at my place by mere chance, and having heard much respecting its value for many purposes, I resolved to try it. I put it under my horses' beds to absorb the moisture, and then put it into a tub (half-full) to receive house slops, in the pigsties, &c. It keeps the stable sweet; it prevents any unpleasants mell from the house slops; and afterwards, so far as I can see, makes a valuable manure. I have used it in many ways with my crops this season, and shall be able to write more fully upon its merits in a few months' time. I may, however, say this with confidence—slugs do not like it; therefore I use it freely when transplanting Lettuce or other favourite food of these pests. It has this advantage over soot or lime—it does not injure the most delicate plant by contact. I am unable to say where peat charcoal can be obtained at present; but I am given to understand that large works are being erected at Dartmoor for the purpose of making it; so that in a short time, if all be true I have heard about it, it will become a valuable article of commerce, obtainable in London or elsewhere.—RUSTIC.

1952.—**Slugs in Greenhouses.**—Try some air-slaked lime—that is, lime which has fallen to a powder by exposure to the air. Sprinkle this about over night where infested with slugs. Remove in the morning. Repeat the operation, and you will soon be quit of the unwelcome visitors.—SAXON DEYNE.

1973.—**Soot in Gardens.**—Why bury your soot in the garden? Dig it up and mix well with the soil; it will then be made immediately useful without any waiting before planting in any particular spot.—SAXON DEYNE.

1975.—**Soot-water for Plants.**—Tie soot up in a piece of coarse open calico or old muslin, then attach it to a stone or brickbat, and put in a tub or other suitable vessel. Fill up with water, and allow to stand for a day or two; then stir well several times. Let it settle, and use the clear liquid; but be careful that it is not too strong.—SAXON DEYNE.

1985.—**Glass for a Conservatory.**—If expense is not an object, plate glass may be used, and I think the plants will grow equally as well with ordinary sheet glass, but certainly no better; and if no better, why use more costly material?—SAXON DEYNE.

1971.—**Pruning Jasmines and Berberis.**—The Jasmines may be cut back now to the point where the buds are breaking, or lower if necessary. A somewhat similar treatment will suit the Barberries too—keeping in view the shape the shrubs are required to assume to maintain a symmetrical outline.—E. H.

1964.—**Making a Lawn.**—If the surface has been well cultivated and made fine and friable, rake off all stones that can be gathered up with a fine rake. If the surface be loose, firm it by treading or drawing a roller over it; then level it again with the rake. Sow the Grass seeds thickly, so that the surface appears dotted all over with them. Rake again and roll. The work should be done in fine weather.—E. H.

1985.—**Glass for Conservatory.**—Plate glass, if clear, is as good for plant growing as any other. Probably what is called Hartley's rough plate is meant in this case; and, though I should not object to the roof being glazed with it, I should prefer the upright sashes glazed with clear glass, as it admits more light, and in such a position shade would be unnecessary.—E. H.

1974.—**Soot-water for Plants.**—Tie the soot up in a coarse bag, and sink it in water. A piece of old canvas will do.—E. H.

1963.—**House Slops as Liquid Manure.**—The house slops may be diluted with water if too strong, and toned down so as to suit any crop. They may also be poured over any vacant plot of land that requires manure as they are, or over the roots of any fruit tree that looks weakly or exhausted. I have seen old worn-out Apple trees much benefited by such applications.—E. H.

1973.—**Soot in Gardens.**—Supposing the quantity of soot named was placed in one spot in autumn, scattered a little, and dug in with a fork or spade, the ground may be cropped now. If the soot was buried in one heap the better plan would be to lift it out and scatter it now before cropping the land.—E. H.

2048.—**Woodlice in Frames.**—Place a toad or two in the frames. Lay a few empty pots about on their sides, into which a wisp of hay has been thrust loosely; the woodlice will hide in the pots; or the pots may contain a slice or two of boiled Potato as a bait to attract them. Once or twice a day the pots should be examined and the insects killed.—E. H.

1934.—**Unhealthy Pear Leaves.**—If the trees are old and exhausted, or if the roots have penetrated a bad ungenial subsoil, the stagnation of the trees' system has prepared them for the reception of some fungoid attack which has caused the leaves to become discoloured, and if not arrested will ultimately kill the trees. Work in some fresh turfy loam round the roots, and mulch to keep near the surface. If the root-pruning does not produce the desired effect, cut back the branches and let up new heads.—E. H.

1935. — **Lobelias for Bedding.** — Lobelia erinus compacta is quite as suitable for an edging as L. Emperor William. Silene pendula and compacta are both rather tall for edgings; the latter is the best. White, blue, or yellow would look well with the Silene, and scarlet or yellow with the Lobelias.

1283.—**American Blackberries.**—An article on the culture of the Parsley-leaved American Blackberry or Bramble, appeared in GARDENING for May 17th 1879. There are several varieties besides those, lately introduced into this country. The advantage claimed for them is that they come into use after all our old kitchen fruits are over for the season.—J. D.

1969.—**Painting Greenhouse Floors.**—Do not attempt painting tiles, especially now they are laid down, and, of course, damp, which would inevitably make a mess of the paint. If a stiff besom and water will not keep your greenhouse floor clean, then I fear there is no help but to "grin and bear it."—SAXON DEYNE.

1973.—**Parsley for Exhibition.**—I have had good pots of Parsley by sowing the seeds in gentle heat in spring, potting off singly when large enough into 2½-in. pots, and to keep lifting them on as more root-space is required, until they occupy 6-in. or 8-in. pots. If a large potful is required, when the plants have filled 4-in. pots pack half-a-dozen into a 12-in. pot. Use good rich soil, containing a little burnt earth or some wood ashes.—E. H.

1980.—**Newly-made Lawns.**—Give a top-dressing now of fine-sifted wood ashes. It will encourage the finer Grasses to take the place of the eradicated Buttercups. Persevere with the spud and the roller.—E. H.

2051.—**Flowering Shrubs for Front of House.** If for training on house, plant Pyrus japonica and Lonicera grata. If to plant on Grass in front (and the question does not say which) plant Berberis Darwini and Arbutus Unedo (evergreen), or Magnolia purpurea and Venetian Sumach (deciduous).—E. H.

2052 —**Rhododendrons.**—Plant at once. The hybrids of Ponticum are the are the hardiest and cheapest; the Catawbiense hybrids are also hardy, and good for grouping. Among the choice-named kinds the following half-dozen are good and distinct—Blandyanum, Charles Dickens, Cyaneum, maculatum, John Waterer, perspicuum.—E. H.

2097.—**Garden Forget-me-not.**—If the plant mentioned bears a brilliant blue flower, with a white centre and very pretty ovate petiolate leaves, it is Omphalodes verna, and can be purchased at most nurseries. —MARK.

1956.—**Vines on Long-rod System.**—I should advise "G. B. M.," as his Vine is certainly ruined, and no crop can be expected at all this year, to rub off and break away all and everything which has been grown since winter, and continue to do so as it breaks afresh; thus encourage the lowest break to furnish a young rod for next year, which will ripen good wood for a sure crop for 1881, which can be got by no other mode. The following year treat this new rod as you like—spur or long-rod system. In winter cut out the old wood, not before; give plenty of ventilation.—T. G. K.

2061.—**Water for Greenhouse Plants.**—Is it necessary at this season (and during summer) when watering plants in a greehouse to have the water about same temperature as greenhouse? In winter I know there should be warm water added.—A. THOMPSON. [Water from a pump or well is not good for plants at any time. If soft water from a pond or open tank cannot be had, the best way is to fill a tub in the morning and place it in the sun all day. The water will then be ready for the plants in the evening, at which time all watering is best done through the summer months.]

2065.—**Dog's-tooth Violet.**—What is the botanical name of this? and is it related to the Cyclamen? [The common Dog's-tooth Violet is Erythronium dens canis; it is a native of southern Europe. The American species is Erythronium americana. The Dog's-tooth Violet belongs to a genus of Liliaceæ, and the Cyclamen to the order Primulaceæ.]

2066.—**Cultivating the Oleander.**—The flowers of my Oleander drop off, and last year it did not flower at all. How should I treat it?—KITTY. [The plant should be shifted in March into a compost of two-thirds sandy loam and one-third leaf-mould, keeping it in rather a close temperature for a time, but moving it when fairly established to a maximum of sun and air. An unheated greenhouse or frame is the best place for it. During the summer months copious supplies of water must be given; and if in hot weather, when the pots is full of roots, it is placed in a saucer, the plant will be much benefited. Occasional waterings with weak liquid manure will also prove beneficial. Cuttings may be taken in August of the current season's growth, inserting them in sandy soil and placing them in a close frame until rooted.]

2067.—**Azaleas for Greenhouse.**—I have a "poor man's greenhouse," which I heat with a paraffin stove; and during the last two severe winters I have managed to keep my plants, and I have now in flower Cinerarias, Primulas, &c. I want to know if I can keep Azaleas in such a house. If so, how are they propagated?—SUFFOLK. [If you could winter Primulas you can winter Azaleas in the house you mention. Your best plan will be to purchase a few small plants. Propagating Azaleas entails a good deal of time and skill.]

2063.—**Clematises and Jasmines.**—I have two of these 6 in. or 8 in. high, which were raised in heat. Should I harden them off before planting them out; and what sort of soil is best for them? and are they perfectly hardy to grow without protection?—NORFOLK. [Harden them off and afterwards plant them in sandy soil, to which some leaf-mould or rotten manure has been added. They are perfectly hardy, but it is a good plan to put a coat of ashes a few inches deep round the roots in winter.]

2069.—**Planting Hardy Flowers.**—How far apart must the following be planted in beds:—Petunias, Heliotropes, Ageratums, Alternantheras, Iresines? [The first three from 15 in. to 18 in. if they are to be pegged down; if not, they may be a little closer. Iresines 9 in.; Alternantheras 4 in.]

2070.—**Planting out Annuals, &c.**—How soon is it safe to put seedling Arctotis and Godetia and Mentone Daisies from cold frame into beds?—A. H. C. [It is safe now, if you harden them off first by giving all the air possible.]

2071.—**Yellow Daisies.**—What is the name and what the culture of the large yellow Daisies now to be seen in bunches in Covent Garden? Are they hardy?—A. H. C. [A variety of the Paris Daisy. Its name is Chrysanthemum frutescens Etoile d'Or. It is not hardy.]

2072.—**Cucumbers for Greenhouse.**—At what time should Cucumber seeds be sown to produce plants to grow in a greenhouse without heat? My place for them is about 6 ft. long and 2 ft. broad. How many plants will it grow for convenience. I am going to train them up the roof.—PRINTER. [Sow the seeds at once singly in small pots of light soil. Place a hand-light or bell-glass over them, or put them in a box with a sheet of glass over the top. Plant out when large enough, which will be in three or four weeks' time. Three good plants will be plenty for your space.]

2073.—**Getting Rid of Weeds.**—How can I get rid of a noxious weed commonly called Horsepipe; it comes up from a depth of 2 ft. on some Potato ground in my garden?—PELSALE. [Chop off the tops as often as they appear; the roots will then die.]

Raising Calceolarias.—*J. W. C.*—The seed of herbaceous Calceolarias may be sown any time between April and September, according to whether large or small plants are required, or when they are wanted to bloom.

Gloxinias in Cucumber House.—*E. N.*—A Cucumber house is too damp for Gloxinias to flower in. They would grow well in such a place, but when commencing to flower they want a light airy shelf near the glass.

Shading a Conservatory.—What is the cheapest method of shading the top of a conservatory?—MARY S. [Paint it with whiting and skim milk, mixed to the consistency of paint; or get a tin of "summer cloud" from a seed shop.

Gas in Greenhouse.—*W.*—Gas is at all times very injurious to plant life.

QUERIES.

Before sending queries it is well to consult the first volume of GARDENING, *which contains an immense number of practical articles and questions answered by men well acquainted with the subject.*

2074.—**Aponogeton distachyon not Flowering.**—I have a plant of this which has been growing at the bottom of an aquarium in a 4-in. pot for the last two years. It sends up very robust leaves, but no flowers have ever yet appeared. Water is occasionally running in from a fountain, and the sun is upon it about three hours of a day. Could any reader give me the reason why it does not flower? Would it be better for re-potting into a smaller pot in stiff loam?—AMATEUR.

2075.—**Mustard and Cress on Flannel.**—Will any one tell me the best and prettiest way to grow Mustard and Cress on flannel?—A. B. C.

2076.—**Annuals and Perennials for Rose beds.**—Will any reader say what annuals or perennials would look best sown between standard Rose trees? I do not wish for any which require to be raised in a hotbed, but sown in the open ground.—H. E. T.

2077.—**Celery as a Remedy for Rheumatism.**—Last year's Celery crop is nearly finished. We have found it to be very useful in rheumatic cases, and shall be much obliged if any of your readers can tell us whether an infusion made with Celery seed, with which our cook flavours her soups at this time, would be useful; and if so, how much Celery seed should be put into a pint of boiling water, the infusion to be taken twice a day as a medicine?—G.

2078.—**Non-flowering English Plants in India.**—Your many articles on successful horticulture, the preparing of the different soils, temperature, transplanting, &c., I have not only read with interest, but successfully, in many instances, carried out. I write from Mercara, situated at the summit of one of the ranges of the India Western Ghauts, at the high elevation of 4000 ft.; the climate during ten months in the year closely approximates to that of the south of England in summer and autumn, with a temperature seldom higher than 70°, and never lower than 50°. Vegetables and flowers of certain kinds grow well, either from seeds procured from the Government gardens at Bangalore, Central India, or from seeds exported from England. The sweet-scented Violet, Carnations, Pinks, Asters, and many annuals grow and blossom profusely; but there are two home plants in particular which persistently refuse to be acclimatised, viz., the Wallflower and the Sweet William. For the past two years I have raised the seedlings up in leaf-mould and river sand, transplanted them to the open, where they have grown larger and larger in size, but without any buds or blossoms. The Wallflower plant has been living in the open for eighteen months, has withstood two wet monsoons of 250 in. and 197 in. rainfall respectively, and afterwards enjoyed more genial weather: through all it grew to a height of 2 ft. 10 in., abundance of foliage, but no blossom. I shall be happy to adopt any plan your readers could suggest whereby the obstinacy of the plants non-flowering could be overcome, for where Cucumbers, Celery, and Watercress, &c., thrive the Wallflower and Sweet William should blossom.—M. WOODHOUSE.

2079.—**A Suggestion for Hotbed Material.**—I have often noticed the great heat developed in the heaps of refuse or sweepings of machine makers' shops, consisting of oiled cotton waste, mixed with iron filings and turnings. Could not this material be utilised for hotbeds and propagating frames in the neighbourhood of manufacturing towns, where it could be had for the carting? A few experiments would settle whether the heat could be made steady and lasting, and whether the fumes exhaled would be injurious to plants.—J. D.

2080.—**Glazing Without Putty.**—Will "Arundo" kindly say where Hellewell's patent clips are to be got, and whether the glass squares should overlap each other at all, or be laid flat end to end? If the latter, there must, I suppose, be a slight space between them for the clip; and would not the wet get in there? I presume the purlines are simply squared, and have no rabbets at all. Would this system do for the upright part of the house —F. H.

2081.—**Cinerarias after Flowering.**—Would any reader tell me how to manage Cinerarias after flowering? and the best way to keep them for flowering next year? —C. J. B.

2082.—**Soil for Rhododendrons.**—I have a bed of (chiefly) alluvial soil in which I want to plant Rhododendrons. Are they likely to succeed in such soil? Will some one give me the names of about six kinds, most likely to do well in this locality, and with some variety of colours? —A. B. G., *Wisbech.*

2083.—**Stand for Exhibition Flowers.**—Will some one give me particulars of what they think the best and most convenient stand for exhibiting blooms of Pansies, Tulips, &c., and the simplest way to make one? I should have to procure the stand at once.—ARTHUR.

2084.—**Gnats Stinging.**—Can any one give me a receipt for the prevention of stings from these insects during summer?—PAX.

2085.—**Heating by Paraffin.**—By placing the paraffin lamp or stove outside the greenhouse how is sufficient heat got inside? I am compelled to use paraffin, as I am away from home twelve hours each day, therefore can give it no attention during that time.—W. B.

2086.—**Propagating Frames.**—Can any of your readers inform me if they have had any practical experience of Rippengille's frames for raising seeds and cuttings? or, if not, how could a cheap one be made?—M. P.

2087.—**Raising Seeds**—Can Loaca and Cobœa scandens be raised from seed without bottom heat? How soon will they blossom?—W. S.

2088.—**Treatment of Daphnes.**—How should I deal with evergreen Daphnes, which have flowered in pots in a greenhouse this spring, to bring them on into good flowering condition again next spring?—A CONSTANT READER.

2089.—**Dandelion for Salads.**—I have heard that Dandelion is a useful addition to the salad bowl. Is the common wild Dandelion, which grows in fields, &c., fit to eat, or must it be cultivated from seed as a vegetable? If so, I should be glad to have directions as to its culture? —AUREUS SCARABEUS.

2090.—**Ferns in Vineries.**—I have established a small Fernery in my greenhouse under a Vine. The Ferns do very well, but they are all of the common kinds, and lose their foliage in the winter. Will some one name a few evergreen Ferns that will stand a winter temperature of from 40° to 60°? My greenhouse is warmed by a brick flue, but the fire is only lighted on very cold nights, to keep the frost out. I have kept Lycopodiums green and growing all through last winter, also some Geraniums and Fuchsias.—SUBSCRIBER.

2091.—**Climbers for House Roof.**—Can any reader suggest a creeper, or other easily procured plant, to cover the roof of an outhouse. The plant must be grown on the roof, not from the ground; also a nice trailer for trellis 6 ft. high.—ANON.

2092.—**Cultivating Blackberries.**—Can any one tell me the best method of cultivating the Blackberry? I have had a root in my garden for many years which has yielded good fruit, but I think it might be much improved by proper cultivation. I train it against the pales, cut away all suckers, and trim it every winter.—HORTUS.

2093.—**Propagation of Clematis.**—How and when should I propagate Clematis Jackmanni, and its kindred?—A. H. C.

2094.—**Propagating Cistus.**—How should I propagate dwarf shrubby Cistus? I have a border edged with three colours of them, which has been a great success for many years, but age or the cold winter has made them very shabby this year, only the points being green.—A. H. C

2095.—**Slugs in Frames.**—Can any reader give a receipt for the destruction of slugs in a cold frame and greenhouse?—NEMO.

2096.—**Geraniums not Flowering.**—I have a glass structure (small) in which I have placed several Geraniums, &c., and I find that the flowers do not open fairly; in fact, they only partially open. Can any one suggest a cause and remedy?—E. C. L.

2097.—**Planting Flower Beds.**—Having just gone into a house to which is attached a garden laid out in flower-beds, and, being totally ignorant of gardening, I would be glad to know whether it is too late to sow seeds

in the open (I having no greenhouse) to blossom this year; if not, what had I better sow? The works on gardening which I have consulted do not give me the requisite information.—IGNORAMUS.

POULTRY.

FEATHER-PLUCKING.

MANY remedies and suggestions have been made at different times as to the best means to be adopted either for curing or preventing the troublesome and disgusting habit of feather-plucking, so common amongst fowls when kept in confinement. Various have been the theories propounded as to how the birds first acquired the habit; but these, like many other theories, were often very wide of the true cause. It may, therefore, be useful if we devote a little space to the consideration of this disease—for such it really becomes—especially as we find that some of our readers are troubled by their fowls plucking and disfiguring one another. When birds have their liberty, there feather-plucking and eating is totally unknown; and even when birds have learned to do this, on being restored to liberty they at once discontinue the practice. But when kept in small places, no matter what the variety may be, sooner or later this scourge—harmless so far as the health of the birds is concerned—is almost certain to make its appearance unless the owner is particularly careful and attentive in managing his fowls. We have only to consider what the natural habits of fowls are, and we then have the cause of their eating each others' feathers when confined, and are also able to devise means by which this may be stopped and prevented in the future. When fowls are kept under favourable conditions, with an unlimited run, we find that during the greater part of the day they are occupied mostly in searching for food; and when their appetites are satisfied, and they have become tired, then they retire to some quiet or secluded spot to arrange their feathers. At the conclusion of their toilet they will probably take a few minutes' doze, after which they awake, and renew their hunting expedition in search of insects and other kinds of food. Thus they are fully occupied, in a healthy and natural manner. But contrast these conditions with those under which specimens kept in confinement have to endure, with nothing to engage their attention or to amuse them, and only a few yards in which to exercise their legs, and still less space to stretch their wings.

Kept under these artificial conditions, it is not surprising if fowls, in common with man, soon fall into bad habits and acquire unnatural and morbid tastes, which in the case of the former generally develops either into feather-plucking and feather-eating, comb-pecking, or even to the partial eating away of parts of one another's bodies. To some it may hardly seem credible to hear of one bird partly devouring another, but such cases are by no means rare where fowls are confined in small places with nothing to occupy their attention. We have met with cases in which the birds have been so cleanly plucked as to leave no feathers on the body except those in the tail, wings, and a few on the head and the back of the neck. In others we have seen parts of the skin eaten away, so rapacious do hens become—for these are the culprits—not from any want of proper food, but solely because they were huddled together in small plaees with nothing to amuse them. During the winter, when the hens are not laying, these morbid cravings for injuring one another are partially if not quite discontinued; but as the time approaches for them to recommence laying, then the desire is again renewed.

From the preceding remarks it will be seen that we attribute feather-plucking and similar other unnatural habits solely to confining birds in small and limited runs. We are aware that other writers on poultry have affirmed that feeding with too much animal food has produced the same unsatisfactory result. We, however, know from practical experience that however much animal food may be given, fowls having their liberty never pluck one another. And here we have at once the obvious cure for the evil—occupation and employment for the birds, even when kept in confinement; the bottom of the run laid with loose fine gravel sand or cinder ashes, and the top covered with straw or coarsely cut chaff. Amongst this loose litter well scatter the corn, so that the birds will be obliged to scratch and diligently hunt after every grain. A stump of a Cabbage or Lettuce, or a few leaves tied together and suspended by a string a few feet from the ground, to compel the birds to jump up to get at the green stuff, or a bone with a little meal on it, hung in the same manner, answers very well. Many other dodges will occur to any one who gives the matter a little attention; and by adopting these simple plans much annoyance and disappointment in the keeping of poultry may be prevented.

Weight of Eggs.—I keep fowls for the pleasure of new-laid eggs, and, as your correspondent "H. D." says, there are "eggs and eggs." After trying many sorts, I have for the past three years adopted the Minorcas—non-sitters and splendid egg producers. I put twelve eggs in the scale to-day which averaged 3¼ oz., two of them weighing 4¾ and 5 oz. During last season I had many eggs weighing 4 to 5 oz. from hens two years old.—F. P.

Feeding Sitting Hens.—It is best to take the hen off the nest each morning, and let her have a good supply of Barley and plenty of green food, such as Grass cut from a lawn, Cabbage, or Lettuce leaves. There should always be clean fresh water in abundance, and if the hen is liberally supplied with green food she will not be likely to drink so much water as to be injurious to her. By taking her off the nest each morning and allowing her to dust her feathers amongst some old mortar or cinder ashes, she has an opportunity of relieving herself, and of freeing her body from insects. She then sits more quietly and closer, and makes finer eggs than when these little matters are not attended to.

Chickens Dying.—"Rhoda" should cut away with a pair of sharp scissors the small feathers and the accumulated excrements which have collected around the vent; then bathe the vent with a sponge and warm water, removing all dirt. We fancy there must be something wrong with your feeding: at least it can do no harm to change the diet; and above all see that the ground or the place where the chickens are fed is free from all droppings.

Fowls Losing their Feathers.—Your hen is broody, and when this is the case the feathers on the under part of the body often drop out.

Fowls' Claws coming Off.—The toes of J. Sice's bird have been frost-bitten, and they will not grow again.

Leghorn Fowls.—The Leghorn is a hardy, precocious bird, bearing confinement very well. They, however, in common with the non-sitting varieties when confined too closely, are much addicted to the disgusting habit of plucking out and eating each others' feathers.

Pale-yolked Eggs.—The colour in the yolks of eggs often varies, the same as the colour of the shell; but this is of little consequence so long as the birds lay well and the eggs are good in flavour. The yolks of eggs laid by black coloured birds are often lighter in colour than those obtained from Cochins and Brahmas. Eggs from the latter are generally very dark in colour, and consequently very rich in flavour; in fact, we know of no other variety which approaches these for the richness of their eggs.

Fowls Eating their Eggs.—The best way is to kill them at once and risk purchasing others with more high-bred habits; you cannot cure so vicious a practice in fowls.—E. F.

—— When once fowls have acquired the habit of eating their eggs there is no cure, and unless they are valuable ones they should be killed.

Disease in Fowls.—Chop rue fine, mix it with butter into pills, and give each fowl a pill every day until improvement takes place. External remedies are futile.—A FOWLER.

Eggs for Hatching.—In answer to "E. S. W." as to whether eggs from birds ten months old are fit for hatching, I say Certainly It is, however, generally found that chickens hatched from eggs laid by two or three year old hens turn out bigger and stronger birds.

Eggs not Hatching.—Would "Andalusian" inform me where the egg-tester he spoke of in last week's GARDENING is to be procured? also the reason why eggs are not hatched? My hens only hatch three or four out of a sitting. I find upon breaking them to contain chickens which appear to have been dead a week. I keep thirty-three hens and three roosters, Spanish, Dorking, and Brahma.—POULTRY MAID.

Fowls with Diseased Legs.—I have five pullets and one cock (Brahmas). The pullets are in a healthy condition and lay well; but the cock has something the matter with his legs: they started by turning red and swelling, now they are festering round the stumps of the feathers. The fowls have a large airy house, a run of nine square yards, are fed regularly twice a day, and kept clean. Can any one kindly tell me the cause and cure?—S. D. A.

Brahma Hens Sitting.—What length of time does a Brahma hen keep laying after the brood has been taken from her before she wants to sit again? On the 2nd of February last I put some duck-eggs under her, which she hatched on the 29th; on the 22nd of March I took her away from them and put her along with the other fowls again, and she commenced laying on the 29th. Since then she has laid, say, two eggs every three days, and on Sunday last she laid an enormous one, which weighed 3½ oz.; and I am told they generally lay a large one just before going broody. If this is so I shall be glad to know, as I shall keep a number of her eggs for sitting.—W. G. D.

AQUARIA.

I HAVE read with interest the various articles that have from time to time appeared in GARDENING on the above subject, and, like "W. B.," have myself had some experience in their stocking and management, and therefore venture to offer a few remarks. Your correspondent, H. G. Sunderland, the other week, tells us we must not have a fountain in our aquaria, or the "fresh water will kill the fish." Now an aquarium with a fountain will, by reason of the continual flow of water, not only sustain more life in proportion to its size, but will bear a greater temperature in the room where it stands without distressing the inmates. Next he tells us that Valisneria and Anacharis are the best of plants, but the former looks the best and grows the fastest. Now, while I agree that Valisneria is the best of all plants for an aquarium, I must say that it is not to be compared to Anacharis for rapid growth; indeed, the way in which the latter will spread and choke up a tank is the only drawback to its use; but that can soon be remedied by simply drawing part of it out of the water.

"W. B." (April 17) is more liberal in his selection of fish than "H. G. S.," but he proscribes all beetles; and he says, Do not be persuaded to add "any other insects" to your collection. Specimens of Colymbete, Gyrinus natator, and Hydrous piceous, may be safely trusted in a general tank; indeed, the lively antics of the two former will be a great attraction; and then the curious straw-worm or caddis (larva of Phryganea grandis, caddis fly) is a most amusing tenant in the spring.

Let me warn beginners in aquaria-keeping against being in a hurry to see their vessels full of fish. Let your plants get established before introducing any animal life, and then do not overcrowd them; it is not only dangerous but cruel to cramp the inmates up as I have seen them done. I notice that most of your correspondents use glass for their vessels. Now, I prefer to imitate nature as closely as possible, and for this reason in my general tanks I do not use any vessel that will admit of lateral rays of light; your inmates are seen to the best advantage in a vessel lighted only from the top. Now, my own tank, of 16 or 18 gals. capacity, is made of wood, and sunk in the ground in my Fernery; round the edges is a sloping bank of virgin cork, which overhangs to the water; on this I grow Liverworts, Mosses, and some small Ferns. In my tank I do not trouble about many plants, preferring to depend for the supply of oxygen to the confervoid growth with which the sides are abundantly covered. Thus I come nearer to a natural condition for my finny pets than exposing them to a glare of light near a window; for, be as careful about shading as you will, there will always be times when old Sol suddenly pops out, and you are not in the way to screen them.

The higher development of the aquarium I have not seen touched upon in your pages: I mean the cabinet aquarium, as it is sometimes called. If it would be of interest to your readers, I shall be glad to forward description, &c.; or perhaps some other reader, who is more experienced in the subject, will do so. Then there is the aquarium as a water garden, in which at proper time and season most of our best aquatics can be shown. T. CHADBURN.

Cure for Wireworms.—Some readers of GARDENING may be glad to know that a few plants of Double Daisy in a bed are a complete protection from wireworm to the remainder of the plants.—H.

Garden Ornaments.—Old rustic stumps and trunks of trees when tastefully arranged are very ornamental in the flower garden; but when these cannot be obtained a good substitute may be had at a small cost, viz., American cheese boxes. To make them I take three round pieces of wood of equal lengths and nail them together so as to form a stand; then nail the cheese box on the stand, and cover the outside entirely by nailing on the bark taken from old trees; burn three or four holes in the bottom for drainage, and fill with mould. When planted with bright flowers they look very nice; the Tropæolums are well suited for this purpose. The boxes may be purchased at most grocers, and the bark at the timber yards.—F. R.

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CLIMBERS ON TREES.

MANY a garden might be made much more interesting and beautiful than it now is if the system of garlanding some of the stronger-growing trees contained therein with beautiful climbers were adopted. In the case of some trees it would not be advisable to cover them with strong-growing climbers as they might sustain injury thereby; but there are always trees in gardens upon which a Honeysuckle, a Clematis, or a Rose might be allowed to ramble without fear of injury. Then, again, trees or shrubs which have assumed a sickly aspect might be ornamented in this way with advantage. The accompanying illustration, drawn and engraved from a photograph in May, shows an old and vigorous plant of the handsome and hardy Clematis montana allowed to have its own way to some extent. This climbing shrub, of which the large-flowered variety called grandiflora is grown here and there on walls, is most precious for those who wish to garland trees and stumps and hedges with lovely flowers. It is as hardy and free as the common English Clematis Vitalba. The Clematises are so numerous, so hardy, so beautiful in flower and so singularly varied in the colour and form of their blossoms, that whole wild gardens of beauty may be formed of them alone. The woodcut on page 113, which was prepared for "The Wild Garden," represents a Clematis montana on the branch of a Yew tree, in which the flowers of the Clematis can be seen more prominently than in the engraving on our front page. Climbers do better if planted before the trees become too old or the soil exhausted. In the case of any old tree it may be desired to clothe, some of the exhausted soil should be removed, and some fresh rich material substituted. But the new soil must not be placed much higher up the bole than it was covered by the old soil, or some mischief may arise to the bark of the tree and its health be injured. The Wistaria, if planted before its support has become old, will combine with excellent effect with any single specimen of not too dense a habit. Of course, the Beech should be avoided. Some time ago we saw a Weeping Willow, on the margin of a lake, that had its trunk clothed with Virginian Creeper, and the effect in autumn, when the sun shone through the drooping branches of the Willow—whose leaves were just becoming tinged with gold—upon the crimson of the creeper-covered trunk was rich in the extreme. The Everlasting Pea, both the rose-coloured and the white varieties, are very suitable for planting near small-growing trees, such as Laburnums, Thorns, or standard fruit trees, when such are grown in or within view of the grounds. In small places, where the orchard trees are planted on or near the lawn, some interest may be added to the plantation by covering the stems with some strong-growing creeper that is not easily destroyed; and we have seen these Peas used for the purpose with good effect. Of course, they cannot be planted in orchards to which stock have access, as in such cases nothing would be permitted to live. Even the trees, until the stems become old and gnarled, must have protection. The Hop is a very effective plant for draping a thin specimen Arbor-vitæ or Yew tree, but the shoots should be thinned out in spring, and not more than three or four allowed to climb up to the tree. When the leader emerges from the top of the bush and throws its long graceful wreaths of Hops over the dark green foliage the contrast is most effective. In like manner, the taller stronger varieties of Tropæolum could be used on shrubs towards autumn without doing any harm, as the first frost would kill them, and they could be removed. After the first year there would be no occasion to plant any seeds of these Tropæolums round the shrubs, as enough would fall and winter in the ground to furnish sufficient and to spare. Clematises are well suited to plant at the base of deciduous trees and even Yews, especially those with light-coloured flowers, which are set off to advantage by the dark background. The Honeysuckles, Jasmines, and climbing Roses, too, are favourite plants for garlanding trees. We have seen a large variegated Holly, from among the thick branches of which hung showers of blooms of the red and white York and Lancaster Roses with excellent effect, and this, to all appearance, without doing the slightest injury to the Holly, and we have also seen the Wistaria hang

CLEMATIS MONTANA GRANDIFLORA GARLANDING TREES.

down in long festoons from the head of a common Fir tree probably 50 ft. in height.

In the rougher parts of the grounds, such as in shrubbery or woodland walks, there are many hardy climbers which could be used with equal advantage, such as Apios tuberosa, a North American plant of the Pea family, that bears reddish flowers with a perfume similar to that of Violet blossoms. The common Tamus (T. communis) is a pretty plant for a similar position, as is also the Tamus-like Hablitzia (H. tamnoides), a plant of rapid growth, and one which is covered for some weeks in summer with a profusion of small blossoms produced in dense racemes. The Cucumber family also yield some graceful climbing plants; for, besides our native Bryony (Bryonia dioica), there are Echinocystis lobata and Thladiantha dubia, both hardy and vigorous-growing plants. Several of the species of Smilax are quite hardy enough to admit of being grown in sheltered positions, and very pretty climbers they make when well established. The kinds best adapted for such purposes are S. aspera, hastata, mauritanica, and excelsa. The Dutchman's Pipe (Aristolochia Sipho), as well as A. tomentosa and A. altissima, should always be included, as they will grow anywhere, but nowhere better than in sheltered shaded places. The Canadian Moonseed (Menispermum canadense) is another pretty plant, and one which has a charming appearance in early summer when covered with its long racemes of white feathery blossoms. M. dauricum is a kind not sufficiently known at present to speak correctly of its merits, but probably it is as desirable as its congener. Schizandra coccinea, a plant belonging to an allied family, and similar to the foregoing Moonseeds in appearance, is also well worth notice, as its small fruits, which are bright red, have a pretty effect.

Trees and Shrubs for Wet Ground.—I know of nothing more profitable to grow, or that will succeed better in wet land, than the Alder. When once the plants become established, it is astonishing how quickly after being cut down they start again and yield fine poles, that is, if protected from the attacks of game, such as hares and rabbits, which are fond of nibbling the young shoots as they start into growth. Next to Alders in point of profit and suitability for wet land stands the Ash, the wood of which always meets with a quick and ready sale. Elm, too, does well where it can get plenty of moisture at the roots, and it is only when so favoured that it keeps healthy for any length of time, or acquires much size; when sound and large, Elm trees are valuable. By planting the two last named at wide intervals, the Alder will be found to do well between them, and come in as a sort of undergrowth, an arrangement by which there would not be many years to wait before the ground would yield some return. If any shrubs or plants are wanted by way of ornament, the common Rhododendron, Bambusa Metake, Arundo Donax, and a few plants of Pampas Grass might be used, and, if judiciously arranged, would form quite an interesting plantation. Evergreen Oaks interspersed here and there, and some of the Coniferæ, such as the Austrian Pine, Pinus Laricio, and Abies Douglasi, would also have a good effect, but if the land be very wet, it may be necessary to plant these on raised mounds. —S.

Magnolia conspicua.—This beautiful flowering tree, which looks so well in the form of a single specimen on Grass, with its branches bending under a load of pure white blossoms, will soon be in full beauty. I have on many occasions used its flowers for Easter decorations, a time when white flowers are in such great demand. This year, however, the buds scarcely showed signs of swelling at Easter; therefore this Magnolia is quite a month later than usual. —J. G. M.

UNDERGROWTH FOR SMALL SHRUBBERIES.

NEAR towns it often happens that small villa lawns are bounded by a little plantation of tall deciduous trees or shrubs, the ground under which is usually left bare. This need not be, as there is a variety of plants which would form a beautiful undergrowth. There are several common low-growing hardy herbaceous plants which will live under the shade of deciduous trees, and which, with little expense or trouble, might be planted in large patches, and produce quite charming effects, especially in spring.

If the ground in the plantation has become hard, and the autumn leaves have been annually swept away, it will be necessary to dig it, at least in patches, and put in some leaf-mould or or other dressing, and freshen the soil before planting any herbaceous plants. But when the injurious process of annual digging has been carried on, the ground will probably be in fair condition to receive hardy free-growing plants at once; and when they are established there need be no more rough digging and exposure of the earth, which Nature always is willing to hide.

The common Lungwort (Pulmonaria officinalis) is an excellent covering for bare ground partially shaded. A small patch of it in the herbaceous border gives but a poor idea of its real beauty when allowed to cover a plot as big as a small dining table, with its shapely leaves and mixed pink and blue flowers. It is free-flowering and continues in beauty for a considerable time; the leaves, indeed, remain till the frost cuts them off in winter, and they show themselves again early in spring. This Lungwort has also the merit of being a very good flower for indoor decoration, lasting a long time in water, and coming early in the year; it ought to be planted where it can occasionally catch a glimpse of the sun before the trees are in leaf. The variegated Dead Nettle (Lamium purpureum maculatum) is another plant which, after once being put in, will give no further trouble, and will grow under tall deciduous trees, covering the ground close with well-marked leaves for nearly all the year, not to mention its pink flowers in spring. The well-known Periwinkles (Vinca major and minor), blue, white, and coppery, deserve permission to ramble over any shady space not regularly cultivated. Here and there clumps of hardy spring bulbs might be allowed to push their way through these Vincas. Closely surrounded by Ivy or any low-growing carpeting plant, a group of Martagon Lilies (Lilium Martagon) would have a good effect. The colour of these Lilies is not bright; botanists call it "winey-red," but whatever it is called it is not much to boast of. It is the shape, the outline of the Lily which is so strikng: whorls of leaves up the stem, and at the top ten to thirty blossoms, with petals well turned back on the foot-stalk, and of so firm a substance that they might be wood carvings, and ornamented by stamens so long and delicate as quite to set the wood-carver's art at defiance. The anthers are bright orange, and a good contrast to the "winey-red." These Lilies will grow in any shade, and look well either in groups or otherwise. They might have a little manure when planted, but afterwards they will take care of themselves. Martagon Lilies used to be common enough; but so many good things are now little known, that I feel the necessity of introducing them as if they were novelties. There is a scarlet Martagon (Lilium carniolicum), the colour of which is all that could be desired; but I do not think its general aspect is so stately and fine as that of the common Martagon. It does not grow so tall, and the plant is less striking from the leaves being scattered instead of being arranged in whorls. It will grow where direct sunshine never falls, but I am not sure that it will flourish so well as the common Martagon quite under the thick shade of trees. Lily roots of any kind must not be kept long out of the ground.

White Foxgloves would make a bold group among low herbs, but to ensure their growing tall, strong, and fine, the soil into which either the seeds or young plants are put must not merely be dug, but well enriched with manure; and though Foxgloves in favourable positions, where they grow naturally, sow their own seed, and never fail year after year to yield spikes of bloom which tower over nearly every other British wild flower in conspicuous beauty, I cannot promise with such certainty that where they have been artificially introduced we may come again and find them at the end of twenty years, as in the case of the Martagon Lilies. Then there are Columbines (Aquilegias), plants of excellent habit, bearing flowers of great beauty. Very interesting in the early spring is the quickly-growing tuft of well-cut blue-green leaves, from which in time rise firm stems, never untidy, always carrying scores of pretty nodding blossoms of various colours. Once established they never need be noticed again, except to enjoy them. Let a packet of good seed be sown in ground ever so lightly prepared, and the hardy English Columbine will take care of itself.

I should like to see some of these bolder growths in close association with a large stone or two; or one really big stone would perhaps look even better. It may be of any shape, but must be in a natural position. Close against such a stone, over which a spray of Ivy might run, a group of Lilies would look particularly well. Three or four smaller but sizeable stones among a cluster of Foxgloves would help to give them shelter, and preserve the moisture about their roots, and look natural and picturesque. Where a great many cut flowers for indoor decoration are required, I can recommend two hardy things which will grow under trees, and which only ask to be well started and then let alone; far from requiring to be taken care of, each of these takes such good care of itself that the trouble would be to get rid of it. But if too rambling to be admitted into the borders, where order is of importance, their obstinate permanence makes them all the more valuable in a part of the grounds where we want something pretty but not troublesome. One of these desirable plants is the creeping Campanula (C. rapunculoides); its flower-stems stand 1 ft. or 2 ft. high, with gracefully-drooping bell-shaped flowers of a purplish-blue colour. Except for its habit of spreading underground and coming up in unexpected places, it is by no means an untidy plant, being almost entirely out of sight when out of blossom. The same may be said of the Leopard's Bane (Doronicum Pardalianches); its blossoms are like golden stars on long flower-stalks, particularly convenient for vases. It used to be common in cottage gardens, and, though probably introduced, has made itself wild in some places; but, like many other old and good things, the difficulty is now to get a plant of it. H.

Layering Roses.—There are no means by which stout-blooming plants on their own roots can so quickly be had as by layering. Where dwarf Roses are grown, either on their own roots, grafted, or budded low, and the shoots pegged down for flowering, a large number may be had by the end of the season on their own roots without much interfering with the blooming during the present year by layering. Supposing the shoots so pegged down have been left about 2 ft. long, and a tongue is made by cutting with a sharp knife one-third through the shoot in a slanting direction towards its point, and about 9 in. from the end, and the shoot at this point is pegged down in the soil—removing the latter so as to get the shoot at this juncture about 2 in. below the surface, using a stout, hooked stick, that will hold it in position, covering it up, so as to leave two or three eyes at the point bare—these will make strong shoots, forming the head of the future plant, which, during the summer, will push plenty of roots at the point where tongued. Nothing further will be required except severing from the parent plant in the autumn. The lower portion of the shoots so pegged down, as well as the portion at the point left above ground, will produce strong flowering growth through the summer; and in this way the quantity of plants may be increased to an extent only limited by the number of strong shoots available, with very little loss as to the amount of flower during the present season.—A. B.

VEGETABLES.

Sticking Peas.—Various modes of sticking are practised in different parts of the country, but none of them beats Pea-sticks made of tops of trees or underwood; Hornbeam is perhaps as good as any when it can be obtained; Hazel and Ash, too, are often used, and answer the purpose admirably. In preparing the sticks they should be made flat or fan-shaped, just taking off the straggling shoots at the top, in order to give them a neater appearance; little time need be spent in sharpening—one usual cut made in a slanting direction being all that is needed; a little judgment must, of course, be used in cutting them to the required length for each variety, too short sticks being comparatively worthless; care, too, should be taken to place them wide enough apart at the bottom, and upright,—*i. e.*, not sloping inwards at the top, as is usually the case, allowing the haulm to escape at the sides, instead of finding its way to the top inside the sticks. In the case of very tall Peas it is a good plan to put a short stick and a long one alternately on each side of the row; when, however, sticks cannot be had readily, a few stout poles or stakes driven firmly into the ground, 5 ft. or 6 ft. apart on each side of the rows, will answer. These should be all of one height, which should be that of the Peas; some tar twine or other strong cord should then be tied to the end stake and passed along the line, making a turn on each stake within a few inches of the ground, and as growth progresses the next turn should be raised a little higher up, and so on until the plants have attained their full height. If the string or cord be applied at the right time, the tendrils of the Peas will clasp firmly round both stakes and strings, and will support the plants almost equal to Pea-sticks; some, indeed, think this plan best, as by it the plants are exposed to more light and air than they otherwise would be, and the pods are more easily picked without injuring the haulm. Light galvanised wire hurdles are likewise used in some places for supporting Peas; and they are not without merit, inasmuch as they are neat, are speedily applied, and last long. Market gardeners seldom stick their Peas; they allow them to come to maturity, then pick them and pull them up. They are seldom gone over more than once or twice; and for market purposes this answers very well, but where a continuous supply is desired sticks are decidedly needed. When they are not employed, stopping the points of the shoots is often practised to induce the plants to grow more dwarf and bushy, which in this case is no doubt advantageous; but, as a rule, little is gained by stopping. It is said by some to throw the energy of the plants into the pods, but it is a question if it be not as harmful as beneficial. Where a crop of Peas is required to be fit for use on a given date, and where from all appearance it is not likely to be ready by that particular time, we have frequently seen the tops of the shoots removed, and only the most forward of the pods left. The moulding-up of Peas after they have been sticked is generally done with a spade; a line is stretched along the side of the row, in order to make straight work, and the soil is then carefully placed round the bases of the plants. Too much soil should not, however, be put around the stems of Peas, as the roots push from the stems with considerable reluctance, and the earthing-up throws off the water instead of allowing it to descend to the roots.

The Onion Maggot.—This is the larva of a fly that deposits its eggs amongst the leaves of the plant, and works its way down to the bottom of the bulb; and when they attack the crop they most generally destroy or seriously injure it. The Onion is much more subject to the maggot in light soils than in heavy land, especially in old worn-out gardens. I have tried various remedies that have been recommended for its destruction, or as a preventive to its spreading; but I have never found anything that was of use after it once attacked the crop. By a judicious preparation of the soil, and the use of some manures, I have found that its attacks were rendered less frequent. In light land, the addition of liberal quantities of new soil, with a good dressing of salt (½ lb. to the square yard), applied as a surface-dressing during the autumn or winter, with 1 in. of soot pointed into the ground before sowing, renders the crop less liable to its ravages. It would appear that the smell of soot is distasteful to the fly, and prevents it depositing its eggs; but, whenever they have come to life, the soot-dressing overhead, often recommended, I have found of no avail.—H.

Salt for Onion Beds.—Where attacks of maggot are feared on Onion beds, ½ lb. of salt scattered broadcast will do much towards remedying the evil. If the seed be already sown the salt may be applied, but if sowing have not taken place, the ground before being drilled should be sprinkled over with salt, and have a good raking in order to distribute it well. If a slight dressing of salt be applied to Onions after they have made their appearance above ground, it will greatly increase the growth of the plants, as well as help to preserve them from the attacks of maggots.—J.

The Highfield Grape Tomato.—This singular hybrid, the produce of a cross between the Currant Tomato and Hathaway's Excelsior, is apparently a most valuable kind, as it withstands the disease long after others have been killed off by it. The bunches of fruit range from 9 in. to 18 in. in length, the fruit being as large as the berries of the Gros Colman Grape and finely flavoured. It is a capital kind to stew whole.

Vegetable Marrows.—I grow two varieties of Vegetable Marrow, viz., the Large White and the Improved Custard, the seeds of both of which I sow in April or early in May. I fill a 6-in. pot with loam and leaf-mould, on which about half-a-dozen seeds are put round the edge, and the pot is afterwards placed in a heat of 60°. In this temperature the young plants soon appear, and as soon as they form the first rough leaf they are potted singly into 4-in. pots, and gradually hardened off until the last week in May, when they are planted out. I have planted them on an ordinary kitchen garden border, but I never had them so fine as I had them once on a heap of garden refuse in a reserve ground. I have also found them to be more fruitful when pretty closely pinched in than when allowed to ramble about as they generally do.—A. N.

Tripoli Onions Sown in Autumn.—Where large mild Onions are required for cooking, these can only be got by giving them sufficroom. They should at once be thinned out 8 in. or 9 in. apart; and, if the soil was not sufficiently rich at the time of sowing, the produce will be much larger if it now receives a sprinkling of guano and soot, mixed in equal proportions. Delicate-flavoured Onions are very much esteemed for culinary purposes; but, unless they are grown freely in soil well enriched, they cannot be had.

Broccoli in Succession.—The following kinds, if true to name, I find will give good succession of compact white heads from November until June:—Snow's Winter White, Veitch's Early White, Dilcock's Bride and Cattell's Eclipse. Some of the latter should be planted on a north border, to make them as late as possible; and should be succeeded by Walcheren Cauliflower, which, sown at the end of August or beginning of September, and wintered under hand-lights or frames, would come into use at the end of May and throughout June. These should again be succeeded by Walcheren and Veitch's Autumn Giant, sown on a slight hotbed in February; the Walcheren would be in throughout July, followed by Veitch's Giant through August and September, and both would be succeeded by the same sorts sown early in April, which would last until Snow's Winter White came in, thus keeping up a good supply the whole year, unless destroyed by severe frost. I had a splendid lot of Autumn Giant throughout last August, and kept some in an early Carrot frame.—G.

Watering.—Although the soil is now in moist condition; yet, should we have an absence of rain for even a short time, the ground quickly becomes dry, and surface-rooting plants soon suffer unless water is given them. It is necessary to impress upon amateurs that it never should be given until absolutely required, and, when applied, it should always be in quantities sufficient to moisten the soil as far down as the roots penetrate; when this is not done, it merely excites the surface-roots, leaving those that are deeper, and generally of more importance to the full development of the plants, in a comparatively inactive state; and, unless these surface-roots, excited by this sprinkling system of watering, are kept supplied, they perish as quickly as they are formed, in which case the plants so treated suffer more than if no water had been given. This applies with equal force to both flowering plants and vegetables. To all to which water is given, give it thoroughly, even if some things be left without altogether; this will be found better than sprinkling or half-supplying the whole.

Chrysanthemums.—To grow these really well in borders, they should never stand longer than a year without being renewed or renovated, and instead of a large number of stems being allowed to grow up together, they should be limited to three or four at least. Being naturally of a gross-feeding nature, it is necessary that the ground where they are to be planted be deeply trenched.—G.

The Flame Nasturtium among Rhododendrons.—Twelve or fourteen years ago, I planted this among and near the margin of large masses of Rhododendrons, and each year it grows up among them most luxuriantly about 8 ft. high, flowers beautifully, and is much admired. The natural soil is a rich light loam. The choice kinds of Rhododendron are planted in peat. This plant does as well on the sunny as on the more shaded side of borders.—J. G.

The Thread-leaved Adam's Needle (Yucca filamentosa).—This is one of the best of

Thread-leaved Adam's Needle (Yucca filamentosa).

the Adam's Needles for small gardens. It seldom fails to flower abundantly, whilst its leaves are conspicuous on account of their being fringed at the edges with grey filaments (threads) 2 in. or 3 in. long. The flower spikes attain a height of from 4 ft. to 6 ft. in fine sandy soil or peat, and it is well worth planting in masses in a lawn or in front of a shrubbery. Indeed, we have seen some of the Yuccas grow and flower well in the little forecourts in the most populous parts of London. It is thoroughly hardy, and, apart from its usefulness as a garden plant, it may be employed with advantage in vases in the open air, or in unheated corridors or verandahs.

German Asters Sown in the Open Ground.—Like many more, I have unthinkingly followed the practice of sowing these in a frame, or in pots, and then transplanting them; but I found that the transplanting season, falling as it did, at the busy bedding-out time, was often overlooked and the seedlings neglected. I therefore now sow in the open border where they are to stand, and prick out as they need it. In this way I get good flowers.—N.

Propagation of Japanese Anemones.—Division of the crowns, with roots attached, may suffice when one has a large stock of plants, but to work up a large stock quickly from only a few roots a more expeditious plan is necessary. Three weeks ago, I dug up four old roots of the white variety, and three of the pink; and from those seven plants we have now upwards of 200. This was effected by cutting off as many of the roots as could be spared, still leaving enough to support the main crowns, which were then just starting into growth; the pieces of roots were then cut into

little bits about half-an-inch long, and they were sown in pots of light, sandy soil, just in the way in which we should sow seeds, covered lightly, and plunged in a gentle bottom heat. They started away immediately ; every bit grew, and they are now potted off into small pots. By-and-by they will be planted out, and I expect some of the strongest will flower in the autumn.—E. H.

Carnations, Picotees, and Pinks from Seed.—The middle of March is the best time to sow the seeds of these plants if a little bottom-heat in a cold frame is available ; but they may be grown well from seed sown in pans in the first two weeks of May, and placed in the open ground where they can be sheltered from the midday sun. A light fine soil is most suitable, enriched with old hotbed manure rotted to dust, or old powdery leaf-mould, or a mixture of the two. The seed should be covered with ½ in. of soil; and as every seed should make a plant, the seeds should be lifted separately and sown 1½ in. apart each way, to allow of those that grow most vigorously being removed without disturbing the weaker ones. The soil must be kept moderately moist, but not anything like wet. If the plants are to be grown in beds, these should be prepared while the seeds are springing, and should consist of the same soil as the seed pans, and so arranged that no water can stagnate in them. When the plants have made six or eight leaves. they should be pricked out where they are to bloom, so as to become well established before winter. They require no protection from frost; but if they could be sheltered from excess of wet it would be an advantage. A wet winter with occasional sharp frosts is more dangerous than continuous hard weather. A stock of young plants should be raised every year and planted out every autumn ; and, as a precaution, a few plants should be kept in pots in a dry, sunny, unheated greenhouse during winter, to supply the places of any which may be lost. There are three classes of the Carnation family—Pinks, which are comparatively dwarf in growth ; Carnations proper, and perpetual-flowering Carnations. The last two resemble each other in flowers, both consisting of self-coloured flowers, striped flowers, called flakes and bizarres, and flowers with a ground of one colour and edging of another, called Picotees. The plants which have yellow in their flowers are more tender than the others. Pinks and Carnations flower only once each year. Perpetual Carnations produce a succession of flowers. They are usually regarded as tender, and grown under glass ; but I have never found any but old plants suffer from the winter ; and as they can be propagated earlier than other kinds, and well established before winter, they are perhaps the best for general outdoor cultivation. Carnations do not come very true from seed, and when grown in that way many bad flowers are produced. Everything with feathery or serrated edges should be thrown away, unless very novel in colour. In a perfect show Carnation, the outline should be a perfect circle, and every petal marked alike ; but for garden decoration or cutting such very formal blooms are not so suitable as those which are more varied. The old-fashioned Clove is a self-coloured Carnation, with a powerful spicy odour. The propagation of Carnations and Pinks has already been described in GARDENING.—J. D.

Viscaria cœli rosea.—This is a beautiful hardy annual, sometimes called Agrostemma, which, if sown in autumn in warm sandy soil, and the plants are duly thinned out, will produce compact cushions of rosy-blue-coloured blossoms. It may be sown in spring, but the results will not be so good as those from autumn sowing. Much of the value of annuals is lost through leaving the plants too thick, in which case, instead of each plant developing itself properly, they become a crowded mass.

HOW TO GROW NEAPOLITAN VIOLETS.

FOR small bouquets this Violet is unsurpassed by any other variety, and, although it may be had in flower all through the winter and spring, yet near London market gardeners even do not pay much attention to it, although they grow other kinds by the acre. Single crown runners of it may now be obtained from old plants in abundance ; they should be cut off, and pricked out 1 ft. apart into a half-shady border in good rich soil, keeping them well watered during dry weather, and the ground between the rows clear of weeds by means of the frequent use of the hoe. Towards the middle of the summer a little manure-water may be given them with advantage, but it would be better still to mulch with thoroughly decayed stable manure free from worms. All young runners should be kept picked off as fast as they appear, and in the middle of September, after being well watered, the plants should be lifted with as good balls as possible, and either potted or planted out in a frame previously prepared for them, allowing a space of 3 in. or 4 in. between each plant. The pit or frame should have been filled with fresh stable manure, or, if at hand, Oak leaves are best, inasmuch as they retain a steady temperature for a longer period than other fermenting material. A foot thick of sandy loam and leaf-mould should be placed on the bed in which to set the plants, and after planting a good watering may be given, and the lights closed and shaded for a few days until root action has again commenced, after which abundance of air must be given night and day on every favourable opportunity. Little or no water will be necessary, but if the soil get very dry, the lights should be taken off early in the morning of some fine day, and the water applied in sufficient quantity to soak the whole of the soil, and the plants should be left exposed to sun and air until the foliage has become thoroughly dry. The plants in pots should occupy a similar position to those planted out until they show bloom, when, if they be moved to a light airy shelf near the glass in a cool house, their flowers will open freely. Damp is the greatest enemy which the Neapolitan Violet has when in flower, therefore it is obvious that whilst the roots should be abundantly supplied with water, the foliage should be afforded as much air as possible to ensure its being kept perfectly dry. Red spider often attacks the leaves of Violets during the summer when planted out; and for this there is no remedy equal to that of planting in rich soil in order to keep the plants growing vigorously. When coming into bloom, weak manure-water, in which has been put a little soot, may be advantageously applied at every alternate watering. If the flowers, when picked, be required to travel any great distance, it is best to place them loosely in a small box lined with Ivy leaves, for if tied in bunches, as they often are, they do not last in good condition nearly so long as when placed loosely in the box. C. S.

Viscaria cœli rosea: a hardy annual; flowers rose, shaded blue.

A NATURAL FLOWER GARDEN.

I HAVE in my mind's eye a little lawn in which I think even a landscape painter might take pleasure, so like is it to a natural glade in a forest, where the masses are broad and simple and the flowers quite at home. Here is no staring bedding-out, and no chintz pattern in leaves, but plenty of flowers, both native and foreign, and among them some rare and tender, but yet such as the situation suits ; and they grow so freely and happily, and are so naturally arranged, that it is easy to persuade oneself into the pretty delusion that they are all native to the place, and grew there spontaneously as soon as space was made for them. In fact, the whole place looks quite natural, much as if, while the house was being built in a site selected for its beauty, this pretty little bit had remained on, unruffled and untrodden, and now only asked to be dressed and kept. The turf is soft and deep and springy, such as it is a pleasure to tread on, and on which you may lounge with comfort on a warm sunny day. In early spring it is dotted with flowers, the remnants of which do not suffer from being mown out of the way when the grass first requires the scythe.

On this lawn there is one really large tree : it is a Beech—the weed of the forest, the lady of the woods. There is room for a large family party to rest themselves under its shade. Near the entrance, indeed, there is a miniature wood of very tall trees ; but they have been allowed to grow too near together to make fine specimens. It is too late to thin them now, and they give a pleasant shade ; and with the shrubs and smaller trees, of which there are a great many choice and well-grown examples, they help to give its sylvan character to the sunny opening. Several of the most "sticky" of these tall trees are made quite beautiful by being draped and garlanded with Roses, Honeysuckles, and other climbers. Our woodman appears to have left some noble stumps when he made this clearance They are now covered all over with lovely plants which look as if they came there of themselves, simply because they liked the place. Some rocks or boulders, apparently natural, are obtruding from the ground ; and our woodman seems to have thrown together such big stones as he found in his way. Among them Sedums, Saxifrages, Gentians, and various beautiful alpines, find a home.

Up to the very roots of the trees and shrubs the ground is covered with tender green. No spade-work is visible anywhere. Primroses, Daffodils, Violets, and Cyclamens grow undisturbed in the shade, and nestle against the tree trunks. Considering how little of this beautiful green lawn is broken up for flower beds, it is surprising what numbers of lovely nosegays it constantly produces for the refreshment of the sick and lonely. This is a veritable pleasure-ground. It is not selfishly enjoyed ; and it is not a worry on account of expense.—H.

Begonia lucida as a Wall Plant.—This is a free-growing glossy-leaved species, of rambling habit, but it is one of the most effective plants with which I am acquainted for draping the back walls of warm plant houses or conservatories. It is readily increased by means of cuttings struck in a warm house, and small plants of it introduced here and there on Fern-covered walls soon develop themselves and hang down in bright green wreath-like masses, forming a good contrast to the darker-leaved Ferns and other plants with which they may be associated. It may also be used with good effect as a basket plant.—B.

Tropæolum tricolorum.—A few good plants of this, when in flower in the cool greenhouse, always attract attention. When such plants have done blooming, they should be allowed to gradually dry off. When

they have completely died down, the pots should be laid for a time on their sides under the stage. In autumn they should be again repotted, though sometimes they do well without such attention. Loam, with a small proportion of peat and sand, makes a suitable compost for this plant, the bulbs of which should be set about 2 in. under the surface. When the young shoots begin to grow, care should be taken to well cover the base of the trellis with them. The top of a well-furnished Spruce Fir makes a good support for this plant, provided it has been some time cut; a balloon-shaped trellis is, however, generally used.—M.

FRUIT.

Watering Fruit Trees.—As a general rule, watering young trees in summer does more harm than good, by crusting the surface, without reaching the roots; and even if the roots are reached, the relief is only temporary, unless the watering is regularly repeated. There is a great want of appreciation of the amount of water required for the trees by those who apply this remedy. A young tree 4 ft. or 5 ft. high, if growing well, soon throws out roots several feet on each side. If these roots are only 3 ft. long, the circle of roots will be 6 ft. in diameter, and at a depth of only 1 ft. there would be no less than 37 cubic ft. of earth to saturate with water, requiring for one-fourth the bulk nearly one hogshead for a single watering. It is true that a young tree just planted may have had its roots cut much shorter, but as new ones are to be quickly thrown out into the soil as it commences growth, watering within restricted limits will do but little good. Clean mellow culture and wide and heavy mulchings are better than all the watering that can be given.—E.

Gooseberry Caterpillar.—There is no occasion for experiencing a single day's annoyance on account of this caterpillar. Water the branches affected, and, while wet, sprinkle some freshly-powdered hellebore over them. In a few minutes the grubs will have made themselves scarce, and will not return.—B. H.

Currants Losing their Bloom Buds.—My garden is situated in the heart of a city, and sparrows pick the buds off my Currant and Gooseberry bushes, and also off Plum trees trained against walls. I have tried many so-called remedies to prevent them, but the one that I have used for these last few years I find to be the best and simplest, viz.—after pruning my bushes, I procure some white worsted or knitting cotton, and string it several times from side to side, and once or twice across the bushes, leaving it there. No more sparrows come near them; they seem to me to be afraid that it is a net set for them.—J.

Currants on Walls.—The fruit of these is not often molested by birds whilst they have bushes in the open ground to attack, but when these fail the wall fruit will be in danger, and should be netted at once. By this means a supply of Currants for dessert can be kept up much longer than it otherwise could be; they will hang for many weeks when grown against the walls of buildings or anywhere else under copings. When grown on north, east, or west walls, they come in later than on more sunny aspects, and, if kept dry, will a long succession of useful fruit. Wasps, in some parts of the country, are very numerous in warm seasons, and should be guarded against; a ready and certain method of destroying them is dipping pieces of rag in gas tar, placing them in their holes at night, and setting fire to them, at the same time covering the hole up with earth, so as to prevent the fumes escaping; if this is done effectually, none that are inside will survive; but, as quantities of nests exist that are never found, means must be taken to trap those that molest ripe fruits. Plums, especially Greengages, are their particular favourites: so fond are they of this fruit, they will often attack the crop before it is fully ripe, and unless they are destroyed scarcely any will escape. The most effectual traps are ordinary hand-lights raised on bricks placed near the foot of the trees which they infest; put a few of the fruits which the wasps have partially eaten inside and near the top of the hand-lights, in which there should be an opening 1 in. or 2 in. in diameter, through which the wasps can get; nine wasps out of every ten that are attracted by the fruit-bait, instead of departing at the bottom, where they came in, will rise to the top of the glass and find their way out through the small aperture alluded to; but, to prevent their getting away, another glass, similar in size and shape, and quite tight, must be put on the top of the first; here they will be confined until they die. Wide-mouthed bottles, filled with sweetened beer or treacle and water, hung in the trees, will also catch great numbers of them, and may be employed in addition to the hand-light traps.—A. C.

A Remedy for the Pear Tree Slug.—For several successive summers my Pear trees, both wall and standards, presented a burnt-up appearance—every leaf being as brown as leather; and, later on, all the leaves fell, giving the trees a mid-winter aspect. This was the work of the disgusting-looking and very offensive-smelling Pear-tree slug, which annually made its appearance in great numbers about the 15th of July, not confining itself to the Pear trees, but also attacking adjacent Plum and Cherry trees. I had the trees well dusted with lime, using for the purpose an old-fashioned tin pepper-box. Ten days later they received a second dusting, and evidently a severe lesson had been administered to them, inasmuch as the following summer only a very few made their appearance—so few, indeed, that they were easily destroyed by hand-picking. Last summer I kept a vigilant look-out, and was not able to discover a single one in my garden, while the fruit crop was abundant, fully repaying me for any little trouble to which I had been put.—G. F.

Thinning Stone Fruits.—When a Peach tree sets its fruit thickly, the first thinning should be proceeded with as soon as the fruit is fairly set. Do not delay this work till the fruit is stoned on the plea that the tree is sure to cast a portion of its fruit of its own accord at that critical period, forgetting that exhaustion is the chief cause of a tree dropping its fruit, and that the heavier it is cropped previous to the stoning period the more likely is it to suffer. It is rarely that a Peach tree casts any quantity of its fruit when thinly set. This I have remarked over and over again, and also noticed that the fruit in such cases was always finer, as might be expected; but a healthy good-conditioned tree usually sets an enormous quantity of fruit, frequently fifty times more than it can bring to maturity. Frequently when the weather has been dull and unfavourable at the setting period, a large per-centage of the fruit is imperfect. At the same time that this is cleared away, the healthy fruit should also be thinned out to 1 in. or 2 in. asunder, or more if there be plenty of it; and then thinning may be stayed till the fruit is about the size of small Beans or green Gooseberries, when it should be thinned a third time, leaving the fruit about 4 in. apart all over the tree; after stoning they may again, and for the last time, be reduced to 9 in. or 12 in. apart, according to the vigour of the tree. The amount of space allotted to each Peach is commonly reckoned to be about 1 square foot, and no doubt when fine large fruit is desired this is not too much; but it is more than is usually allowed, and more than is necessary in an ordinary way. I have for years had magnificent Victoria Nectarines from a not very old tree that has always been cropped at the rate of one fruit to every 6 in., as near as could be averaged; but the Victoria is a vigorous grower, and can carry a heavier crop than most other varieties of the Nectarine. On ordinarily vigorous trees 9 in. will, however, be sufficient for general cropping, and at this rate the fruit ought to be of fair size, but not extremely large. Still, moderate-sized fruit in abundance and well finished is preferred for dessert purposes to a scanty supply of large fruit, though the last is undoubtedly the test of high culture. After the thinning has been done, and the trees have been disbudded for the last time, the leaves and shoots should be put aside or pinched wherever there is a fruit, in order to let the light and air play all round it. Shaded fruit is either so large or so well flavoured as that which has been well exposed from the first. If, however, the shoots be trained thin enough to allow the sun's rays to penetrate freely to the wall behind, the fruit will generally have enough light. In conclusion, it may just be stated that the directions here given apply also to all other stone fruits.—C.

Close view of Clematis montana grandiflora on an old Yew tree. (See front page.)

Liquid Manure for Plants in Pots.—The beneficial results obtained from manure-water when judiciously applied to fruiting and flowering plants have long been recognised by cultivators, and its use is now becoming more general. It is well known that the roots of plants are usually more healthy when growing in pure soil free from rank manure, and these roots will draw up more healthy nourishment to the plants from manure given in a liquid state than when they are encased in rank material which they cannot consume. The suc.

cessful florist has more faith in giving stimulants when the plant really needs them than in keeping the roots buried in soil made rich and almost offensive by strong manure. When roots are few, and the plants almost at rest, the purer the soil, and the less stimulant the plants receive, the better will they thrive when their roots come to draw up larger supplies of nourishment. Moisture is needed to soften the soil, and to allow the roots to extract nourishment from it; but when all the virtue is out of the earth, and the plant begins to show signs of distress, all the watering in the world will not give vigour to the exhausted functions; but let a portion of guano or any well-prepared manure be mixed with the water sufficient to colour it, and let this be repeated at every watering instead of giving a much stronger dose at longer intervals, and the result will be most satisfactory. I have tried a number of experiments with liquid-manure, and all lead me to have faith in the application of it, at every watering, in a weakly state. A number of fruit trees in pots (chiefly Plums) which had not been shifted for years, produced heavy crops of fine fruit, and, though there was little in the pots but roots, frequent doses gave them all they required. A number of old Fuchsias were stunted and pot-bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a colouring of guano was allowed, and the plants, with their pot-bound roots, have not only made vigorous growth, but flowered freely from June onwards till November. Some Pelargoniums, which were cut down and allowed to break in the usual way, were shaken out of the pots, and placed in smaller ones, but when they should have been shifted they were allowed to remain in the small pots, which were crammed with roots; guano-water was given at all times when they required moisture; the plants grew and made fine foliage, and flowered better than others which were favoured with larger pots and fresh soil. Many other examples I could give to prove that giving liquid manure frequently, and not till roots are in abundance to consume it, is the proper way to deal with this important assistant to cultivation.—*Florist.*

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

May 10.—Sowing Scorzonera, Salsafy, Radishes, and Early White Snowball Turnip; potting late-struck Coleus and Alternantheras; pricking off Antirrhinums, German and Ten-week Stocks; sticking and earthing up Peas; dusting Turnips and other seeds just coming up with wood-ashes, to keep off the fly; looking over Cucumbers and Melons, stopping them and removing all weak shoots and male blossoms, and fertilising them where required; potting winter-flowering Carnations and Musk; re-potting young Cyclamen plants; planting Seakale thongs, Violets, and more Lettuces; pricking out main crop of Celery into cold frame; digging and raking flower borders not already done; turning walks in flower garden in order to kill weeds and give the gravel a fresh appearance; sticking Peas that are above ground; hoeing among Potatoes, Carrots, Beet, and Herbs, and digging out more Celery trenches.

May 11.—Sowing Green Curled and White Batavian Endive; pricking out Lettuce, Cauliflowers, and Asters; planting out Calceolarias, Pelargoniums, Golden Pyrethrums, and other hardy bedding plants; thinning out Beet and filling up all failures; watering newly planted Cauliflower and Lettuce plants; looking over Peaches, Nectarines, and Apricots on the walls, nailing in the leading shoots, and disbudding them where required; potting and staking old Fuchsias, and shifting Balsams into their flowering pots; potting off Cucumbers; sowing Marjoram, Sweet Basil, Neapolitan Cabbage and Paris White Cos Lettuces; planting Lily of the Valley, tree Carnations, and Anne Boleyn Pinks; also beds of Asparagus; putting in cuttings of Clerodendrons, Aphelandras, and Fuchsias; putting Azaleas in Vinery to make their growth; nailing leading shoots of Apricot and Peach trees out-of-doors; plunging Rhodendrons and Lilacs; raking Rose beds.

May 12.—Potting Cockscombs that are showing bloom; also other kinds of Celosia; potting off small Begonias, and other fine-foliaged plants; sowing Primulas, Cinerarias, Calceolarias and Globe Amarantus; also Mignonette, round Rose trees; planting Sweet Briers, Deutzia scabra, crenata and gracilis, Dicentra spectabilis, and April-sown Lettuce; watering Melons, Violets, and young Celery plants; stopping all shoots on Fig trees; putting Alternantheras for bedding-out in cold pits to harden; earthing up Cauliflowers; keeping Orchard-house rather moist; thinning fruits of Apricots for the first time; tying Peach trees; sowing Giant White Cos and All the Year Round Lettuces; potting Vegetable Marrows and ridge Cucumbers; thinning out Spinach and Turnips; preparing stakes for Dahlias and Hollyhocks; watering Cucumbers, Melons, Potatoes, Carrots, and Beans in frames; looking over Strawberries, and picking off weak and late blooms; putting stakes and strings to Broad Beans and earthing them up.

May 13.—Potting Primulas and a few Fuchsias intended for large specimens; also Phlox Drummondi; sowing Picotees, Mandevillas, Zinnias, Japanese Maize, and Tropæolums of different sorts for baskets; also sowing Cannas, Sweet Peas, Ten-week and Intermediate Stocks, Wallflowers, and Champion of England and Veitch's Perfection Peas; planting Pansies, Lavender, Gladioli, Stocks, and Asters; watering and mulching all Apricot trees; earthing up Vegetable Marrow ridges; potting Standard Chrysanthemums; pulling up spring annuals that have ceased flowering; giving seed-beds a little guano; thinning Carrots and Turnips; putting Castor-oil plants for bedding into cold pits; taking up Tulip and Hyacinth bulbs from flower-beds; potting on Chilies, Cucumbers, and Pelargoniums; planting out Vegetable Marrow plants under hand-lights; picking the dead-leaves off Cauliflowers and giving them a good earthing.

May 14.—Sowing Cardoons, Chervil, Thyme, and Mustard and Cress; potting small Dracænas and Palms; planting early Savoys and Brussels Sprouts; mulching late Strawberries with long chaff cut from stable litter; syringing Rose trees with Quassia-chip water to kill green fly; taking down all wall tree protections, and storing them away; hoeing amongst all growing crops; potting Azaleas, Daturas, and a few large scarlet Pelargoniums for the autumn decoration of the conservatory; potting off seedling Humeas, Portulacas, and Balsams; sowing Amarantus melancholicus and elegantissimus, and pots of Mignonette; hoeing among all growing crops, and staking Peas and Scarlet Runners.

May 15.—Potting off Balsams, Petunias, and Phloxes; planting out Lettuces, Cauliflowers, and Tomato plants; getting all Potatoes earthed up as opportunities occur; thinning out the main crop of Parsnips, Onions, and Carrots; potting Hedychium Gardenianum; sowing Perpetual and Round-leaved Spinach, Broad Windsor Beans, and more Lettuces, Mustard and Cress, and Radishes; planting Sweet Peas raised in pots in well-manured ground; also planting Tritomas, a frame of Sweet Basil, and putting out Cauliflower plants in manured trenches; re-filling and planting flower vases; cutting down Sage plants; clipping Cerastium tomentosum; bedding-out Feverfew, and tying Pelargoniums and Fuchsias; gathering caterpillars from Gooseberry trees; putting all bedding annuals out-of-doors; taking down and stowing away wall tree protections; dusting Carrots with lime and soot.

Glasshouses.

Roof Climbers will now require regular attention to keep them from becoming an entangled mass. Let every means be employed to keep them free from insects, more especially scale. Azaleas that are brought into bloom in other structures for removal to the conservatory will be benefited by sprinklings overhead with the syringe every afternoon until their flowers are fully expanded; they should also be shaded, especially the high-coloured varieties. They must likewise be well attended to with water, as, during the development of their flowers, there is a much greater drain upon the roots than at any other time, and if allowed to become dry the flowers suffer as well as the growth for the ensuing year.

Geraniums and Calceolarias that are throwing up flower trusses should be encouraged by means of liquid manure, not too strong, especially in the case of Geraniums, or it causes them to run too much to leaf. Fumigate regularly, and not too severely. Fuchsias stake, stop, and tie; closely examine them to see that they do not suffer from aphides or red spider, as either quickly spoils them. Cockscombs, Balsams, Achimenes, and Hydrangeas should be well attended to, as these, with the plants previously mentioned, will be the principal things to be depended on during the following two months, when there is much greater scarcity of flowering plants than during early spring.

Abutilons.—These almost incessant flowering plants now exist in such variety, and are so dwarf in habit and free-blooming, that they will flower even in very small pots. Young plants of them potted now and encouraged to make growth will, four months hence, have attained a useful size, keeping them stopped, as occasion may require, in order to lay the foundation for a bushy form, which will, in the majority of cases, be found the most useful. The stopping thus recommended by moving the points of the shoots with the newly-formed undeveloped flower-buds will induce the plants to make growth instead of flowering till they are required. By way of variety, and to assist effective arrangement, a few of them may be grown as standards, dwarf, or of medium-size, according as they may be found most suitable for the description of structure wherein they will have to be used. These plants exist in various shades of colour, from the deepest dark crimson through the paler hues of red down to yellow and white, and the plants are as different in habit as they well can be from the species first introduced.

Single and Double Petunias.—At no season of the year are these so useful as late in summer and autumn; blooming, as they do, in the smallest state, and continuing to flower on up to the end of the year with very little attention, they deserve to be grown in quantity to come in about the time mentioned; they will be found especially serviceable, for when done with all of them can be discarded, excepting a store pot or two of each variety, which should be retained for purposes of propagation—a great advantage, as in winter most of the space allotted to greenhouse subjects is needed for plants of a more permanent character. Cuttings put in a few weeks ago and now rooted—kept three or four together in 6-in. pots in light rich soil, and moved into others 2 in. or 3 in. larger when necessary, keeping them sufficiently stopped to have them compact, and picking the flowers off till within a month or so of the time when they are required in bloom, and the shoots kept in position with a few light sticks and ties—will be most useful. Many of both the double and single sorts are well worth cultivating; the latter, consisting of beautiful and distinct colours, are now raised from seed, and yield an abundant amount of variety. Either the double or single kinds will do for hanging baskets, but the single, being usually of a weaker and more procumbent habit, are better suited for the purpose than the others.

Amarantus and Balsams.—Young plants of the old-fashioned Cockscomb, the small Globe Amarantus, and Balsams should have every attention. They need plenty of light, and root-room sufficient to enable them to get strong and vigorous in their early stages, otherwise their effective appearance when in flower will be much diminished. A few more seeds may now be put in with advantage to produce plants to bloom later on. Little difficulty after this time will be experienced in accomodating all such plants as those just named; for ordinary frames and pits—in which they will grow much better during the summer than in houses—will shortly be at liberty and ready to receive them.

Schizostylis coccinea.—This is another plant that deserves to be grown in considerable quantities by every one who possesses a greenhouse or conservatory. It is one of the finest late-flowering plants which we have out-of-doors, where it can be protected a little; but, when properly treated, it is even more useful for conservatory decoration. It may be managed in two ways—either planted out in rows or clumps in the open ground, in good moderately light soil, that will admit of its being lifted in the autumn for potting without the breakage of root fibres, which inevitably happens when the land is of a heavy, close nature; or it may be grown in pots, six, eight, or a dozen together, according to the size of the pots, which may be from 7 in. to 10 in. in. diameter.

Flower Garden.

All hardy plants should be got in forthwith, and the places marked out and prepared for tender ones, in order that there may be no unnecessary delay as soon as it is safe to plant them; meanwhile continue to propagate Alternantheras, Coleuses, and Iresines, which cannot be planted too thickly together if they are to be effective from the first. Pelargoniums, Lobelias, Petunias, Heliotropes, and similar plants ought now to have full exposure, except on frosty nights, when canvas or mat coverings will be requisite and sufficient. Seedling bedders, such as Ricinus, Wigandia, Solanum, Cannabis, and Ferula, must still have the protection of a cool house or pit, and be afforded plenty of space to induce sturdy growth. As these cannot be planted with safety till the first week in June, if they are likely to get pot-bound they should be at once shifted into larger pots in order that no check may be given to the plants, as that causes premature flowering or fruiting, which, as a matter of course, hinders that noble development of foliage which has made them so popular as easily-raised sub-tropical plants.

Hollyhocks.—If plants propagated in spring are not yet planted out, that should be done at once; they will flower with the Dahlias in September. Plants out and growing should be mulched, but do not water, unless it is absolutely necessary, until the nights are warmer.

Pansies.—We cannot boast much of the growth of plants of these put out into borders; they do not seem to like the dry east wind which has so long prevailed; nevertheless the

plants look healthy, and fortunately are yet free from green fly. Plenty of blooms can now be obtained from plants in pots. See that they do not suffer from want of water, and give manure water at every alternate watering. Air the frame freely and pick off old flowers and leaves as soon as they show signs of decay, and arrange the plants so that they may present a pleasing effect.

Chrysanthemums.—The cold, retarding weather is showing its effect on Chrysanthemums in pots, and they need all the encouragement possible just now. The plants that are at all backward should be placed in the greenhouse, or be kept in a cold frame and somewhat close till they get a good start; the stronger and more forward plants need not be kept so close, but they should be sheltered from cold winds, and on no account be allowed to suffer from want of water. Stopping must be done as required; now is the time to lay the foundation of good blooming plants in the autumn, and vigilance should be the motto of the cultivator.

Clematises.—All are now making a rapid growth, and attention to training is necessary. In conservatories the shoots of the spring-flowering varieties, whether the plants be in pots or trained to walls or pillars, should be so tied in as not to hide the buds that are already expanding; on no account cut away these shoots, as they will yield flowers next spring. The stronger summer-blooming varieties need to be so trained as to fill the space required to be covered; the better the growing shoots are displayed, the finer will be the show of bloom in July. As soon as hot dry weather sets in, mulch with manure, and give occasional waterings with manure water.

Dahlias.—The young-struck plants should be potted on as required, and kept in a frame to make growth. It is scarcely safe to plant out till the first week in June, and that gives the plants time to grow to a good size and become well hardened. The dwarfer and more bushy the growth in the young plants, the better are they for planting out. The ground intended to be planted with Dahlias should be trenched and a good dressing of manure applied.

Daisies.—Beds of double Daisies are now in the full flush of their beauty, and their effectiveness is prolonged if the beds be occasionally examined and the dead flowers removed. This facilitates a succession of bloom, besides tending to keep the beds smart in appearance. The new variegated White Globe should be made a note of for use next spring; it is very fine indeed, and is superior to all the variegated forms bearing white flowers.

Delphiniums.—Strong plants which have been in the ground all the winter will now be greatly aided in their growth if the soil be loosened about them and receive a mulching of short manure and leaves. A bed of the finer varieties should now be made; and this will be found an effective manner of growing these fine perennials, as it enables the several kinds to be compared the more readily. A deep loam well enriched with manure and leaf-mould makes an admirable bed, and as the plants come into flower, they are materially assisted by a surface mulching of manure. There are now a number of beautiful new varieties well deserving cultivation.

Pyrethrums.—These fine hardy decorative plants are commencing to grow, and as snails and slugs are apt to eat the foliage, they should be looked after, The enjoyment of all such plants is enhanced by having a bed filled with various sorts, and now is a good time to make one. Those who have limited garden space might grow a few Pyrethrums in pots; they are easily managed, and are well suited to a cold greenhouse. It is a mistake to overpot them; in fact, many plants are thereby spoiled.

Polyanthus.—Choice varieties in the open ground will be greatly benefited by having the flower-stems removed, adding a top-dressing of some good soil. Any good varieties in pots may be ranged under a north wall on an ash bottom, or planted out in a prepared bed for the summer. The Gold-laced varieties, being much later, are now in full bloom. The named kinds are of somewhat delicate constitution and need special treatment. To yield good flowers they should be well established in pots; and when they have ceased flowering they also can be planted out. Those potted in the spring should remain in the pots all the summer, and be kept in a cool moist place. In saving seed from any particular variety, be content with two or three pods, and do not exhaust the plants by overtaxing their energies. A sowing may be made as soon as the seed is sufficiently ripe.

Hardy Fruit.

Unremitting attention will now be requisite to ward off the attacks of aphides from outdoor fruit trees; for if once these pests get a thorough hold upon the trees all hopes of fruit that is fit either to be seen or eaten are at an end, and the crop of next year is also endangered. Tobacco powder or snuff, applied through a flour-dredger, is the best remedy till the fruit is set; but afterwards frequent washing with clear water will keep down all kinds of insects and prove beneficial in a variety of ways. It should be applied with a certain amount of force, as through a syringe, garden engine, or hose. Keep a sharp look-out for grubs on Apricots and caterpillars on Gooseberry bushes, and as there is no remedy so effectual as hand-picking, let it be done at once. Pears, Peaches, and Apricots that have set their fruit thickly should be thinned out as soon as it can be seen which fruits are likely to swell best. As to thinning, it is very difficult to give precise directions, for experience alone must teach how thin they ought to be, or how many or much fruit a given tree is capable of bringing to perfection. Quality rather than quantity should be aimed at in fruit culture; certainly one large and well-flavoured Pear, Peach, or Apricot is preferable to two small ones, and especially with the two latter kinds, the stones of which are a consideration. When thinning, the guiding principle should be to have each fruit clear of its neighbour, evenly distributed over the tree, and fully exposed to sun, air, and light. Young recently-planted trees will require to have the shoots regulated and pinched, trained, or tied into the form they are to assume, in doing which care should be exercised to have the tree equally balanced, that the flow of sap may be alike over all parts. Any shoots that manifest a tendency to grow stronger than the rest may be checked by bending them downwards and keeping the lateral growths closely pinched off; but weak shoots should be allowed to retain all lateral growths made, at least for a considerable period. Canker and gum are the inevitable consequences of too tight ligatures and injury from nails, or bruises in other ways, all of which should be guarded against. Strawberries have made rapid progress during the last few days, and are now throwing up their flower-stems. If it has not yet been done, a mulching of long litter should be applied to them, for the double purpose of keeping the fruit clean at ripening time and to prevent the too rapid evaporation of moisture.

Vegetables.

The principal crop of Beetroot may now be sown, and as this is a deep-rooting plant, the ground should be deeply dug and well pulverised. The latter operation is essential for the generality of crops, and for none more so than those that penetrate deeply into the soil and are of a bulbous or tuberous rooted character. The seeds of this vegetable not suffering from the attacks of birds or insects, like many others, do not require sowing so thickly; but sufficient seed must be put in to secure a crop without having resort to fillling up blanks by planting; for, although Beet will succeed when thus treated, yet it entails more trouble, and in dry localities in a hot season these plants do not root so freely as some others. Plant out Lettuces that have been sown in the open air as soon as they are large enough to handle; if they are removed to where they are to grow when the leaves are 1½ in. long, they suffer much less than if allowed to get larger before removal. Upon this, in a great measure, depends their ability to stand long without running to seed; much also depends upon their receiving plenty of water until they have taken a firm hold of the soil. Hoe and stick Peas as soon as they are large enough, and keep the soil well drawn up to the stems of Cabbages or Cauliflowers, or they may suffer from the wind, especially in exposed situations. As Potatoes make their appearance above ground draw the soil well up to them so as to protect them from the slight frosts that are liable to occur. Potatoes that are planted at the foot of south walls will be much benefited by an occasional soaking with water.

GLASSHOUSES AND FRAMES.

Bulbs in Winter.—I have noticed complaints that hardy bulbs have not flowered satisfactorily this year. Now, my experience is quite to the contrary. I had from one to two dozen of each of the following in a cold greenhouse (frost excluded by a paraffin vaporising lamp, price about 30s.; sometimes two were required, greenhouse being 20 ft. by 8 ft.), which flowered without a single failure in February and March, planted in pots, pans, and boxes. It may be useful to remark that the bulbs never left the greenhouse, were planted in October, and placed under the stage till they showed above the surface soil of the pots (being watered very occasionally), then placed on the stage, where they flowered:—Double Snowdrops; Crocus Sir Walter Scott, Elfride, Imperati; Roman Hyacinth, (blue and white); Polyanthus Narcissus (paper-white); Roman gloriosa; Scilla bifolia, S. sibirica; Hyacinth (blue), grape large; Tulips (early double and single); Jonquils (single sweet-scented); Dog's-tooth Violet; Hoop Petticoat Narcissus. I also flowered the following in Jan. and Feb.:—Saxifraga Rocheliana, S. Wallacei; Anemone stellata; Viola White Czar; my one failure was Tritelia uniflora—they never started. Bulbs of same sort, and many others, have been and are flowering well in kitchen garden border—notably Iris reticulata in early March. Soil is light sand, well enriched with manure; been lately a field; climate, decidedly moist.—ALICE F. MALCOLM, *Achnamara, Argyleshire.*

Lilies.—Nothing is more useful for conservatory and greenhouse decoration than the autumn-blooming species of these plants, for which purpose, independently of their other merits, they deserve special attention. If amongst plants of Lilium auratum a few exhibiting a disposition to bloom later than the others be picked out and marked, they can, without any undue amount of retarding, be made most serviceable for the decoration of the greenhouse and conservatory in autumn. Then there are all the different varieties of L. speciosum that may by similar treatment be induced to come in at the same time. If a portion of the plants be now put at the north side of a wall, but not too much shaded or treated so as to chill them, until the weather gets warmer, they will afford a succession of flower after those more fully exposed to the sun are over.

Tuberous-rooted Begonias. — For blooming through the autumn months a good number of these should be grown, selecting those that are the most distinct in colour. They should acquire a useful flowering size, and if small-blooming bulbs be now at hand in 3-in. or 4-in. pots, keep them growing until towards the end of the month, when they may be turned out in a full open situation in light free soil, with just as much support in the shape of sticks and ties as the particular habit of individual plants are found to require. They should be well attended to with water, transferred to pots at the beginning of September, and kept at a little above an ordinary greenhouse temperature Thus treated, they will bloom satisfactorily. Where a sufficient number of larger plants exist, they may be kept in pots proportionate to their size, placed for a few weeks in a pit or fram and then have their pots plunged out-of-doors, stopping them once or twice during the season to induce a close enough habit, and they will keep up a complete mass of flowers through the autumn. For general decorative purposes some of the less perfectly-formed flowers, from the florist's point of view—that is, those that have longer narrower petals—are more effective, and have a more elegant appearance than the rigid, stouter-growing kinds.

Primula cortusoides amœna.—This Primula is one of the easiest to cultivate. It should be grown in pots, large or small according to the size of the plants, in a mixture consisting of two-thirds rich loam and equal quantities of well-rotted manure and leaf-mould, adding a small portion of sand. Pot them immediately after they have flowered and place

them on a bed of ashes, giving them plenty of water. They are greatly assisted by being fed during their growing and flowering seasons with a little weak liquid manure. Winter them in a cold frame, giving them abundance of air except during severe frost, and under this treatment you will get both good foliage and flowers. We saw a fine display of them the other day, in Mr. Dean's Nursery, at Bedfont, where are also many fine varieties with lacinated blossoms of a very bright colour.

Ornamenting Greenhouse Walls.—Where climbers are trained on greenhouse walls there are often spaces which might be made ornamental by the introduction of a few bracket plants: and even when climbers completely cover the walls, such an arrangement as the one shown in our engraving, which was made from nature in Mr. Williams's nursery at Holloway, would greatly add to the effect of the house. The engraving in question represents a pocket made of virgin cork, into which may be put a few handfuls of soil, and in this is planted a fern such as Nephrolepis exaltata, round the base of which may be planted Isolepis gracilis, Ficus repens, or any other plant with a light pendulous habit of growth.

The Australian Bird's-nest Fern.—This is a fine Fern for a stove or warm greenhouse. Its fronds attain under good culture a length of from 4 ft. to 6 ft., and they are often 6 in. or more in breadth. The young fronds are of a delicate pea-green colour, very glossy and

Australian Bird's-nest Fern (Asplenium Nidus avis).

effective. It grows well in turfy loam and leaf-mould, with a liberal addition of broken bricks or old flower-pots and a little charcoal. It needs plenty of water when growing freely, and it makes a good exhibition plant. Its name is Asplenium Nidus avis.

ANSWERS TO QUERIES.

1954.—**Constructing a Fernery.**—If the sides require simply covering from top to bottom with virgin cork, the readiest method will be to board the three walls with any kind of old wood on which to nail it. Get thinnish pieces of cork, as they are easier to fasten and lie flatter. Those that are thick, or bent so that they represent half a tree trunk, must be sawn down the back with a tenon-saw, leaving them thin enough for the nails to bite well in the wood after piercing the cork. A nail driven through the centre of those pieces slightly semi-circular will bring it flatter with the boarding, and render it easier to fit other pieces. The spaces between the larger pieces may be neatly filled up by breaking bits off a large thin piece, and cutting with a pocket knife to fit. With a little care, this can be done so that the joints are imperceptible. After covering the walls, the effect may be further enhanced by making small brackets, on which to place pots, either of flowers or Ferns, covering the front of the framework with cork, which hides the pot and shows only foliage and flowers against the background of cork. If these brackets are arranged in tiers, they will give a picturesque effect. This can be easily done by simply having two or three narrow shelves, according to space, nailing cork to the fronts. In this case, the cork on the wall need only commence above the highest of the shelves, but all should be so arranged that no woodwork is visible. Places may be made here and there in the rockwork, near the roof, to hold a small pot containing a creeper of some kind, or Moss or Fern, at pleasure; these add to the beauty of the whole and give a more romantic appearance to the rocks. A fountain might be made either in one corner, the middle of one side, or the centre of the Fernery. If in either of the two former positions, a little cascade falling into the tank at foot, in which are a few gold and silver fish, might be added with effect. If in the centre, then a jet of water rising from a bowl or tank of zinc will suffice. The fixing a fountain is by no means a difficulty if there is a supply of water at hand. —HY. BENTLEY.

2030.—**How to Arrange a Garden with Flowers.**—Perhaps the best arrangement for the space named would be to make a centre walk 6 ft. long and 3 ft. wide, beginning at the bottom of the garden, and two side walks, 3 ft. wide' 3 ft. long, and 3 ft. from the side fences, beginning at the end nearest the house; then join these three walks by two slanting ones, also 3 ft. wide, so as to divide the garden into a wedge-shaped centre bed, and two somewhat leg-of-mutton-shaped side beds. An edging of ornamental tiles is most suitable for a small garden, and any dwarf plants which can be purchased may be planted next it, such as Echeveria secunda glauca or the very dwarf Lobelia named pumila compacta. Next these may be placed Golden Feather Pyrethrum and Amarantus melancholicus ruber. Next to these, towards the centre of the beds, may be planted any Petunias which can be purchased; and the centre of the triangular bed may be filled with Geraniums, Pentstemons, or Asters; all these plants are procurable in a state fit to be planted out at once. Climbing Tropæolums may still be sown with success to cover the fences, so also may Convolvulus major. The double Clarkias are very showy annuals, about 18 in. high. Coreopsis, 2 ft. high, may still be sown, also Helichrysum compositum and the dwarf Nasturtiums; Tom Thumb King, King Theodore, Crystal Palace Gem, Pearl, and Ruby King are good sorts. Marvel of Peru, already started in pots, would do duty for shrubs for the first summer.—J. D.

1958.—**Treatment of Vallottas.**—Pot them off at once into small pots in a compost of half loam and peat. Keep them for a time rather close until they become well established, when they should get a free circulation of air on all favourable occasions, and be freely watered in hot weather. A light airy greenhouse or a frame is the best place for them during the summer months. The following spring shift into 4½-in. pots, and treat as before; the next year they will bloom freely.—J. C. B.

1913.—**Pruning Coronillas and Genistas.**—Prune back the Genistas immediately after flowering. It is not desirable to cut them in very hard unless the plants have become very leggy and ugly, in which case they may be pruned back to the bare old wood. If the plants are fairly compact, leave about 2 in. of the previous season's growth. Keep them on the side of dryness until the new shoots are fairly formed. As soon as the latter are about 1 in. in length shift into the next sized pot. Keep rather close for a time, water freely when fairly established, and place in a sheltered spot in the open air about the latter end of August, at which time occasional watering with soot water will prove beneficial. This treatment will result in the formation of strong wood and healthy foliage, such plants blooming with great freedom in the spring. Coronillas need but little pruning; merely shortening back the flowering shoots will suffice for them. In other respects they may be treated in the manner recommended for Genistas.—J. C.

1966.—**Sowing Seeds of Coniters.**—Sow the seed at once in pans in a compost of leaf-mould and loam in equal proportions. Place the pans in a frame, if possible with a north aspect; maintain the soil in a moist condition, but avoid heavy waterings, and shade from the sun. As soon as the seedlings appear inure them to full exposure, allowing them to remain undisturbed until the flowering year, when they may be planted out in the open ground.—C.

2062.—**Cottagers' Flower Shows.**—Success lies in distributing the prizes over as large an area as possible, so that half the competitors get at any rate something. The prizes must therefore be numerous, and, unless your purse is a long one, small in amount. You wish to encourage the unsuccessful. To this end, restrict the number of prizes that can fall to a single competitor; otherwise a few enterprising men will keep all in their own hands. Each competitor has a number given him, of which a list is kept; and these numbers, and not his name, are appended to the several articles exhibited. This obviates the suspicion of unfairness. The first week in September is about the best time. Have two judges; two strings to the bow are useful; and an amateur and a professional will correct one another's deficiencies.—H. W. T.

2038.—**Glazing Without Putty.**—Herewith are particulars of my greenhouse:—Shape, semi-span; length, 18 ft.; width, 10 ft.; front wall, 3 ft. 6 in.; back wall, 6 ft. 6 in., against which is a shed containing potting bench, stoke-hole, &c.; angles of roof about 40°; aspect nearly south; heated with saddle boiler and 4-in. hotwater-pipes; contains five rafters, including ends 4½ ft. by 2 ft. (a batten sawn in half); and the horizontal rafters are about 2 ft. 2 in. (a batten sawn in four), which are let into the principal rafters about 1 in., and securely fastened; the glass is 22 in. by 14 in., each pane of which is fastened by two copper clips about 3½ in. long, nailed on the rafters, and bent over at the bottom, which very effectually secures them. All through the past winter I have had no difficulty in maintaining a temperature of 50°; and close by me there is a range of seven large span-roofed houses, heated by one boiler, and which are built on the same principle, in which are grown Palms, Dracænas, exotic Ferns, &c., and such like plants, to meet the requirements of a West-end decorator florist; so "J. T." can rest assured such houses are suitable for forcing.—H. S. HALL.

2033.—**Large Wellingtonia gigantea.**—"Tasmanian" is wrong in supposing that the Wellingtonia gigantea exhibited at the Crystal Palace came from Australia. It is well known as the Mammoth Tree of California, of which it is a native. It was first discovered near the sources of the Stanislaus and San Antonio rivers, in a grove now known as the Mammoth-tree Grove, about 4590 ft. above the level of the sea, in long. 120° 10' W., lat., 38° N. The specimen referred to was known as the "Mother of the Forest," the bark of which was taken off to the height of 116 ft., and brought to the Crystal Palace about 1856, and was burned at the fire which occured at the close of 1866. It measured 357 ft. in height and 96 ft. in circumference, while the bark was about 18 in. thick. Another specimen was 450 ft. in height, and 116 ft. in circumference, and valued at £6250 at a penny per square foot of inch deal.—M. CUTHBERTSON.

2041.—**Culture of Double Primroses in Pots.**—Beyond the difficulties incidental to the growth of all kinds of plants near London, there should be no special difficulty in growing double Primroses in pots. We have seen them well done in 5-in. pots within a few miles of Charing Cross, being simply potted very firmly in good turfy loam and a fair proportion of rotten manure well mixed. At all times of the year a

cool frame with a north aspect is the best place, although the aspect is of less consequence in the winter months. The great secret in double Primrose culture is to keep the plants cool and the foliage fresh. Such common kinds as the lilac, white, and sulphur, will grow almost anywhere; but the crimson, purple, rose, and giant yellows are more chary, and want special attention. It is found to be a good plan to divide the plants as soon as the bloom is over, and repot into smaller pots, keeping the plants shaded for a few days.—A.

2032.—**Carnations, Picotees, and Pinks.**—It is now an excellent time to sow Carnation, Pink, and Picotee seed. As a rule, it will germinate as freely in the open ground as Sweet William or any other Dianthus seed; but, of course, seed of choice things are best sown in pans or shallow boxes under glass. These seeds will come well, if good, in a cold frame or greenhouse, and better probably than with bottom-heat, as the seedlings will be more robust. When the young plants are strong enough, they should be pricked out thinly into other pans, and later on from these into the open ground where they are to flower.—A. D.

1957.—**Treatment of Hoya Carnosa.**—This plant thrives best and flowers most freely when planted out in a bed of good peat and loam of equal proportions. If a back wall exists in the structure, or pillars or supports of any kind, the plants may be trained to them. Where convenience does not exist for planting them out, they may be grown along for a season until well established in 6-in. pots. The following spring prepare some 10-in. pots for their reception, draining them well and covering the drainage with some Cocoa-nut fibre or fibrous peat. The compost should be lumpy and well sanded, pressing it firmly round the old ball. The plants may then be placed in any desired position, there to remain, not needing to be shifted for years. During summer the Hoya delights in a moist atmosphere, and when the pots become well filled with roots, frequent supplies of water will be needed. An annual top-dressing of some artificial manure will also prove beneficial. Although this Hoya is best adapted for covering spare pieces of wall, or clothing pillars in warm houses, it may also be grown in the form of a specimen. All that is necessary when shifting it into a large pot is to place some stakes round the edge of the pot and train the shoots to them.—J. C., *Byfleet.*

1915.—**Greenhouse in the Engine-room.**—We presume that the structure in question will be maintained at an equable temperature during the winter months. An average temperature of 50° to 55° would suffice to maintain in health a number of fine-foliaged plants, and would suffice for forwarding into bloom such flowering subjects as bloom during the spring months. Amongst plants distinguished for leaf beauty may be mentioned Dracænas rubra, congesta, indivisa, ferræa, and terminalis; Aspidistra lurida variegata, Grevillea robusta, and such Palms as Corypha australis, Chamærops excelsa, Rhapis flabelliformis, Latania borbonica, and Areca lutescens. Intermixed with these may be such fine-growing Ferns as Asplenium bulbiferum, Pteris arguta and serrulata, and Adiantums formosum and cuneatum. The great point to observe in the culture of these foliaged plants in such places is to maintain the functions of the plants in a healthy state by frequently sponging both the upper and under surfaces of the leaves. It is also indispensable that they be guarded against hot sun; and if no other means exist, the glass must be sprinkled with whitewash. A portion of the roof should, however, be kept quite clean, in order to accommodate such light-loving subjects as Pelargoniums and succulents of various kinds. During the summer months all the ordinary soft-wooded flowering plants should thrive therein; and annuals of various kinds, such as Mignonette, Rhodanthes, Godetias, Browallias elata and Roezli, and Balsams, may be sown early in the year. Petunias may also be sown in the spring, and make excellent subjects for hanging baskets, especially when used in combination with other flowering plants A nice Fuchsia in the centre, for instance, with Petunias and Lobelias, and a plant or two of Iresine Lindeni makes a very pretty and effective basket. Other good plants for hanging baskets consist of Russellia juncea, Saxifraga tomentosa, Dracæna vivipara, and such Ferns as Goniophlebium subauriculatum and Woodwardia radicans. Primulas sown in the spring may be grown along to flower during the winter months; and young plants of Cyclamen persicum potted now will come into bloom at the same time. In early spring a few Roses, Spiræa japonica, Deutzias, and bulbs of various kinds may be brought along; and we would also recommend the culture of a few such winter-flowering Begonias as Ingrami, manicata, nitida, sanguinea, Weltoniensis, &c. As climbing plants for training up the roof, nothing is prettier than the variegated Cobœa, the variegation of which remains ever fresh and constant, and which requires but a limited root accommodation. There are also Passifloras, Tacsonias, and Maréchal Niel Rose, which may be utilised in a like manner. There is, however, one important point which must not be neglected, viz., the making provision for a free supply of air during the summer months. Ventilators should be placed at frequent intervals in the roof, and, if possible, a few wooden flaps should be let into the side brickwork.—J. C., *Byfleet.*

1961.—**Mixed Houses of Plants.**—A temperature of from 45° to 50° by day, and

Bracket of Ferns and Grasses.

anything under freezing at night, will suit most kinds of soft-wooded bedding plants. Tuberous-rooted Begonias may be wintered at the same temperature; but Bouvardias need, in order to flower them, a constant and regular warmth. No success would attend the attempt to grow winter-flowering or any other kind of Orchids with Heaths, Violas, &c., which need a constant free circulation of air around them in favourable weather, whereas Orchids require a close, semi-saturated atmosphere. To grow cool Orchids well they must have a structure devoted to them, where the proper atmospheric conditions can be maintained. There are, however, many kinds of plants, such as Ferns and foliage plants, which will thrive in their company, and would help to give variety. With the exception of Orchids, all the plants enumerated may he wintered at the temperature above given; but free ventilation must be given in mild weather. For whilst such things as Camellias, Roses, &c., might be forwarded by keeping them rather close, such treatment would prove inimical to the welfare of Geraniums, Heaths, &c.—J. C.

1927.—**Gardening in London.**—If the situation is at all open to the sun's influence annuals of many kinds may be sown during the next six weeks. For present sowing there are Clarkias, Godetias, Collinsias, Calliopsis, Candy-tuft, Leptosiphon; and in May, Tom Thumb Nasturtiums, Scarlet Linum, and Convolvulus Minor may be sown. Geraniums, Calceolarias, Lobelias, and Petunias may be planted out in the latter end of May, thus maintaining a show of bloom throughout the summer months. A dozen or so Chrysanthemums planted now in good soil would prove a satisfactory investment, inasmuch as they thrive in the London climate and bloom when bloom is scarce. If there is an existing wall, plant against and train them to it. We would also try some of the bedding Violas, and some of the varieties of Viola cornuta, seeds of which may be bought at a moderate price. Success will entirely depend upon the aspect and general situation of the plot of ground. The best way is to try plenty of plants, and reject those which do not flourish. In the course of one or two seasons sufficient experience will be gained to render the work of selection an easy matter.—C.

1931.—**Varieties of Chrysanthemums.**—The twelve best varieties are:—Incurved: George Glenny, Venus, Mrs. George Rundle, Lady Slade, Eve, Mrs. Sharp, Miss Hope, Mrs. Dixon, Her Majesty, Pink Perfection, Areginas, Lady Talfourd. Pompones: Princess Matilda, Mr. Astie, Madame Montells, Astrea, Little Beauty, Mrs. Dix, White Cedonulli, Aigle d'Or.—J. H.

1922.—**Propagating Aralia Veitchi.**—Aralias of the Veitchi type are mostly propagated by means of cuttings of the previous season's growth, taken off in the early months of the year. With two eyes only inserted singly in small pots in sandy fibrous peat, and placed in a glass case or under a bell-glass in a warm structure, provided with the special accommodation in the way of bottom-heat. The soil should be maintained in a moist condition, avoiding heavy waterings, and the pots must be plunged up to the rims in ashes, Cocoa-nut fibre, or tan. If the bottom-heat is supplied by means of hot-water pipes, great care must be taken not to unduly heat them, or there is a danger of injnry resulting to that portion of the cutting from whence roots should be emitted. Every morning the glass should be removed for an hour, and the greatest care must be taken to shade them from hot sun. To ensure success in the propagation of this tribe of plants, much watchful care and some experience are necessary.—B.

1986.—**Growing Watercress.**—You can grow Watercress from October to February in a cold frame. Put cuttings in and keep them well syringed; cover with mats during hard frost. Or you can grow them in the overflow from a well. For making a bed, get some clay and soil mixed, level it down, and beat it well with the spade. Make the bed rather high at the bottom end, so that the water will run slowly off. Get some cuttings and plant them, and you will soon have Watercress: or put some cuttings in pots and keep them standing in saucers full of water; syringe often overhead. In this way you can grow Watercresses in the greenhouse.—J. H.

—— Get a pan about 8 in. wide and 9 in. deep, perforated at the bottom. Half fill with old mortar, lumps of chalk, and broken bricks about the size of one's fist. Lay a little Moss on these, and heap up a good body of rich soil on top, pressed firmly down so as to have a convex shape. Then dibble in all over the soil about 3 in. or 4 in. apart, very small cuttings of Cress. Stand the pot in a pan of water; 3 in. of water is sufficient. Smaller pots may be used, but this size is the best. Rough lumps of chalk and old mortar are indispensable. The pan should not be wholly immersed in water.—C. HARXUROT.

1935.—**Tree Carnations and Picotees.**—Those who grow the Tree Carnation extensively make a point of striking cuttings every year, discarding the old plants; this, however, necessitates the accommodation of a warm house or propagating-pit in the early part of the season. Small growers, however, not possessing this convenience may retain their old specimens, and with careful treatment such plants may be induced to flower freely. As soon as the plants have done blooming, train them out into a sunny situation in the open air, attend carefully to the watering, and about the beginning of July shift them into the next sized pot in a compost of two-thirds turfy loam and one-third leaf-mould, adding thereto some silver sand. Drain the

pots well, place a little Moss on the crocks, and a pinch of soot on the Moss to prevent the entry of worms. By no means use manure of any description, but water when the pots get full of roots with soot water. Place one or more neat stakes to each plant and train the shoots to them. Should mildew appear, which may readily be perceived by the flour-like appearance of the leaves, dust immediately with sulphur, and for green fly dust with Pooley's Tobacco Powder. By the end of September place under cover, but ventilate freely. The buds being then formed, will gradually extend in a cold greenhouse during the winter and early spring months. The same treatment will suit Picotees. Suitable soil in small quantities may be had of from any good nursery.—J. C. B.

1999.—**How to Earth up Crops.**—After loosening the earth between the rows with a fork, take the hoe; standing outside the first row, draw the earth up to the inside of it; next draw the earth up to the inside of the second row; turn round, and do the outside of the first row; then the inside of the third; the outside of the second, and so on. This leaves no footmarks, and requires no subsequent raking. Two positions may be tried while earthing up. Stand directly facing the row the other side of which is being done, both feet being in one space; or stand somewhat sideways to the rows, one foot in each of two spaces, the feet parallel to the rows. When working along any space for the first time, strike the hoe in a little beyond the centre of the space. When in the same space again, strike the hoe a very little into the back of the earth drawn to the other row. I have seen crops very neatly earthed up with the spade.—PED.

2034.—**Graveyard Gardens.**—The drip from a Yew tree, or, indeed, from any tree, must of necessity be very detrimental to flowers or plants of any kind on a grave, and it is most improbable that any plants could be expected to produce flowers that would be at all pleasing or satisfactory. If a bright appearance was desired, it would be absolutely necessary to continually furnish the grave with flowers in pots, but that would be troublesome and costly. The best arrangement probably would be to cover the grave garden with carpet plants, such as Sedum lividum and glaucum, and Veronica repens, and plant Echeverias, Pachyphytums, Sempervivums, &c., as dot plants. These would be but slightly affected by drip or shade.—D.

1960.—**Culture of Sunflowers.**—The common Sunflower is a hardy annual, or rather is treated as such; and the seed may be raised easily if sown in pots or pans and placed in a window, frame, or greenhouse, but will germinate all the more rapidly if a little bottom-heat be given. When the plants are a few inches high, they should be pricked out into a frame and protected from snails, and be put out into the open ground when well hardened and strong. Sunflowers will thrive well in any good garden soil, the size of the flowers being large or small as the ground varies in quality. In exposed places the plants should have some support.—D.

2042.—**Pansies for Exhibition.**—The first thing to do in growing Pansies for the purpose of exhibiting them is to obtain young or newly-struck plants in pots, of good named varieties, as, unless good sorts are obtained to start with, all labour will be thrown away. Pansies are divided into two sections—the show or English kinds, and the Fancy or Belgian kinds. The first comprise five divisions, as under:—white, yellow, and purple, selfs and white and yellow ground belted Pansies. The self kinds must be of clear decided colours, and a black and well defined blotch under the eye; the belted kinds have a ground of white or yellow, also with centre blotch, and a broad margin of bronzy-red, chestnut, purple, crimson, or some other hue, and the colours must be in all cases dense, and the margins very distinctly defined. All these flowers should be rounded, of good form, and stout of petal; also of good size, but great size is of less importance in an exhibition flower than perfection or quality in the markings. The Belgian or fancy Pansies are remarkable for the strange and almost gorgeous variety of their colours, and many of the blooms are of unusual size. A correct fancy Pansy should have a very large deep-coloured blotch, covering nearly the whole of the bottom petal and portions of the side petals; and the other portion of the flower may be white, yellow, buff, red, maroon, purple, crimson, and various other shades, but none so dense as the black hue of the centre blotch; some also are flaked or parti-coloured, but all good ones are singularly showy and beautiful beyond the imagination of those who know Pansies only by what they have seen of common strains. Plants struck from cuttings in the autumn can now be had of all the best of these kinds in small pots, at prices varying from 8s. to 12s. per dozen; and a selection left to the florist, according to price to be paid, will be certain to give good variety and fine kinds. If grown in pots these plants should, when obtained, be shifted into 6-in. pots, and in soil that is composed of good turfy loam, well-rotted manure, and a sprinkling of silver-sand; the plants well down, and the points pinched out to induce breaking at the sides. These shoots should be pegged down into the soil when large enough, and as the pots fill with roots some weak manure-water may be applied with advantage. A cool frame shaded from the sun, and facing north, giving plenty of air, is the best place in which to grow pot Pansies. Similar plants may be planted out in a bed well prepared, the soil deeply trenched and heavily dressed with rotten manure forked in on the surface; the plants put out about 12 in. apart each way, and the side shoots pegged down as advised for pot culture. A top-dressing of rotten manure and Cocoa-fibre refuse will help the plants, and in hot sunshine they should be shaded.—A. D.

1962.—**To Make a Garden Pay.**—No considerable profit can be made by growing common fruit and vegetables on one-third of an acre, especially in an unfavourable season, such as last year. It can only be done by producing the finest and choicest articles at the earliest possible season, so as to command fancy prices. I have three quarters of an acre, and sell what my family do not want. I have found Kidney Beans, Celery, choice Raspberries, Daisies, and Polyanthuses, among the most profitable things to grow.—F. T. W.

2040.—**Gladioli for Succession.**—The following are early-blooming kinds, and should be planted between December and March:—cardinalis, bright scarlet; Colvilli albus, pure white; luricans, orange-scarlet; insignis, rich scarlet; and Washington, bright rose-lilac. The autumn-flowering varieties should not be planted before the middle of March, deferring the planting until the middle of April where the soil is of a heavy retentive nature. The undermentioned are some of the best in this class. La Candeur, white; Le Vesuve, intense scarlet; Maréchal Vaillant, brilliant scarlet; Ophir, dark yellow; Benvenuto, orange-red; Belle Gabrielle, lilac-rose; and Edith D'Ombrain, white ground suffused with carmine.—B.

2043.—**Large Flowering Cactus.**—The faded leaves are in all probability the result of imperfect root action. When the plant has finished blooming, turn it out of the pot; examine the drainage, which will probably be found defective, in which case take another pot of the same size, drain it well, and, having worked away carefully with a pointed stick as much of the old soil as possible from the ball, so that a little fresh fine well-sanded compost may be gently worked down between it and the sides of the pot, place the plant in an airy sunny situation, and water only when quite dry.—C. B.

2044.—**Shrubs under Trees.**—We think that nothing would be so likely to answer the purpose as Holly, which thrives very well in shady situations. Many kinds of evergreens, such as Yew, Laurels, Rhododendrons, Box, and Berberis aquifolium, grow very well under trees, but it is necessary that in planting a good start should be given them by well preparing the soil for their reception, otherwise they fail to attain the vigour necessary to enable them to make satisfactory progress under such comparatively adverse circumstances. It must be remembered that the soil everywhere in the vicinity of trees is full of their fibres, consequently becomes very dry in the summer, and is to a great extent impoverished. Therefore, in forming a Holly hedge a trench quite 2 ft. deep must be taken out, mixing with the excavated soil some good manure, and filling in again. In ground thus prepared, especially if the plants are well watered in hot weather, an abundance of fibre will be formed, which, providing the desired amount of nutriment, will cause the plants to make a vigorous growth. Now is a good time to plant.—J. C. B.

2056.—**New Zealand Flax.**—In order to grow the New Zealand Flax successfully in the open air, a sunny but somewhat sheltered situation should be accorded it. This plant revels in heat and moisture during the summer months, but dislikes stagnant water at the root; consequently means must be taken to provide free drainage. In a well-drained garden all that is necessary to do is to provide a free root-run in congenial soil; should, however, the situation be low and damp, with no free exit for superfluous moisture, the soil must be taken out quite 2 ft. in depth, and 6 in. of brick rubble placed at the bottom. On this lay some turves, grass side downwards, and fill up with a good compost, consisting of three parts sound loam and one part leaf-mould and rotten manure. In light sandy porous soils there is no need to provide this drainage; and where the natural staple is a sandy loam, the admixture of a little manure and leaf-mould will be all that is required. When planted in clumps, the Flax produces a fine bold effect, especially when in near association with other forms of plant life. Standing out somewhat prominently before masses of evergreens or shrubs of any description, its characteristic features are more freely displayed. It is, however, a fine subject for isolating on the Grass. In severe weather a few stakes should be placed round it, stuffing in some Fern and covering with a mat.—J. CORNHILL.

2096.—**Geraniums not Flowering.**—Probably the plants are in bad health. How are the roots? Are there worms in the pots? Or have they been kept so close as to produce spindly growth? Some such cause must have been at work. Geraniums now should have plenty of ventilation, be kept near the glass, and be watered regularly as they require it, giving weak manure water two or three times a week—that made from soot is excellent to import a dark healthy green to the foliage and give substance to the flowers.—E. H.

2057.—**Orange Tree not Flowering.**—No dependence can be placed on the fruiting of Orange trees raised from pips; they should be grafted or budded with a standard variety. It sometimes happens that a seedling will fruit at a tolerably early period of its existence, but more often years elapse before flower-buds are formed. If the plant in question is root-bound and healthy, shift it at once into the next size pot; if, on the contrary, it should not appear to need fresh potting, water occasionally with soot water. Admit plenty of light, but screen from the hot sun, and place in the open air about the middle of August for a period of three weeks. If there is any inclination on the part of the tree to form flower, it will do so under this treatment.—C.

2039.—**Dracæna Leaves Withering.**—The only way to preserve the foliage of a plant in a perfect state is to maintain the functions in a healthy active condition. The withering of the leaves is generally caused by a defective root action, brought about by injudicious or neglectful watering. With respect to this latter operation, the golden rule is to allow the soil to quite dry out, and then give sufficient water to thoroughly moisten the soil. If the plant is growing in a room, the leaves should be sponged at least once a week, both the upper and under surfaces. An observance of these instructions will maintain the plant in health and vigour.—C.

2036.—**Bottom-heat for Frames.**—In my article on the above subject in No. 55 some mistakes were made. At line eight read 24 in. for 21 in., and sun-burner seven-eighth inches *wick*, instead of seven-eighth in. thick. "F. H. W." is right in supposing that the top of chimney should be 2 in. from the bottom of boiler. The tin lamp should hold about two quarts, so as to burn for twenty-four hours at least without attention. The conical chimney 7 in. high is glass, and sold at any lamp shop. The outer cylinder is thin sheet iron. My glass frame I find most convenient; for, by having a stand with two shelves, I can remove the seeds when germinated, and the same with struck cuttings, to a lower temperature, which hardens them off before potting.

Its dimensions are as follows :—Height at back 3 ft. ; height at front, 2 ft. 3 in. ; width 2 ft. 3 in. ; length, 3 ft. 3 in. ; top sash on hinges to raise up if more ventilation is required ; front frame, 3 ft. by 2 ft., is made separate, and lifts out for putting in stuff and watering. If "F. H. W." is about to make one, I would advise him to procure the baked clay slabs, as being far better than slate. They can be made to order at any brick-maker's, and if made in three pieces they will not warp in the baking. Care must be taken that the boiler is not without water ; the better plan is to fill it up twice a week.—PETROS.

2059.—**Outdoor Winter-blooming Plants.**—The Christmas Rose, the Winter Aconite, and the Snowdrop are amongst the earliest blooming plants ; there are also Alyssum saxatile, Arabis albida, Aubrietia græca, Daffodils, Crocuses, Daisies, Polyanthuses, and Primroses of many shades of colour, all blooming at an early period of the year. With the exception of the two last-named, all the above-mentioned should be purchased as plants ; they are to be obtained at a reasonable price, and, if nice little healthy plants are obtained, will form good specimens by next season. Pansies should not, however, be forgotten, the seed of which may be sown in July in a shady situation, and the little seedlings, when large enough, should be pricked out in a bed of nicely prepared soil, to be placed in their blooming quarters by the beginning of October. Primrose and Polyanthus seed may be sown now in a pan or pot of sandy soil, keeping it in a frame or shady place until the plants are well up ; then prick them out, as recommended for Pansies, and transplant later on. We would also try a few Violets and Wallflowers (the latter may be sown now), and Pinks. Silene pendula is a pretty and effective spring bloomer, seed of which may be sown in August, and the young plants placed in position when large enough to transplant. If the situation is not too secluded, or exceptionally unfavourable to plant-life, we should suppose that any of the foregoing list would thrive fairly well.—J. C. B.

2027.—**Acacia in Window.**—The lower leaves of Acacia lophantha generally fall as the plant increases in size. We should, however, advise that the roots be examined, in order to ascertain if drainage is defective. Should the young roots at the bottom of the pot appear decayed, take a fresh pot of the same size, well drain it, work away as much of the old soil from the roots as possible without injuring them, which will leave sufficient space for working in some fresh well-sanded mould between the old ball of soil and the pot. This treatment, combined with careful watering, will induce renewed root action, and will have a corresponding effect upon the leaf growth. Water only when dry at the present season, giving enough to thoroughly permeate the soil. In the hot summer weather place the plant in the open air, choosing a sheltered, somewhat shady situation.—J. C. B.

2089.—**Dandelion for Salads.**—The common wild Dandelion is the one referred to ; it may be cultivated and used like Chicory. Sow seeds now in drills 9 in. or 10 in. apart, and thin out the plants to about the same distance in the rows. If seeds cannot be obtained dig up roots anywhere, and plant, leaving the intervals named above between. Keep all flowers pinched off, and blanch the tops by excluding the light, the same as with Endive. Cultivation improves the size of both root and leaves. Some of the large roots dug up from the wayside or meadows, the leaves cut off nearly to the crowns, the roots planted 3 in. or 4 in. apart in boxes, and put in a dark place, would soon yield a serviceable salad to mix with Lettuce, &c.—E. H.

2049.—**Temperature for Ferns and Anthuriums.**—Adiantum Farleyense and Anthurium Scherzerianum require a minimum winter temperature of 50° by night and 55° to 60° by day. By the month of March these temperatures should be increased 10°, otherwise these heat and moisture-loving subjects do not develop freely. They succeed best when so placed that a volume of heat passes around them, such as on a slate bench over hot-water pipes, the surface of the slates being covered with Cocoa-nut fibre, maintained in a moist condition. In this manner a constantly saturated atmosphere is kept up without needing the too frequent use of the syringe. During the summer season, unless it should prove exceptionally cold, but little artificial heat will be necessary.—J. C. B.

2047.—**Specimen Blooming Plants.**—We can think of nothing more suitable for the purpose named than Fuchsias and Geraniums. Free healthy young plants grown along from the present time under favourable conditions would attain fair dimensions and might be had in full bloom by the time specified.—B.

2069.—**Cimicifuga racemosa.**—The Cimicifugas grow freely enough in soil of the ordinary description, preferring a sandy loam into which a portion of vegetable matter enters. A somewhat sheltered and partially shaded situation appears to suit them, one such as may be easily found in the shrubbery or wild garden. In hot dry weather fresh-planted specimens are benefited by copious waterings.—B.

2045.—**Rusty Geranium Leaves.**—The plants in question have probably been watered too frequently. A sour state of the soil will cause rust. Allow each plant to dry well out between each watering. Ventilate freely, but avoid cutting winds.—C.

1952.—**Slugs in Greenhouses.**—I have tried many a way to get rid of slugs, and find the best plan is to lay baits of flour paste, oatmeal porridge, or bran, on pieces of slate or glass. Look over your baits with a light at night, picking up all the slugs you can get, and putting them into a dish among salt and water. Salt may also be sprinkled about with advantage where there is no danger of injury to plants.—M. CUTHBERTSON, *Rothesay*.

2031.—**Eighteen First-class Dahlias.**—Fancy—Gil Blas, Grand Duchess, Flora Wyatt, Lady Spokes, Her Majesty, Henry Walton, Startler, Miss Ruth, Queen Mab. Selfs—Criterion, Rev. Dr. Moffat, Sir G. Smyth, Thomas White, Thomas Goodwin, John Standish, Royal Queen, Miss Henshaw, Mr. Dix.—YORKSHIREMAN IN CUMBERLAND.

2058.—**Making Screens.**—If "A. E." adds a little glycerine to his gum I think his scraps will adhere to the leather.—W. E.

1974.—**Soot-water for Plants.**—To mix soot with water put a handful into an ordinary watering-can ; then add as much water as will wet it, say about ½ in., take the can, and swing it round so as to make the whole go quickly round inside, when it will soon mix. In putting a quantity into a barrel use a stick to stir. The secret is in not putting in too much water.—M. CUTHBERTSON, *Rothesay*.

2053.—**Making a Screen.**—Two ounces of Russian glue dissolved in a quart of water ; let it simmer until reduced to a pint, put on warm with a soft camel-hair brush. Next day varnish with paper varnish.—DIDO.

1973.—**Soot in Gardens.**—If the soot is buried 1 ft. or 18 in. deep, you may plant ordinary flowers or vegetables over it at once, except, perhaps, such crops as Parsnips.—M. CUTHBERTSON.

1959.—**Perennials for Sowing in July.**—The list of hardy perennials of a compact habit that can be raised from seed and will bloom during the latter half of the year is an exceedingly limited one, as by far the larger portion bloom in the spring or early summer. Even the Sweet William, one of the best, flowers in June, and Pansies raised from seed the previous year bloom their best in spring. The Antirrhinum and Pentstemon are both good in their way. Carnations and Picotees sown in July should flower late, as also will the double white Chrysanthemum inodorum, and the various forms of Indian Pink. Myosotis sempiflorus will bloom late in a cool damp place.—D.

1968.—**Crown Imperials from Seed.**—It will probably be three or four years before Crown Imperials from seed will bloom, as all bulbs of this class are slow growers. Keep the seedlings in pots for a year, and then turn them out into the open border, marking the place where planted, and giving the soil a little manure.

2098.—**Plants in Bedrooms.**—Are plants kept in a bedroom window injurious to health?—W. J. [Not unless a very large quantity are kept.]

2099.—**Pigeons' Manure in the Garden.**—Is pigeons' manure good for a flower garden? also will it make good liquid manure for watering Stocks, Asters, &c.?—T. A. H. [You can get nothing better. It is very strong, and you must be careful how you use it.]

2100.—**Grafting Camellias.**—Would a Camellia do well if grafted on an Orange tree or on the Manetti Stock?—J. H. S. [Certainly not ; if you are of an experimental turn of mind you can try it, but you will certainly fail.]

2101.—**Guano Water.**—Will this answer equally as well as liquid manure made from either cow or sheep manure for all general purposes?—J. H. S. [Yes, if it is good and is properly applied. You will find information as to strength in recent numbers of GARDENING.]

2102.—**Cyclamens not Flowering.**—I have six Cyclamens ; they seem very healthy and have plenty of leaves, but no sign of blossom. How can I make them flower? I have given them a little weak liquid manure once or twice. They are old roots, and last year they flowered fairly well.—C. HANKEY. [Probably the plants had no season of rest after flowering last year. You had better withhold water a little by degrees till the leaves begin to flag, then place them in a cold frame or in the open air, giving them a little water very occasionally. They will probably flower well next year if taken indoors in autumn.]

2103.—**Growing Celery.**—I have an Onion bed sown at the end of February last, and which I am afraid will not repay the cost of seed. I should, therefore, very much like to plant it with Celery. It was, previous to sowing, rather heavily manured, and a mixture of soot and salt added. Soil naturally light, with a warm southern aspect. Would you favour me with a few practical suggestions as to the culture of Celery, together with the best variety and time to plant?—NORTHANTS. [Dig out trenches 15 in. to 18 in. wide, and 3 ft. apart from centre to centre, and 6 in. deep. Into the bottom of the trenches dig a good coat of rotten manure. Procure some strong plants of any good dwarf red kind, such as the Dwarf Crimson, Incomparable Red, and plant them at the end of the month 9 in. apart in the trenches, and give them plenty of water. They will want earthing up during summer, an operation which will doubtless be alluded to in GARDENING in the proper season. It is too late to sow now, except for very late crops.]

2104.—**Stopping Vines.**—When am I to stop the shoots of Vines? I have two Black Hamburgh, which have made such rapid progress that their shoots are nearly 4 ft. to 5 ft. long, and the fruit just commencing to come out in bloom, of which there is such a show that the bunches, as nearly as I can reckon, amount to 175 in a house about 30 ft. long and 10 ft. wide.—INEXPERIENCED. [Stop all the shoots upon which bunches have formed. Let each shoot have at least two joints beyond the bunch, and if there is room they may have four or five ; the principle, however, is this :—All the foliage left must be exposed to light and air ; but in your case it would be better to leave the shoots rather long than to take off large pieces now ; you must, of course, remove a large quantity of the bunches if you wish for a good crop. Take off some of the weakest at once, and when the berries are set remove the worst bunches till a reasonable crop only is left. One bunch only must be left on a shoot.]

2105.—**Lilies of the Valley.**—What ought I to do with my Lilies of the Valley in pots after they have done blooming to ensure plenty of blooms next year? I have no greenhouse.—A HARMLESS BULLFINCH. [Pull them to pieces, and plant the crowns singly in rich sandy soil. Take them up, and pot them again in autumn.]

2106.—**Moving Chrysanthemums.**—Can Chrysanthemums be divided and moved with safety now? They have thrown up shoots 2 in. or 3 in. long.—HORTULANUS. [Yes ; move them at once, watering them afterwards.]

2107.—**Frame Cucumbers.**—How many Cucumber plants ought I to put into a frame 6 ft. by 3 ft., heated with stable manure? and which are the best sorts to grow in the above frame?—A. H. J. [Two plants will be plenty. Telegraph is the best kind ; Lord Kenyon's Favourite is also good ; so is Tender and True.]

2108.—**Hot-water Pipes Cracking.**—Will cold water poured into evaporating troughs when the pipes are hot crack them?—D. T. [If the pipes are heated with hot water inside, cold water would not crack them. If the pipes were used as a flue, then the result might be different.]

2109.—**Mulching.**—I often see this word mentioned, but fail to understand its meaning.—DIDO. [By mulching is meant covering the ground with manure or other material for the purpose of preventing evaporation.]

2110.—**Plants for Baskets in Windows.**—What plant or creeper could I buy that would look and grow well suspended inside a window facing south?—W. J. B. [Fuchsias, Begonias, Lobelias, Musk, Campanulas, Saxifraga sarmentosa, Ivy-leaved Geraniums, or any quick-growing plant that will assume a pendulous habit.]

2111.—**Plants for Window Box.**—I have made a frame and covered it with virgin cork to fit the outside of a window facing south ; what plants in pots could I place at the back of it to look well all the summer? I should think if I introduced a pot or two of common Creeping Jenny to grow hanging over the cork it would look pretty.—W. J. B. [Creeping Jenny would do well as an edging, as would Ivy-leaved Geraniums, some of the smaller Tropæolums, Blue Lobelias, and the sweet Alyssum ; for the back you could have zonal Pelargoniums, single Petunias, Fuchsias, Mimuluses, &c. ; indeed there are hundreds of plants suited to the purpose.]

2112.—**Manure for Strawberries.**—Is the application of manure to Strawberry plants in beds that have suffered during the frosts of last winter to be recommended? If so, solid or in liquid, and the kind?—S. N. [Solid manure should have been applied in autumn ; but, if decomposed stable manure can be had, a dressing would do good even now. Do not dig it in ; simply spread it on the surface between the plants ; an occasional drenching of the drainage from a manure heap would be beneficial in dry weather.]

2113.—**Position for Vegetable Marrows.**—Would Vegetable Marrows do well in a position partly shaded by a small Apple tree on one side and Currant bushes on the other? They would receive considerable sun during the day.—W. [Yes, perfectly.]

2114.—**Culture of Balsams.**—In No. 51 of GARDENING ILLUSTRATED good loam, decayed manure, and sharp road grit is recommended to grow these to perfection. Will grit off a limestone road do, or would coarse river sand be better?—PETROS. [River sand would be the best.]

2115.—**Building a Greenhouse.**—How should I construct a greenhouse so that it becomes a tenant's fixture, that could be removed?—J. A. P. [You may construct it in any way you please, so long as you take care not to disturb the ground in any way, nor attach the woodwork to any wall or building. Some old railway sleepers or similar timber will act well as a foundation, if placed on the level ground ; or bricks could be used, provided they were not mortared together.]

2116.—**Forming Rockeries.**—Are there any instructions on this subject in Vol. 1. of GARDENING?—C. B. [You will find information on this subject in the numbers for September 6th, 13th, and 20th ; December 6th and 27th ; January 3rd, and August 9th.]

2117.—**Garlic in Shrubberies.**—How can this be destroyed?—M. L. V. [By perservingly chopping the tops off with a hoe directly they appear, throughout the year.]

2118.—**Raising Melons and Cyclamens.**—What heat is required to raise Melon and Cyclamen persicum seeds?—M. E. L. B. [A moist temperature of from 60° to 70°.]

2119.—**Lifting Dielytra.**—I have a Dielytra spectabilis in the ground showing flower. Would it injure it to take it up and put it into a pot?—J. J. [Not if you well water it first, and lift it with a good ball of earth,

and drop it neatly into a pot of sufficient size. Water it after potting, and place it in a shady place out-of-doors for a few days.]

2120.—**Pricking out Annuals.**—I have some Clarkias, Verbena venosa, Godetia, Linaria, Dianthus, Phlox Drummondi, and Candytuft, sown in shallow boxes in a cold frame; they are now appearing above the ground. Could they be pricked out in the open ground, as I have no other shelter besides the cold frame in which they are at present?—J. J. [When well up, take off the lights by day, and close them at night, till the plants get well hardened; they may then be pricked out in good soil out-of-doors.]

2121.—**Cucumbers Bearing in a Small State.**—I have two or three Cucumber plants which have grown 5 in. or 6 in. high. They are showing fruit at every joint, even the seed leaf joint. Shall I take them out or not? [Certainly; if you wish your plants to last and give you a continuous crop of fruit you must remove all fruit and blossoms as fast as they appear till the plants are established.]

2122.—**Origin of the Polyanthus**—Can any reader inform me of the origin of the Polyanthus? I have seen it stated as likely to have originated in a cross between the Cowslip and Oxlip, and it certainly resembles these plants in the soil it prefers; but I have seen plants uniting it to the common Primrose by many insensible gradations, and have not only found Primroses throw up a stem and produce a truss of flowers, but have seen Polyanthuses lose their tall stem and become to all intent and purposes Primroses, without the loss of their lacing or other characteristics of the individual blossom. [The Polyanthus is considered by botanists to be a variety of the common Primrose (Primula vulgaris): but perhaps some of our readers can say more on the subject.—ED.]

Orach and New Zealand Spinach.—*Hortus.*—These are totally different plants.

Propagating Pyrethrums.—When should the roots of these be divided? [In autumn when they have ceased flowering.]

Gas Boiler.—*A Subscriber.*—Apply to some of the firms that advertise in our columns.

Sportive Leaves on Stocks.—*H. E. S.*—It is not at all uncommon for Ten-week Stocks to produce sportive leaves.

Deutzia gracilis not Flowering.—*T. A. H.*—If the plant is in full leaf it is not likely to flower this year. Keep it growing for the present, and in summer plunge it out-of-doors in a sunny situation, in order to get the wood well ripened. It will then flower next spring.

J. H.—Your communication can only be inserted as an advertisement, in the columns set apart for that purpose.

M. H. H. Terry.—It looks uncommon, but we can form no opinion on such a poor dried-up piece. Send us a good flower packed in damp Moss in a tin box.

Anxious to Know.—We cannot recommend tradesmen. Consult our advertisement columns.

Names of Plants.—*Kitty.*—The leaf is that of an Oleander, or Nerium; for culture see answers to queries. ——*A. B. G.*—Narcissus minor.——*F. W.*—It would be impossible to name a single-flowered Petunia; a packet of seed yields an endless variety; the one sent is well worth growing.——*E. F. Hunt.*—The Toad Flax (Linaria cymbalaria).——*E. L. H. L.*—Allium ursinum, commonly called Ramsons; a good wild garden plant.——*J. B., Cains.*—We cannot name florists' flowers, such as Geraniums, Fuchsias, &c.; this can only be done by a specialist, who has plants near him for comparison.——*H. C.*—A sport of very common occurrence.——*Pink May.*—1, Nicotiana noctiflora; 2, cannot be named without flowers; 3, Spharmannia africana.——*Agnes.*—1, Sisyrinchium of some kind, but cannot tell which from such a scrap of the plant; 2, Santolina incana, or French Lavender; 3, Echeveria of some kind.——*Magna.*—Fern, Asplenium fontanum; flowering plant, Pulmonaria mollis.——*Pansy.*—The climber is Clematis indivisa; the others are the White Rock Cress (Arabis albida) and A. albida variegata.——*A Lover of Flowers.*—Libonia floribunda; it may be propagated from cuttings at any time from now till October.

QUERIES.

2123.—**Salt and Soot as Manure.**—A mixture of soot and salt is recommended as a first-rate manure. Would someone inform me what quantity I might safely give at each dressing to a piece of ground planted with Potatoes? also at what periods of their growth will it be best to apply it? The land is light and poor.—SILLY BILLY.

2124.—**Mushroom-growing in Winter.**—Will some one tell me how to grow Mushrooms in winter? I have a first-rate house heated with hot-water pipes, but I fail to get any Mushrooms. A few come up at first; they are very small, and dwindle and wither.—S. M.

2125.—**Propagating the Eucalyptus.**—Will any one tell me if I can propagate the Eucalyptus globulus from cuttings?—CLAREMONT.

2126.—**Climbers for Filling up Hedges.**—I have a hedge some thirty yards long dividing my flower garden from my neighbour's. The bottom of said hedge was full of dead branches, and there being gaps also, I have put wire netting 1 ft. high all the length, and am anxious to know what kind of dwarf Ivy or other climber would be the most suitable to train on this wire-work, not to grow high, and to fill up well.—T. S. H.

2127.—**Books.**—Can any one tell me of a good reliable work or works on the parrot and its management? also on the culture of the Cactus?—PARROT.

2128.—**Propagating Ivy.**—Will any one tell me of the best way to propagate Ivy?—C. B.

2129.—**Woodlice and Mushrooms.**—I am forcing Mushrooms in two different places, one in a dark place in my greenhouse, and the others in a dark vault. The latter are doing very well, but the woodlice have got at those in the greenhouse and are destroying them all. Can any one suggest any means of destroying them without damaging the Mushrooms?—B. N. C.

2130.—**How to Get Rid of Ants in Frames.**—My Cucumber frames for the past two seasons have been visited by a great many ants. Soon after the plants have been put in they locate themselves among the roots of the plants and stop their growth. Can any one tell me how to get rid of these intruders?—K. N.

2131.—**Plants for Winter Flowering.**—Will any one inform me what plants I can now raise from seed in a greenhouse for winter flowering? or what young plants would it be best to obtain for the purpose?—W. C.

2132.—**Orchard House Peach Trees.**—I have discovered millions of very fat scale on the smaller branches of Peach trees, especially at the end of the house where there is least sunshine. What is the cause? and what is the cure? Our trees have always been quite clean up to this date.—KIRWAN J. FERNIE.

2133.—**Spotted Geranium Leaves.**—I got a cutting of a pink-flowered Geranium in the autumn, and till lately it has done remarkably well. Now the leaves are first covered with small yellow spots, then the whole leaf gets yellow and withers away. Within the last few days I have noticed small marks on the leaves as if a snail had crawled over them; but I looked under the leaves, and could find no trace of any insect. What is wrong?—INGLEFIELD.

2134.—**Weeds in Asparagus Beds.**—I have taken a garden in which there are some Asparagus beds badly infested with Twitch Grass. I cannot get it out without destroying the Asparagus. If I salt the bed to kill Twitch now, will it destroy the beds? Can any one advise me?—H. L. D.

2135.—**Stands for Exhibiting.**—Will any reader inform me how to make a few boxes in which to exhibit Pansies, Asters, and Marigolds, giving the proper size, &c.?—J. B.

2136.—**Points of Good Pansies.**—What are the recognised characters to be aimed at in selecting seedling Pansies to form a fine strain?—J. W. M.

2137.—**Roses on Seedling Briars.**—What is the method to be followed in working Roses on seedling Briars? How should the stocks be treated during growth? and at what age are they fit to operate on?—J. W. M.

2138.—**Palms in Rooms.**—What is the proper treatment for Palms in rooms? I succeed well with a Date Palm, but a Thrinax elegans, bought about six weeks ago, looks miserable; the fans shrivel up and die off.—A. B. C.

2139.—**Pot Roses to Bloom in August.**—I want some Roses to be able to show at a local flower show in August (about the 18th). My Roses in pots are just coming into bloom now under glass. Is it possible to have them in full bloom again for the show? and what treatment should they have to obtain a sound good bloom? They are mostly Hybrid Perpetuals that I have. Good advice would be valued.—OXONIAN.

2140.—**Cold Greenhouse.**—I have a small unheated greenhouse, to which I admit plenty of air during the day, but a sort of green Moss or mould forms over all the pots and nothing thrives. I do not think I overwater. Can any one suggest a remedy? I do hope the subject of cold greenhouses will be thoroughly taken up in GARDENING; many amateurs will be grateful for practical hints.—A. B. C.

2141.—**Crown Imperials.**—Three years ago I planted a few bulbs. They flowered the first year, but ever since they have come up weakly and produced no bloom. The beds are well attended to, and top-dressed with stable manure every year. Why do they not bloom?—F. T. M.

2142.—**Wireworms and Maggots in Gardens.**—I have just taken a garden, which is planted, but is sadly infested with wireworms and a maggot of a dull leaden colour. Can any one recommend a way of getting rid of them?—W.

2143.—**Propagating Biblical Plants.**—Could any reader give me any information appertaining to the cultivation or sowing or striking cuttings, that is, if the seed is attainable or the cuttings procurable, of the following plants, &c., which we find from time to time mentioned in the Bible, viz.—Ling, Aloes, Balm, Cinnamon, Cassia, Bdellium or Musk, Myrrh, Onycha, Galbanum, Calamus (a sweet Grass), Saffron, Spikenard, and Stacte? Can they be grown in this country? If so, how? And what is the proper time for sowing seed or striking cuttings, and where procurable?—J. C.

2144.—**Rock Plants under Trees.**—I have a rockery under the shade of a very thick wide-spreading Beech tree. A few Ferns grow there, but I should be glad to know if any other plants would grow there. The drip from the tree is heavy in wet weather.—A SUBSCRIBER.

2145.—**Yellow Spots on Geranium Leaves.**—I have a Geranium which has made very little growth lately; all the leaves are full of yellow spots, some very irregular and mis-shapen; and although I have bestowed particular care and attention on this plant, yet it does not seem to recover. As it has been so for months I was unable to take cuttings, and should therefore like to save it. Is there a remedy?—H. E. S.

2146.—**Wireworm in Seakale.**—I have possessed Seakale beds for three years, and I find the roots are destroyed by the wireworm. The crops are obtained under Seakale pots by covering them with leaves and hot manure, beginning with about two dozen pots at the end of the bed. As soon as the produce has been cut the pots are renewed row by row beyond the former, and the leaves and hot manure turned over to the new plants, by which a succession is secured. The soil is sandy; and, as many of my neighbours have been treated the same, I should be glad to know of any cure to rid the plants of this mischievous animal.—S. E. D.

2147.—**Cowslips from Seed.**—I have gathered seed of the wild Cowslip two years in succession and carefully sown it, once in autumn and once in spring. In neither case has a single seed germinated. I am particularly anxious to raise it from seed. Can any one give me advice on the subject?—F. T. M.

2148.—**Traveller's Joy** (Clematis vitalba).—Are the flowers of our native species fragrant?—F. T. MOTT.

2149.—**Charcoal Stove.**—Will "M. W. P." say the size of his greenhouse, and if the charcoal stove be bought in Cork can be procured in London? Also the name or maker of same stove?—E. H.

2150.—**Flower-pot Stoves.**—Would "H. M D. B. explain more fully how he constructs his pot-stoves, and what sized pots would be required to heat a frame 7 ft. by 13 ft.?—H. A. T.

2151.—**Jasmines not Flowering.**—I have a Jasmine plant which I brought from France last autumn. It was about to bloom then, and has remained in the same condition ever since. Will someone tell me what I am to do with it?—M. T.

POULTRY.

Disease in Fowls.—I had a large number of fowls last year; they had always been very healthy, when suddenly they began to droop, and I used to find them dead in all directions. I first thought they were poisoned, but such was not the case. Upon examining them I found they were covered with vermin. I had the houses cleaned and (lime-washed mixed with sulphur); but it was all no use; the disease was most contagious, they nearly all perished. I feed them well with meal, oats, and turnips; they have fresh water every day, and a nice grass run. I found one hen dead yesterday, and I am afraid they are going to perish this year also. I had a nice brood of chickens out on January 15; and now, when I thought they were all right, they are all drooping, and four have perished. I should feel very much obliged if I could obtain some information on the subject. Also my fowls lay very small eggs; they are a mixed breed, and were very good ones.—VIOLET.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 4s to 6s; Azalea, 6s to 12s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 6s to 9s; Lily of the Valley, 6s to 18s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus (various), 4s to 9s; Pelargoniums (zonal), 3s to 6s.; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s; Violets (Neapolitan), 4s to 5s; Violets (French), 1s 6d to 4s 0d. —*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Camellias, 1s to 4s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 6s; Roses (forced), 1s 6d to 6s —*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 3s to 6s.

Plants in Pots.—*Per doz.*—Arbor-vitæ (golden), 9s to 18s; Arbor-vitæ (common), 6s to 12s; Arum Lilies, 6s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Aralia Sieboldi, 12s to 30s; Ardisia crenulata, 18s to 30s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Berberis, 4s to 9s; Bouvardias, 12s to 18s; Box, 4s to 9s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Clematis, 9s to 18s; Cyclamen, 6s to 18s; Daphne indica, 12s to 24s; Deutzia gracilis, 9s to 18s; Dielytra, 9s to 12s; Dracæna (green-leaved kinds), 12s to 30s; Dracæna 18s to 60s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Hyacinths, 4s to 9s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Narcissus, 9s to 12s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 12s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s. —*Per pair.*—Azaleas, 10s to 20s; Maiden-hair Ferns (large), 4s to 7s; Aucubas (berried), 4s to 6s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3 each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 36s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 5s to 8s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 20s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 9d.

Vegetables.—*Per* 100.—Asparagus, 1s 6d to 4s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (out-door), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips (outdoor), 3s to 4s; Radishes, 1s 6d to 3s; Herbs, 2d to 6d. *Per doz punnets.*—Cress, Mustard, or small salad, 2s; Seakale, 36s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s.—*Per bundle.*—Celery, 1s to 4s; Horseradish, 3s to 6s; Salsafy, 6d to 9d.—*Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 9d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 4s to 8s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
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PANSIES.

FEW plants have been more improved of late years than the Pansies, and, although for a long time little cultivated, they are now becoming universally popular. They can be grown in the shade or the sun, in pots or the open ground, and even in a window box in a London backyard; and the rich and varied colours of the flowers render them the most interesting as well as beautiful of plants. There can be little doubt that numbers have been deterred from growing Pansies of all classes by the elaborate and expensive treatment recommended by some authorities; whereas, it is a fact that many which would have succeeded perfectly in any ordinary garden soil are killed by over-feeding and the introduction of fresh soil containing the eggs of grub and wireworm. Let us suppose that an amateur cul-

GROUP OF BELGIAN OR FANCY PANSIES.

tivator has procured a collection of Pansies of all classes, say in September or October, and that, being afraid to risk them in the open ground all winter, he has prepared a compost of about three parts good rich loam and one part leaf-mould and silver or river sand; let us suppose further that he has got the plants into 4-in. pots, and in a cold frame close to the glass, that he has plunged them, giving them at all times as much light and air as possible—all he will then have to do will be to water them with soft water when required, and guard against too much damp, as damp is a far greater enemy to Pansies than frost. If it be intended to bloom the plants in pots, then they should be repotted in February or March into 8-in. or 10-in. pots, using the same compost as before, but with the addition of one-fourth part of the best old manure obtainable (old well-rotted cow manure being preferable). The compost should be in good working order by being prepared beforehand and protected from too much wet at this season of the year. The pots must be well drained, and after potting they should be again plunged in cold frames or pits, close to the glass, as before, admit at all times plenty of light and air. When the plants have become established in the pots, and the days longer and milder, they should be supplied with plenty of good soft water; and it will be advantageous, in the case of weakly plants especially, to add a little guano to the water occasionally—or, what is better, have a cask with a mixture of liquid manure, consisting of guano and soot, and add a small quantity of this mixture to every pan of water, as it is much safer to give a small quantity often than to give a large dose, say, once or twice a week. As the plants grow it is advisable to furnish them with small stakes, to keep them from being broken by the wind. If blooms be wanted early, say for competition in May or the beginning of June, the lights will require to be taken off the frames only seven or eight hours during the heat of the day; but if they be required for the end of June or July, then the plants should be grown as coolly as possible, with the lights altogether off, except for protection from heavy rains or winds.

For growing Pansies in the open ground any good piece of ground will do free from the shade and the roots of trees; and for early sorts a border facing south or west is best. If the ground be poor, it might with advantage be trenched over and plenty of good old manure and any good free soil forked into it, and thoroughly exposed to the winter's frost and rain; and if the situation be wet it ought to be drained. When it is convenient to prepare the ground the year before it is wanted for Pansies, it should be well trenched, adding plenty of good manure; and a crop of Potatoes, Turnips, or other vegetables, may be taken off it, when it could either be planted in autumn or ridged up all winter, and be ready for planting in spring. Autumn planting ought to be finished by the end of September; during hard frost the beds might with advantage be protected by branches or mats; or, in cases where the collection is not extensive, a pot could be put over each plant. Spring planting ought to be finished by the end of March; the plants require to be inserted up to their shoulders firmly, leaving only the head out of the ground. Plant from 10 in. to 12 in. apart each way, and put small stakes to them at once, to save them from being broken by the wind. Water them with soft water in order to settle them into the ground; give the surface of the bed from time to time a good stirring, and in dry weather a good watering will be beneficial; but were the beds well mulched with old manure or Moss it would serve to keep the plants damp and cool all the summer, and save much watering.

These remarks apply more particularly to what are now known as show Pansies; but the cultivation of fancy or Belgian Pansies may be said to be the same, except that the soil in which they are grown should be a little poorer, and that they should not be planted in the open ground until spring, as they do not seem to be quite so hardy as the show kinds. They ought also to be planted a little wider apart, as they are, as a rule, more vigorous in growth. This class of Pansy is rapidly improving—so rapidly, indeed, that each year's seedlings cast those of previous years into the shade. Bedding Pansies have proved to be most useful, although at first they met with some opposition. The qualities to be looked for in the bedding Pansy are habit and good foliage, and profusion, substance, colour, and size of blooms. The best way to succeed with them is to practise deep cultivation, to give plenty of good old manure, and plant early, so as to get the plants well established before hot weather sets in. These remarks of course apply equally to the culture of the show and fancy Pansies, and we may add that both must have a change of ground every year.

Pansies are propagated by means of seeds, cuttings, and division of the roots. Seed should only be gathered from the best sorts, and care should be taken to see that it is ripe before it is gathered; it may be sown at any time, but it is best to sow in August and September, in pots, and as soon as the young plants will bear handling, to prick them out in pans or boxes, and winter them with the general collection; they will then be ready to plant out the following March and April. Cuttings may also be taken at any season, but July, August, and September are the best months for propagating the general collection. Select for this purpose young shoots from the centre and sides of the plants; good short-jointed pieces, from 2 in. to 3 in. in length, are best, and if a heel or small root can be got with them, so much the better. Where a large stock is wanted, it is a good plan to nip out the centres of the main shoots, when a host of small ones will soon spring up from the centre of the plant; and if a handful of sand be shaken loosely into the middle of the plants, it will encourage small roots to form at the base of every shoot, and thus enable them to be taken off, ready for planting, every two or three weeks. For cuttings, no place is better than the foot of a north wall or hedge, and for late cuttings a cold frame or pit. The soil should consist of a mixture of loam, leaf-mould, and plenty of good sharp river or pit sand. They should be sheltered during severe storms of wind or rain, but when shading is required it ought only to be continued as short a time as possible, as it is apt to make the cuttings "draw" too much, and not root; when rooted, they require to be removed from the cutting bed and planted in the open ground, watered, and shaded for a short time. A damp day or evening is best for this purpose, and by this means a stock of well-rooted, short-jointed plants will be secured for either autumn or spring planting. The old stools may be lifted and divided if required, but propagation by means of cuttings is preferable, as well as more economical, where stock is required.

—— In cultivating Pansies for exhibition, it is requisite in the first place to understand what are the properties of an exhibition Pansy. To gain the best knowledge of this I would recommend going to a good exhibition, where one hour's study with a grower as guide would be better than a volume in print. The next thing is to procure good sorts. Get strong plants, and let them bloom once to show their true colours; then begin to pinch every bloom bud off as it appears, and get some Fern or wooden pegs, and peg every shoot or stem down in the soil midway of the stem. By these means you will get double the quantity of plants you would have by breaking up the roots; do this as soon as you get the plants growing, and, as I said before, pinch every bud off after you know they are right sorts. Then get your cold frames ready; these need be particular in no way if they let in plenty of air and light. Next fill up within 6 in. of the glass with some good fresh loamy soil, the top spit of an old pasture, and some very well-rotted and clean stable manure; if it is not rotted so that it falls to pieces when you handle it it is of no use, as strawy loose stuff will not suit them. Mix it well up, and put it in your frame; level it, and let it settle some weeks before use. The plants ought by August to be well rooted. Take one root up at a time, keeping the label with it, and break every stem off at the bottom; pinch all weak shoots off main stems, and put them on one side with a label to them; then get your best plants or stems you have broken up, and plant in your frame 1 ft. apart each way; when you have finished this, put on your light for a day or two, shaded with a mat, and proceed with the weaker shoots; only you may plant them from 4 in. to 6 in. apart, according to size of plant. When your plants are started in the frame, take off the lights, and never put them on again till frost or snow appears, unless a storm comes on, when you may put them on to stop them from being battered. Always have the lights off when the sun is out, unless it is powerful, in which case raise your lights to give air, and shade the glass with mats. Look sharp after red spider and snails; I lost a very good stock last autumn through red spider. Let the plants keep growing on till spring comes, pinching off every bud as soon as you see it, as by letting them grow you weaken the plants and encourage weak shoots. We will now suppose the show is in May, June, or July; you must see they are kept moist if the weather is dry. Raise the lights 6 in. above the frame to allow a free breeze to circulate through it; and when within about three weeks of the show, let the buds go, and give weak liquid manure, making it stronger as you get near the show; and if you are a beginner, you will find yourself so astonished as you never were in your life at the size of blooms. If you show the plants, you must get as big pots as the show allows, generally about 6-in.; take as many plants up (of one sort) as will fill your pot, and trim the blooms with a camel's-hair pencil, arranging to the best advantage.—LACY GREEN.

—— In exhibiting show and fancy Pansies, they are to be seen to best advantage on neat stands painted green, without paper cards. The largest blooms should be placed in the back row, and the colours should be arranged so as to produce the best effect. Violas are best shown in bunches, and a Dahlia or Rose stand is very suitable for that purpose. As the show day approaches, it will be well to collect the blooms as they expand every morning, and place them in large bowls of clean water, changing it every day; place them in a cool shady house, and they may be preserved fresh from three to six days, according to the state of the weather. When shading the blooms on the plant is resorted to, use a

small covering sufficient to shade the bloom only and not the whole plant. Before arranging the blooms on the exhibition stands, I lay them all out on clean paper for about an hour, by which time they will be a little flagged and more easily handled without the risk of breaking their stalks or splitting the under petals in laying them on the stands.

[The Pansies from which our sketch was prepared were sent to us by Messrs. Carter & Co., who call them the International Pansies, and who have in their nursery a very good selection of fancy, show, and bedding kinds.]

Pinks in Covent Garden.—The common varieties of Pink are largely grown for market, the old white, moss, red, and Anne Boleyn being the best sorts to grow freely and sell well. These are propagated by dividing the old stools at the end of the flowering season. When planted in light soil these slips soon emit roots, when they require no attention except keeping them clean and giving them an occasional dressing of soot to keep off slugs and the common house sparrow, which in sharp weather pecks out the crown of the shoots. When taken up for sale, a little Moss is tied round their roots, and they are sold in dozens, often at fair prices. A popular member of the Pink family is the single variety, or that raised from seed sown in the autumn. Plants raised in this way, by the following spring are so vigorous as to have foliage more like that of a Carnation than a Pink. They are called "Jacks" by the costermongers, who carefully tie them up singly and in pairs in Moss, and label them with some high-sounding name. The disappointment of the purchaser thus imposed upon may therefore easily be imagined when his supposed fine new varieties of double Carnations, Picotees, &c., prove to be when in flower a fine crop of single Pinks. In spite, however, of these tricks of trade, the quantity sold each year shows no diminution.

Spring Flowers in the Market.—Double-flowered hardy Primroses are worthy of every attention, being really beautiful flowers, both as ornamental little garden plants and in a cut state. Forget-me-not, Arabis, Pyrethrum, Phloxes, Violets, Chrysanthemums, Pæonies, Thrift, and similar hardy subjects, are always to be found in the market in spring in large quantities; so also are roots of many kinds of culinary herbs, such as Thyme, Winter Savory, Sage, Tarragon, &c.; small plants of Lavender, Rue, and Rosemary; clumps of common hardy Ferns; indeed, nearly every hardy root that produces either useful leaves or pretty flowers is supplied ready for the purchaser. These are mostly packed in moderate and useful quantities in orange or fish boxes, and are thus in a very convenient form for the buyer to safely and easily take them away.—H. B.

Fuchsia Riccartoni.—There are many places in which this useful plant thrives remarkably well, not only in pleasure grounds and shrubberies, but also by the sides of walks in plantations. A gravelly bottom suits it best, but it ought to have a place specially prepared for it—say a pit dug out 4 ft. wide and 18 in. deep; let the best of the soil be put in the bottom, as this Fuchsia will often root deeply if it finds congenial material in which to develop its roots. If in plantations, it should occupy the most open positions to be found in them, and, as Rhododendrons may be expected to adorn woodland walks during summer, this Fuchsia furnishes a profusion of flowers in the latter part of the year. This variety of Fuchsia is much hardier than many imagine, and where the subsoil is sufficiently gravelly to give free passage to superfluous moisture to pass away, I have seen it grow into a great bush 6 ft. and 8 ft. high, and sometimes a healthy plant will throw up a shoot 6 ft. long in one season. In exposed situations, or where the frost becomes very severe, it would be well to protect plants of this Fuchsia during winter. This may be done with Bracken, and a few sticks driven into the ground to keep it from blowing away. If the tops are killed by the frost in winter, young growths will push up from the root in spring.—G. D.

British Wild Flowers.—The Snake's Head (Fritillaria Meleagris), or common Fritillary, called by the country people "wild Tulip," is a plant which I found in abundance a week ago in a meadow about two miles from Reading. Suitably disposed in our gardens, it would form a graceful addition to their limited number of spring-flowering plants. Even in the wild state there are many varieties—the handsomest perhaps, being the chequered white and reddish purple; there is also a white, or rather greenish white, variety, which is very pretty. The form

The Snake's-head (Fritillaria Meleagris).

of the flowers of all the varieties is very much that of a Chinese lantern. The foliage being scanty and Grass-like, the bulbs, to produce an effect, should be massed in close proximity to handsome foliaged plants. The second wild flower to which I would call attention is that of the Caltha, or Marsh Marigold. The meadows near the river have been golden with the yellow blooms of this plant for the past three weeks. Either in masses or isolated, it is an exceedingly showy flower, and has no real defect to prevent its being an eligible occupant of the spring flower border. Its dark green glossy leaves are very handsome, and the plant grows compact and well furnished with blossom in the full sun. Indeed, so splendid was its appearance in the meadows, that I should only have been too pleased to have been able to transfer, there and then, some of its gorgeous beauty to my flower garden; but I was compelled to be satisfied with a handful of blooms, which I gathered, together with some Fritillarias from a neighbouring field, the two forming on my arrival home a vase bouquet sufficiently handsome for the boudoir of an empress.—T. S. J.

Hardy Crinums.—It is probable that the South African Crinums—at least those which grow in the latitude occupied by the hardy and half-hardy Irises—will also be found more or less hardy under favourable circumstances in England. I have only tested the capabilities of

Cape Crinum (C. capense); flowers white and pink.

two of them, as follows:—C. capense is truly hardy here at Welton (near the centre of our island), where it thrives, flowers, and produces seed in abundance under water round the margin of a pond. This, and a paler variety called C. c. fl.-albo in the catalogues, were formerly to be had at 1s. 6d. a bulb, and might doubtless be had cheaper if a demand arose for them. The pure white variety is more tender, and does not succeed in the pond. The variety called C. riparium is described as being of a richer purple colour, but my specimens raised from seeds do not differ materially from the normal form. C. campanulatum is hardy also, but perishes under water treatment of any kind. We have seen a large plant of C. capense flower profusely for several years at the foot of a plant house in Messrs. Osborn's nursery at Fulham.

Clean Flower Pots.—Amateurs scarcely devote enough attention to this matter, and therefore are troubled with many failures in consequence. Plants are soon affected with disease if grown in dirty pots; the soil soon becomes waterlogged, sour, and mossy, and the minute rootlets refuse to absorb moisture and nutriment from the walls in which they are imprisoned. Two things lead to deterioration in pots—one, and perhaps the chief, the excessive porosity and softness of the material of which they are made; and the other, defective drainage. Pots made of good hard clay, even in size, with sides of moderate thickness, if a trifle dearer, are at least much the cheapest in the end, as these neither get dirty so soon, nor are so brittle, and therefore last much longer. Plants should never be allowed to remain too long in the same pots; frequent shifts both promote health and free root action; and the cleaner and sweeter the pots, the more active will that root action be. Even apart from this, however, dirty pots are unsightly in any plant house; and if it be not desirable at all times to shift a plant into a clean pot, much good may be done by clearing off the Moss on the surface of the soil and re-dressing it with fresh material, and also by giving the outsides of the pots a good scrubbing in water. In large gardens, where many thousands of pots are employed in plant culture during the year, wet days are usually made available for washing them, and it is by no means unpleasant work during the dog days. In winter, however, several hours of pot-washing in very cold water is neither pleasant, nor does it lead to good results. A boiler or copper should be at all times available for pot-washing; and where a large quantity has to be got through, an abundant supply of hot soft water should be at hand. Two tubs should be used—one full of tepid water, in which the pots are placed to soak an hour or two before being washed, and the other full of hot water, in which the actual cleansing is done. If the pots be but moderately dirty, a wisp of bast or hay will make an efficient cleanser; but for very dirty, mossy pots, a brush is the most effective. A semi-scalding in hot, strong soda-water not only assists in the rapid removal of dirt, but destroys parasitical Mosses and causes the pots to dry off at once; they are thus ready for stacking as fast as they are washed. Amateur plant growers should cleanse their pots in the same way, but of course there are fewer to clean; nevertheless, it is well to wash thoroughly, and get each pot as clear from dirt as possible. No person having any regard to the requirements of plant life would ever use pots that have not been properly cleansed.

COTTAGERS' FLOWER SHOWS.

I would advise that cottagers be offered prizes for all the most useful vegetables; and, to save funds, let them go in pairs, taking, say, Peas and Beans together, white and red Cabbage, Carrots and Parsnips, Onions and Leeks, Turnips and Beet, round and kidney Potatoes, and then offer an extra prize for the best collection. In plants, say—one Geranium, one Fuchsia, one Fern, one any other kind in bloom, one any other kind for foliage, would be quite enough. In cut flowers—cut blooms of Dahlias, Asters, Stocks, French and African Marigolds Pansies and Roses should be separate, six of each; then say six annuals; bunches, and best collection of cut blooms, a special prize. Also offer special prizes for horticultural or botanical exhibits of decided merit, such as models, dried specimens or collections; a prize in this section for the best collection of Potatoes, unlimited, takes well. A special prize for the neatest and best-cropped cottage garden, and one for the best bed of Onions are necessary. To make the show really of use in encouraging honest growing and exhibiting, and a better cultivation of the most useful varieties of vegetables, &c., it is really necessary that each entry should be scrutinised by a competent person on the exhibitor's premises a few days before the show. By all means have strangers to judge, if possible. A band of music for dancing greatly increases the enjoyment, and draws gate-money. Entry fees should be as light as possible, say 1s.

Prizes for bouquets of wild flowers might be offered to children. The band should not cost more than £2 10s.; hire of tents and tabling, £6; schedule—say 2s. for firsts and 1s. for second prizes for each exhibit, and 4s. firsts and 2s. seconds for special prizes. £20 should cover all the cost, and the gate-money and entry fees should pay the expenses; but it is advisable to collect subscriptions and have as large a surplus as possible. In the village where the writer resides the first annual show left a surplus of nearly £20, although the schedule and expenses were rather extravagant. Annuals should be about those named above, and should be sown at once. The other plants are all easily procured from either florist, nurseryman, or market gardener. The writer would be glad to give any other information, or to forward schedules of small shows held in his neighbourhood. Schedules or handbills should be out as soon as possible, so as to give an idea of what will be wanted.

YORKSHIREMAN IN CUMBERLAND.

ROSES.

ROSES FOR WINTER FLOWERING.

POT Roses that are managed with a view to produce the earliest flowers in winter under glass, that is, such as are well furnished with unexpanded buds out-of-doors in open quarters before being taken indoors, need little forcing; they simply require the protection of a house or pit, slightly above the temperature of an ordinary greenhouse, to induce them to expand. Where Rose flowers are required all the year round there are none that play a more important part than these, filling up as they do the gap between the latest-opened flowers produced out-of-doors and those that come in under the influence of more heat later in the winter. The ability of the plants under consideration to produce flowers at the time required will, in a great measure, depend upon the way in which they are treated at this time of the year. The flowers which they furnish, as will be evident, are not the production of wood made after they are taken under glass subsequent to being more or less pruned, but simply the result of matured buds already formed, with no pruning at all practised in the autumn, this being deferred until the present time. The plants, when done flowering, are removed to a cold pit or house, where they will merely receive protection. They should now be pruned, the operation being confined to cutting out all weak, worthless wood, and shortening the strong shoots proportionate to the size and strength of the plants, remembering that the larger they get the greater the amount of flowers they will produce, and that a score of good specimens in 11-in. or 12-in. pots will furnish not only a far greater amount of flowers than almost an unlimited number of small plants, but that the proportion of large blooms is much greater than from plants of smaller size.

Potting.—After being pruned, all that require it should be potted at once, giving more root-room where needed. The soil used should be strong loam with a sprinkling of sand and some good rotten manure, but no leaf-mould or light material, such as is sometimes employed, and which is quite unfit for Roses. See that the drainage is sufficient and well secured against the soil getting down into it. In potting these, which will principally be Tea varieties, it is scarcely possible to ram the soil too hard, neither must the pots be filled so full as not to allow sufficient water, of which they will require a daily application through the summer, enough being given to moisten the whole at once. All such plants as do not need larger pots should be turned out; the drainage should be examined, and as much of the old surface soil should be got away as can be done without interfering with the roots, replacing it with new material, which should also be well rammed in, so as to make it quite solid. Previous to potting the plants would be all the better for being laid on their sides and syringed freely with Tobacco water, to which has been added some Gishurst. This not only kills green fly and red spider, but the sulphur which the Gishurst contains is equally destructive to mildew.

Treatment after Potting.—The plants, after being potted, should be placed in a cold pit, deep frame, or under the protection of loose lights in a warm, sheltered position, where they will commence growth, gradually exposing them fully to the air as the roots begin working in the new soil. Later on they should be plunged in a good bed of ashes, sufficiently far apart to prevent any crowding, and to permit of their being attended to with water; the plunging is necessary to prevent their drying up so quickly through the summer, which would occur if the sides of the pots were exposed to the sun and air; there should also be 3 in. or 4 in. of ashes under the pots to prevent the ingress of worms. Coal-ashes are preferable to Cocoa-nut fibre, spent tan, or other material frequently employed, as all these afford a harbour for worms, which the ashes do not. Roses more than many plants appear to suffer from their presence in pots. A few of the strongest branches should be bent down and tied out in a way that will cause them to break from the lower eyes and keep the plants in shape, not with a view to their being formally symmetrical, but so as to induce the production of strong wood from the base, and admit of air and light getting through each plant. As the whole object with this portion of pot Roses is to furnish flowers at the time already stated, all buds that make their appearance through the summer should be picked off as soon as they are formed. The plants must receive regular attention as to the root moisture they require, and should be liberally supplied with manure-water, so as to induce the formation of all the strong wood possible; to still further encourage this, insects and mildew must be assiduously sought for and destroyed.

Standard Gooseberries.—This is an excellent way of training these useful fruits, but one that is seldom seen in practice in English

Standard Gooseberry.

gardens; it is, however, accomplished, and the fruit produced from trees thus trained is in many ways superior to that obtained from trees trained in the ordinary way. It is never advisable to have the heads far from the ground; on the contrary, a clean stem of, say, 2½ ft. to 3 ft. will generally be found a convenient height. In order to have well-shaped standards, it is necessary that training should commence when the plants are small—old, straggling bushes being seldom capable of conversion into anything like satisfactory specimens. Procure young vigorous plants with thick straight stems, the tops of which have never been cut off, and plant them in whatever positions may be desirable, after which apply to each plant a strong stake—if an iron one, so much the better. All side shoots produced within 2 ft. of the ground must be kept pinched off as they appear, and the leader encouraged to grow straight by tying it to the stakes. When the stems have attained a height of 4 ft. and pruning time arrives, it must then be decided upon what height to have the heads from the ground. This done, every bud should be picked out to the required height, when four plump leaf-buds should be left and the remaining portion of the shoot cut off. The shoots produced from the remaining buds the following summer may be allowed to grow at will, and when they have shed their leaves in the autumn they should be gently drawn down into a drooping position, and be all cut to the same length. This bending them down will cause other shoots to be produced from the upper sides of these main branches, and they, in their turn, may be trained slightly down, until a regular and well-shaped head is obtained. In all cases, however, overcrowding of the wood should be avoided—that is, if crops of large and well-ripened fruit be desired. Some growers of standards use galvanised wire frames, made in the shape of an umbrella, on which to train the heads of the trees, but if the branches be kept in their places by means of ties and a few stakes for a year or two, and be judiciously pruned every year, such expensive and formal-looking contrivances may easily be dispensed with. Gooseberries and Currants are grown as standards to a considerable extent in Bohemia and Moravia, the trees being grafted on stocks of Ribes aureum, which has been found to produce vigorous and fertile specimens. —S.

VEGETABLES.

GROWING VEGETABLES FOR PROFIT.

AN industrious man near a town, with a garden large enough to occupy all his spare time may, and, in fact, often does, realise a profit from it beyond supplying his family with fruits and vegetables. Where circumstances permit of this being done, it will be better to deviate somewhat from the ordinary system of cropping, and to cultivate only those plants that experience has shown can be produced in each particular locality in the greatest perfection. Market gardeners often find it answer their purpose better to concentrate their attention upon one or two special articles, and do this well, so as to obtain the command of the market for those particular vegetables or fruits, than to grow an extended selection—acting on the principle that excellence in only a few things is better than mediocrity in a larger number. On warm dry soils early Potatoes are a paying crop, and they may be cleared off in time to plant the land with autumn Broccoli. The Broccoli would in most cases be off the land by Christmas, which would give plenty of time for ridging it up and preparing it for the Potatoes again; I need hardly add that ground cropped like this must be liberally manured, and the crops must be occasionally changed. Short-top and French Breakfast Radishes are a profitable crop when raised early, and would be cleared in sufficient time for Celery, and this arrangement would make a very good rotation alternately with Potatoes and Autumn Broccoli, as the Celery could be cleared off by Christmas. A good bed of Rhubarb, if well treated and sheltered with litter to encourage early growth, would not cost much to make, and would pay well; while there is always a brisk demand for Seakale in the season, which might profitably be taken advantage of by the enterprising cottager who had a turf-pit or frame with the means of raising a little artificial heat. Early Cabbages, to be cleared off by the end of June or earlier, and the land prepared for Turnips immediately thereupon, would be suitable for some soils, and a good patch of Red Cabbages for pickling will usually find a ready sale at a good profit. Onions sown in the autumn tolerably thick, and drawn green when they are a good size towards the end of May, to be followed immediately by Vegetable Marrows, will make a good change with some of the modes of cropping previously named.

There is one point in connection with gardening for profit I think so important that particular stress ought to be laid upon it, viz.—as far as possible to secure the best and truest stocks of each particular plant intended to be grown. Any plant of a good true strain will pay better for the space it occupies, granting the outlay is more in the first instance for the seeds than the inferior quality, even if the latter have equal germinating power; and with this object

in view it may be advisable to devote some attention to the saving of seeds of any really good variety of vegetable, especially as, if this idea be carefully worked out, it may open up another source of profit, cottagers often experiencing a difficulty in securing really good seeds. A careful cottager, who has taken pains in the selection of his plants will soon obtain a reputation among his neighbours for the excellence of his crops, and may by saving seeds occasionally add considerably to his profits. Of course, two of the same family must never be in blossom at the same time, or it will probably result in a crop that will spoil both ; this is the main reason why some kinds of vegetables, especially the Cabbage family, are so difficult to obtain true to their individual kinds. There are too many varieties (so-called) by half, and every year adds to their number, and renders the confusion still greater. Peas, unless very early or very late, are not, as a rule, profitable to grow in a small way ; French Beans may answer for a change of crops, and the same may be said of Lettuces, and the latter may often be used as a catch crop amongst others ; but the main reliance should be placed upon those subjects that are best suited to the soil, and for which the best demand exists in each particular neighbourhood, for the selection of which experience alone will be the surest guide.

There is still another source from which a profit may be realised by those who have some little knowledge of the cultivation of common hardy border flowers, especially those that flower early in spring. There is a large and increasing demand for the decoration of town gardens early in the season by means of Daisies, Wallflowers, Pansies, Pinks, Cloves, Carnations, Sweet Williams, Polyanthuses, common Auriculas, &c. They are all easily increased by division, cuttings, or seeds. They may be grown to a flowering size in one year at a very small cost, and could be lifted with little balls and conveyed anywhere without feeling much check ; and if sold at a rate so as to bring them within the means of the very poor, not only would the transaction be profitable in a pecuniary sense, but it might help to brighten the homes of those who have not too many elevating pleasures. I feel convinced that anything that tends to popularise (if I may use the term) and extend the cultivation of flowers must, in the long run, benefit all concerned in their production. I have ever found that when once a beginning is made and interest aroused, even though in a very slight degree, other and choicer varieties are being frequently added to the stock whenever the means will allow.

H.

Mulching and Watering Peas.—Mulching with various materials is an excellent practice, and one which deserves more attention than it generally receives, as the benefits to be derived from such treatment are very great. The mulching keeps the roots cool and moist, and is especially useful in shallow soils ; in clayey lands, too, which break into large fissures during the drought, mulchings enable rains, when they come, to thoroughly soak the whole of the soil instead of running down the cracks —thus leaving the chief portion of the roots dry, and inducing mildew. The best mulching material depends greatly upon local circumstances : where, for example, sea-weed can be readily obtained it makes a good covering, inasmuch as it retains moisture for a great length of time. Where, however, this cannot be got, half-rotted manure makes perhaps the next. We have likewise frequently seen flags of the Yellow Iris (I. Pseudacorus) cut from the river-side and used for the purpose ; and lawn mowings may also be employed where nothing better can be had, though they are apt to fill the ground with weeds. Before mulching should rain not come, a thorough watering should be given, first prick the surface over with a fork in order to allow the water to penetrate readily—after which put on a good coating of the best material at hand, covering as much of the soil as possible, and if 6 in. or 8 in. thick all the better. If this be done properly, and a good watering given once a week, or as often as seems necessary, the plants will never sustain any sudden check through excessive drought. A good dose of manure-water or guano-water given sometimes will greatly improve the crop. Watering, be it observed, should be done thoroughly ; it is better to water half the crop at a time and do it well than only half do the whole. Pouring water close to the stems of the plants is a practice which is best avoided, as it sometimes causes them to rot. In very dry weather a sprinkle overhead in the evening will be found to be beneficial to the foliage, and also to assist the setting of the blooms.

The Globe Artichoke.—The culture of the Artichoke varies somewhat according to situation and climate. In the north and midlands, it is necessary to cover it in winter with litter or leaves, to protect it from frost ; in the south it is sufficient to earth it up, but even this precaution is not taken everywhere. The plants are increased by seed and offsets. They require an open situation, and well manured deep soil. The Globe Artichoke is considered a very wholesome vegetable, and with good culture it can be obtained in great perfection for at last six months in succession. If cut when about half grown, the Artichoke possesses a very pleasant flavour, and is a very delicate vegetable ; but if the heads be allowed to attain their full growth, or nearly so, they are not so fine in flavour, and have lost most of their tenderness, so that only the base of each scale and the base of the head are fit to eat ; whereas the whole of a young head may be eaten. The Artichoke will grow luxuriantly in rich boggy land in summer, and is not at all a bad-looking plant in large borders and wild gardens, with its noble foliage of a kind of blueish-green, and with its large heads of flowers of a Borage-like blue colour ; but it will not stand our winter in wet quarters. As a kitchen-garden plant, it will grow on any kind of soil, if well manured, trenched, and pulverised ; but no soil suits it better than a good, open, sandy, rich loam, trenched and well manured. The plant is in its best perfection at the second and third year after planting. To plant properly, make choice in spring of good strong suckers, take off the stools carefully with a sharp strong paddle-trowel or Asparagus knife, with some root or heel of the old stool to them, to hold them in the ground ; plant them singly 2 ft. apart, in rows at least 4 ft. apart, or in groups of three in triangles, at 4 ft. apart at least in the row. Protect them as soon as planted, against the sun and cutting winds, with Seakale pots, which are at this season out of use, or with evergreen boughs, or some other convenient protecting material. Those thus early planted will produce fine free crisp heads the same summer and autumn. If the stems also be cut close to the ground as soon as the heads are cut, new suckers will soon appear, and if duly thinned will produce a late crop : thus, by a little trouble and attention, a regular supply of good Artichokes may be had from May to October, which will be much more satisfactory than having a glut at midsummer and none afterwards. The aim should be to get the largest supply at a time when other vegetables are generally scarce. Copious supplies of manure water may be advantageously given to Artichokes during dry weather, especially in the case of old stools that have been in the same soil for a length of time. Previous to watering, the soil between the rows should be slightly pricked over with a fork, to allow of the water soaking in more readily. Whenever watering is attempted let it be done thoroughly, and if a good mulching of half-rotten manure can be afterwards applied between the rows, it will keep the roots in a moist state for a long time, and the effects of the watering will soon be seen.

Globe Artichoke.

AMATEURS' GREENHOUSES.

As an amateur, I wish to give a few hints to others who, like myself, have little time to devote to greenhouse gardening. I am afraid many people, struck with passing enthusiasm by a chance visit to a flower show, or a tour through well-appointed gardens and greenhouses, go home and build a greenhouse, and, after an unsuccessful attempt to grow everything, not excluding Orchids and other stove plants, have given up the whole thing in despair, and abandoned the temple of Flora to the spiders and cockroaches. To these disappointed ones I need scarcely address myself. If they had been true lovers, they would have persevered through all difficulties, and achieved success ultimately. I will assume at the outset the possession of an ordinary greenhouse, a frame, and a reserve bed out-of-doors.

I—**What to Grow.**—This consideration is a most important one. It is necessary to have a stock of plants which will furnish flowers from January to December. Well, in the spring I have bulbs (generally bought for cheapness sake at a bulb auction, and potted in October and November)—Hyacinths, Tulips, and Polyanthus-Narcissi. Then there are Primroses, Deutzias, Lilies of the Valley, Spiræas, Polyanthus, and Dielytra spectabilis, all of which force capitally. These, with an odd Camellia, Azalea, and a few Cinerarias will make a variety and a show through the later winter and early spring months which will gladden the eye at a time when flowers are scarce, and before Nature has put on her vernal mantle of leaf and flower. In summer Geraniums and Fuchsias will be largely represented. Tender annuals sown in spring will be extremely useful—Browallia elata, Rhodanthe Manglesi, and Acrocliniums, being all desirable amateurs' flowers, easy to cultivate, and profuse bloomers. The last two are greenhouse everlastings from Australia, and have a further value for church and home winter decoration. Sowings of these may be made in September for spring flowering. With a few greenhouse climbers, Begonias—which I especially recommend—Musk, and a few miscellaneous plants which obtain a place in my greenhouse, a continuous display of flowers may be looked for through the summer. In the autumn and early winter, Chrysanthemums (cuttings of which have been struck in spring, and the plants grown on in a frame or under a shady wall, and taken inside in September) are the most valuable, and will afford flowers almost

until the earliest bulbs are ready for blooming. Of course, a few Ferns must be grown. When a Vine is trained over the rafters Ferns are especially useful, and with a few plants of the various Lilies (auratum, lancifolium, &c.) will produce a rich effect in the house, and harmonise well with the fruit overhead. The Coleus cannot be kept through the winter in an amateur's greenhouse, but is a desirable addition to the summer stock. The best plan I know is to make friends with a gardener (not a nurseryman) and beg a few cuttings in March or April. They will then strike readily, and amply compensate the little trouble they cost. A few wire baskets filled with Ferns and trailing plants, and suspended from the rafters, do much to redeem an amateur's greenhouse from the air of conventionality and commonplace which often pervades it. A little rockwork—not too much—made of tufa or sandstone and virgin cork (no glaring spar if you value the opinions of your fastidious friends), and planted with Ferns and Lycopods, is also an interesting feature.

II.—**Liquid Manure.**—A liquid manure tank or tub will be necessary, and is best relegated to the most obscure part of the premises. Plants in active growth will do well with a bi-weekly application, and will repay the attention thus given by a wealth of vigorous and healthy foliage and flower. If a manure tank is not practicable, guano or some other condensed form of plant food may be purchased of any seedsmen,

III.—**Soil.**—Some good decomposed turf, loam, silver-sand, and leaf-mould or Cocoa-fibre refuse will fulfil all requirements. Peat is not necessary. A little lump charcoal is a good addition to soils for some plants.

IV.—**Economy.**—A small fortune may soon be expended, and prove no better investment than Turkish bonds. Do not be tempted to buy plants in flower, except they will furnish cuttings, or be of lasting service. Better procure plants to order, and propagate from them, and you will then have the additional pleasure of seeing them grow and bud. A few seeds well chosen will amply repay their outlay.

V.—**Tidiness and Cleanliness.**—Lack of these two virtues—they *are* virtues—will do much to make everything else a failure. The glass must be kept clean; the benches and staging free from dirt (keep a small scrubbing brush at hand, and do not be afraid of elbow-grease); the floor ought to be washed at least once a week, and the pots should not be allowed to become coated with green mould; nor ought dead or withering leaves to be left on the plants. The house, too, should not be permitted to get dingy for want of an occasional coat of paint. Cleanliness is as necessary in the greenhouse as the dwelling-house, and litter and dirt ought not to be tolerated in the former which would not be permitted in the latter. I cannot lay too much stress upon the importance of this subject.

VI.—**Daily Care.**—If success is to be attained, daily, not occasional, attention is absolutely necessary. More harm may be done by the forgetfulness to water on a hot day than can be repaired in a month. "What is worth doing at all is worth doing well."

Read your GARDENING regularly, and not a week or two after date. By regular reading, you will lay in a stock of information which you will find valuable after many days. An acquirement of the rudiments of botany is especially useful, and will add tenfold pleasure and interest to the cultivation of plants. I would urge amateurs not to be careless respecting the correct nomenclature of their plants. There is no need to be afraid of the Latin names; they only require once learning. One who patiently observes the habits of growth of plants must understand them and develop them successfully. Far greater self-denial is exercised by passionate devotees of music and other sciences, but no pursuit yields more lasting pleasure or more intelligent recreation than do the study and cultivation of flowers.

JOHANNES.

Drying Everlasting Flowers.—These need only hang in small bunches with their heads downwards. I do so always, and the stems are perfectly stiff and straight. No need to wire them.—M. G.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

May 17.—Sowing two rows each of the following sorts of Peas—Giant Emerald Marrow, British Queen, Ne Plus Ultra, and Omega; potting on large Tomatoes for fruiting in pots; planting out another three-light frame with Telegraph Cucumbers, and one with Green-flesh Melons; mulching late Strawberries with chaff cut from stable-litter; clearing off Broccoli stumps, manuring the ground, and getting it dug up for another crop; potting Vesuvius and Dr. Lindley Pelargoniums for autumn blooming; also young Cyclamens, afterwards placing them in heat and shading them during the day; sowing Mignonette in 6-in. pots for house decoration, and another crop of Negro Long-pod Bean; also sowing a little Chervil in boxes and in the open border; planting a border with April-sown Cauliflowers; also Celery and Lettuces, and making another plantation of Cabbages, Savoys, and Brussels Sprouts; placing Tomatoes out-of-doors to harden off ready for planting; topping the shoots of Broad Beans which are in flower.

May 18.—Sowing Canadian Wonder French Beans, and Early Snowball and Strap-leaf Turnips; planting out two rows of Celery; potting on double Petunias and Tricolor Pelargoniums; pricking off Celery and Broccoli plants; planting out Leeks in deep drills; looking over Seakale beds and thinning out the crowns; tying up Brown Cos Lettuce to blanch; hoeing amongst all growing crops; potting-off Chrysanthemum cuttings, Gesneras, Chilies, and Salvia splendens; sowing Scarlet Invincible Sweet Peas for succession, Walcheren Cauliflowers Kight's Tall Marrow, and Champion of England Peas; also Syon House Cucumbers; planting Iresine, Cerastium tomentosum, Vegetable Marrows, and Ridge Cucumbers; putting in cuttings of Pansies; watering trees that have been recently transplanted; syringing Peach trees out-of-doors in order to keep off insects; earthing up Potatoes as fast as they appear above ground; thinning Carrots, Turnips, and Beetroot; hoeing and otherwise cleaning Onion beds; digging land for planting Brussels Sprouts, Cabbages, and Savoys.

May 19.—Potting on Pelargoniums of sorts for autumn and winter blooming; pricking off Stocks, Asters, and double German Wallflowers; looking over the Asparagus beds regularly, and keeping them closely cut down; nailing and tying in the young shoots on Rose walls, and washing them where required with Quassia-chip water to kill green fly; sowing London and Paris White Cos and Neapolitan Cabbage Lettuces, Spinach and Radishes; planting out Tropæolum canariense, Gnaphalium, Centaureas, and Zonal Pelargoniums; preparing pit for planting out Cucumbers; staking Scarlet Runners and Peas as fast as they require support; throwing out more Celery trenches, and making them ready for receiving the plants; hoeing and raking shrubbery borders.

May 20.—Sowing Early Horn Carrots for drawing young; planting out a large space with Early Dwarf Ulm Savoys; also Tomatoes against a south wall; looking over the Peach walls, disbudding the trees where required, picking off curled leaves and keeping them well syringed to keep down insects; potting double Wallflowers and Selaginellas; sowing another batch of Balsams, Iberises, Wallflowers, and Pentstemons; likewise Brompton Stocks, Alyssum, and Oxalis; making a ridge for Vegetable Marrows; putting short Grass between Strawbery plants on which the fruit has set; preparing land for sowing annuals; tying creepers in conservatory.

May 21.—Sowing also Mustard and Cress; planting out Calceolarias, Pelargoniums, and other bedding plants; also Autumn Giant and Self-protecting Cauliflower plants in deep drills; giving the Vineries where the Grapes are swelling a good soaking of guano water; thinning out Beet, Onions, Carrots, and Parsnips, and running the Dutch hoe between the drills; thinning out Spinach and Turnips; shifting Celosias into 10-in. pots, and placing them in a warm pit; potting Mimulas for the conservatory; also Ice-plants and Fuchsias; sowing Rudbeckias, Polyanthuses and Myosotis; also French and Long-pod Beans, Champion of England Peas, and another crop of summer Spinach; planting a small bed of White Celery to come into use for kitchen purposes early, and pricking out young Celery plants in open border; removing Tomatoes to cold pit; disbudding Peach trees out-of-doors, and thinning the fruit, so as to leave three to a shoot; also thinning Apricots for the first time, and nailing in all leading shoots; examining Rose trees for maggot.

May 22.—Planting out Gourds, Marrows, and ridge Cucumbers; looking over Cucumbers and Melons, earthing and stopping them, and fertilising them where required; sticking Peas and earthing them up; mowing and rolling down Grass; potting Humeas into large pots, and placing them out-of-doors; also Calceolarias and Primulas; shifting young Vines into 10-in. pots, and placing them in a Vinery; sowing Giant Emperor Stocks out-of-doors, and Intermediate Stocks in boxes placed in a warm frame; also sowing French Beans in pots for planting out and placing them in heat; planting a few Chilies out-of-doors in the warmest situation available for them; transplanting Beetroot where seedlings have failed; watering seed beds with guano water; also all kitchen garden crops that are likely to suffer from drought; likewise young Cherry trees, and afterwards mulching the roots with half-rotted manure; tying in leading shoots of espalier fruit trees; earthing-up Cucumbers that are growing freely.

Glasshouses.

Potting Newly-struck Plants.—Cuttings of the more generally-grown climbing and bushy-habited stove plants recommended to be put in about the end of March will now be well rooted and have got sufficiently inured to the full air of the house to admit of their being potted. As to soil, those plants that will grow in loam, especially in stoves where a strong heat is maintained, will generally flower freer in it that in peat; consequently it is better in such cases to use loam; but its employment is not to be recommended for plants that have their growth unduly restricted.

Bouvardias.—Cuttings put in in March will by this time have made considerable progress, and should now be ready for transferring singly to 3-in. pots. The points of the growths should be nipped out in order to induce them to break freely. They will succeed in either peat or loam, but where the latter is to be had of good quality, and to it is added some well-rotted leaf-mould, sand, and fully decomposed manure, a mixture will be formed that will push them on in the way desired. They should be kept in a warm, genial, temperature, with a moderately moist atmosphere, plenty of light, air in the middle of the day, and a thin shade from bright sunshine until they have got fully established. B. Vreelandi, one of the dwarfest and most compact of Bouvardias and a very free-flowerer; B. jasminoides, white and free in regard to growth; B. Humboldti corymbiflora, white, with very large flowers and bunches; B. Hogarth, scarlet; and B. elegans, also scarlet, finer and larger than Hogarth, will all be found sterling kinds. Plants that were cut back some time ago, and which have now broken freely, if not already partially shaken out and repotted, will be in a condition to be treated in that way, using compost like that recommended for the younger stock, but in the case of these there is no need to push their growth on so fast as the young plants, for, having all the season before them, they have time sufficient to attain a size large enough to be convenient.

Flower Garden.

Auriculas.—Owing to our keeping the frames a little closer than we have been doing, and removing some of the pots into a warmer house, we have been a little earlier than we otherwise would have been in getting the blooms open; and the continued cold weather has retarded the later sorts so much that we have a good bloom yet. Out-of-doors the finer varieties of the alpine section are now at their very best; the colours are more brilliant than those under glass, and varieties that have shaded edges under glass are not shaded in the open air; this is not invariably the case, but it is so with some sorts. These hardy Auriculas are not much injured by the weather, and have certainly an exceedingly fine effect amongst Primroses, Anemones, Muscari, spring-flowering Saxifrages, and other plants that are in blossom early in May. Most of the growers are now busy re-potting, and directions have been given in previous numbers as to the method of procedure. After re-potting the frame should be kept close for a few days, and the plants must be shaded from bright sunshine; the offsets must be kept quite close, especially such as have no roots. I generally place them under a hand-light, and then place small bell-glasses over them to keep out the air.

Carnations and Picotees.—We have not yet placed pots of these intended for exhibition out-of doors. The weather has hitherto been so cold as to quite stop the growth of the plants. Keep the pots free from weeds and the plants from insect pests. If it be intended to flower any of them about three weeks earlier than usual, it will be necessary to place the pots at once in a rather warm house. Blooms of the perpetual-flowering section ought now to be plentiful, and they should be freely produced until after midsummer, for, as the leading flowers die off, the lateral growths push up and continue to produce flowers, though of smaller size—hence the name perpetual-flowering. Young plants must not now be neglected. A cold frame or a cool airy house is the best place for them until the weather becomes warmer.

Dahlias.—Plants of these ought now to be quite ready for planting out, but as yet it would not be safe to do so. The plants should be in pots sufficiently large to prevent their becoming root-bound, and so far apart from each other that they will not become drawn. Admit air freely, removing the lights altogether when the weather permits. See that none of the plants suffer from want of water, and apply it in the morning in preference to the evening while the temperature is so low. The border for the plants may again be forked over.

Forcing Pinks.—These belong to quite a distinct type from the laced section with white

grounds. Anne Boleyn is a good and useful sort, and of newer varieties we have Derby Day, Lord Lyons, and Lady Blanche, the latter a pure white variety with smooth flowers; it is by far the best of the white sorts. Now is a good time to put in pipings of them. They strike freely in a hotbed on a very gentle bottom heat. The frame should be kept rather close until the cuttings are rooted, when air should be given more freely without moving the pots from the positions which they occupy for a week. When fairly established plant them out in the open border until the last week in September, when they should be taken up and potted in good soil, and the pots should be placed in a cold frame until they are wanted to be placed in the forcing house.

Polyanthuses.—These seem to delight in cold weather; their blooms in the open border appear to be quite uninjured, the colours coming out in their richest hues; our only trouble is the sparrows, which will not let the blooms alone. The plants in pots seemed as if they would exhaust themselves with the production of flowers, and as there is abundance outside, we picked the flowers off the pot plants, and planted the whole of them out in rich soil; there they will be no source of trouble until it is time to pot them again in autumn.

Aquilegias.—We grow nearly 100 of these in pots, and, so far, they have caused but little inconvenience, except watering them when necessary. Now they force themselves upon one's attention, as the flower spikes are rising strongly. No one who has only seen the finer species and varieties of these in the open border can form any idea of their delicate beauty when grown in pots. A. cœrulea is particularly beautiful, and the golden-yellow flowers of A. chrysantha have an excellent effect either singly or in masses. Give them plenty of air, water freely at the roots, and syringe to keep the leaves clear of red spider.

Lawns and Shrubberies.

Shrubberies, Plantations, and Borders.—On dry warm days the hoe must be used where weeds make their appearance. In herbaceous borders plants requiring supports should have them; mulching with well-rotted manure will materially assist weakly-growing kinds, and aid in fully developing the flowers. Annuals should be kept free from weeds, and thinned out where necessary. Many kinds which have been grown in frames, such as Stocks, Asters, Zinnias, &c., may now be planted out, choosing showery weather for the operation; the same observations apply to perennials from the nursery beds. Seeds of nearly all kinds of annuals, biennials, and perrenials may now be sown.

Lawns and Grass Plots.—Grass should be rolled about three days before it is mown, and again directly afterwards; edges of beds and verges should be neatly clipped with shears or cut with the edging iron. Any subsidence in newly made plots should be at once remedied. In every case where it is necessary to lift and relay turf, immediately it is down it should be thickly covered with fine rich soil; the unsightliness of this for a few days will be amply rewarded by the Grass being saved from burning, and by its becoming green in a much shorter time than when it is left bare, as is too often the case; moreover, it fills up any interstices which may be left, and acts as a fertiliser. It is also advisable to sow about two bushels of seeds of fine lawn Grasses per acre at the same time, lightly raking over the surface; it may then be left for a few days, raked over again, and thoroughly rolled; thus treated, a good lawn may be formed even in dry weather. In all small open spaces surrounded by buildings, where radiation is excessive, water should be laid on, so as to be available when required, for the purpose of keeping the Grass in good condition. A very frequent source of failure in the case of lawn Grasses is defective drainage.

Climbers on Walls and Fences.—These should be pruned, cleaned, nailed, and mulched. With very little care or trouble, walls and fences in towns might be made extremely pleasing to the eye during summer. Few really good evergreens are available for the purpose; one, however, which is not sufficiently used is the Euonymus; this is a most excellent subject for covering walls; it grows freely and withstands smoke. Some of the shrubby Honeysuckles may also be made available for the same purpose, especially on open fences, and when mixed with Ribes the effect is strikingly pretty. Climbing Convolvuluses and Nasturtiums will also assist in beautifying unsightly structures, whilst in out-of-the-way corners Scarlet Runner Beans may be used with advantage.

Fruit.

Vines.—If in successful Vine culture one matter demands a larger share of attention than another, it is the constant battle which we have to wage with insect pests; and amongst these red spider and thrips are the most formidable. These latter, if taken in time, can be effectually exterminated by fumigation; but the former does not yield so readily when once it has gained a footing, and this shows how important it is to adopt preventive measures. These consist in keeping the roots well supplied with moisture and nourishment, the atmosphere charged with ammonia, at all events during the earlier stages of growth, and judicious and regular ventilation. A check through inattention to any of these matters is not unfrequently instrumental in producing bad results. If red spider has already appeared, first look to the conditions here indicated, and then sponge the affected foliage with soapy water. The remedy of applying sulphur to the pipes is as useless as it is dangerous in the hands of the inexperienced. Late Vines will now or shortly be in flower, and to make assurance doubly sure, frequently tap the rods with the hand, in order to disperse the pollen. Muscat Hamburgh, Mrs. Pince, Muscat of Alexandria, and Lady Downes, if gone over separately with a camel's-hair pencil charged with pollen from other varieties will not only set more freely, but will swell more evenly. Take off all superfluous bunches before they are in flower; what are left will set more freely, and the laterals should also be stopped at the same time, as growth should continue unrestricted at the time of flowering. If the borders be in any way dry, water liberally with warm water. One is constantly being asked, How often and when do you water your inside borders? but it is not possible to satisfactorily answer such questions; all that can be said is that they may be watered freely, provided the drainage be good, and at any time rather than they should suffer in the least from drought. Of course, the most unobservant would know better than to produce excessive atmospheric moisture by watering at the time when the Vines are in flower, and when they require a somewhat dry air in which to set their fruit freely. Grapes colouring should have free ventilation during all weathers, and if dull fires must be kept up, high night temperatures should be avoided. If there be any danger of the border getting dry, do not scruple to water, even though the Grapes are ripe; such watering will not harm them if abundance of air be afterwards given to carry off excessive moisture. Outside borders that have been artificially protected should now have the covering material removed, the soil pointed over, and to prevent cracking, a coating 2 in. thick of horse droppings should be applied. Where shutters or other water-tight coverings have been used watering may be requisite; therefore the borders should be examined, for, though the present crop may have finished perfectly, it should be remembered that next season's fruit is, so to speak, manufactured this season; and if there be any lack of water now the consequences will be apparent enough next season, inasmuch as tendril-like "shows" will be produced in lieu of well-developed ones. As soon as recently-planted Vines have taken a firm hold of the soil, free growth should be encouraged by closing the ventilators early on sunny days and running up the temperature to 90°. Syringe both Vines, walls, and floors at the time of closing, and conserve the moisture in the border by keeping it well mulched with stable litter.

Kitchen Garden.

Easterly winds, cold though they be, have some redeeming qualities, and one of them is drying the soil, which has allowed surface-stirring amongst seedling crops, and also bringing up arrears as regards Potato planting and seed sowing, such as Carrot, Beet, Broccoli, and winter greens generally, all of which, if not yet sown, should have early attention, as should also the sowing of French Beans and Scarlet Runners; the latter should be sown in shallow trenches, to admit of liberal waterings in the event of drought setting in. The earliest sown Spinach ought now to be fit to gather; therefore the remains of the winter Spinach may be dug or trenched in, when the ground will be suitable for Beet, Peas, Broccoli, or Cauliflower. In order that no unnecessary exhaustion of the soil may take place, the old stems of Brussels Sprouts, Kales, or Broccoli should be cleared off as soon as the produce is used; and as soon as practicable let the ground be lined out into Celery trenches, or be dug or trenched, according as it is required for the forthcoming crop. There should be no fallows, accidental or otherwise, in kitchen gardens; on the contrary, each successive crop should, as it were, prepare the way for the one that is to follow it; and in furtherance of this, notes as to dates and positions respecting the various crops will require to be kept. The labour of keeping such a diary soon becomes a pleasant duty, but those who do not care to take this trouble—so-called—but who crop on the haphazard principle, would at all events find it advantageous to adopt the simple rule of never allowing two crops of a like nature to succeed each other on the same plot of ground, but should endeavour to have the character of each successive crop as remote as possible.

GLASSHOUSES & FRAMES.

CARNATIONS FOR WINTER BLOOMING.

Few plants flower with so much certainty as the Carnation; but, for early forcing, the flower buds should be formed, or nearly so, before the end of October. I have lifted plants from the border about that date with a profusion of buds upon them, which continued to open during a greater part of the winter. Of winter, or tree Carnations, as they are called, there is now a great variety, but the white, such as Avalanche, the pink Souvenir de la Malmaison, and the scarlet and rose-coloured varieties are most useful. I would advise no one to have more than three or four distinct kinds, and these only such as are known to be profuse bloomers. Whether old plants that have flowered during the last winter and spring or young plants have to be dealt with, no time should now be lost in transferring them from their winter pots to the open border, where they must remain until they have completed their growth. Provide a bed in a sunny, open, but sheltered situation, and put the plants out about 2 ft. apart. Reduce the old balls considerably, taking away the crocks and spent soil, without shaking the roots out altogether, and plant them well up to the collar. If the bed consists of ordinary garden soil, then fill round each ball with light rich soil, consisting of leaf-mould, loam, and sand, in equal parts, for a space of 6 in. all round. This will be sufficient for the roots during the summer, and will give a good ball of soil with them at lifting-time. Plants that have not been cut down yet will be pushing about the base of the flowering shoots; therefore do not remove the young shoots now, but cut back to them, and when the planting is finished stake each plant and tie them, but not too tightly. Let all the shoots grow; the larger the bush the more flowers, only give them room as the plants grow. If all has gone on well each plant will be profusely furnished with plump buds by the end of October, when preparations must be made for lifting them. For bushy plants, such as I am contemplating, and such as fine young plants will make if planted out in time, 9-in. pots, at least, will be required; and, rather than reduce the balls too much, I would give them a larger size. Get the plants up, at all events, with good balls, by first cutting round them with a spade, and then getting it under them and lifting them clean out of the ground. Transfer them at once to the pots by lifting the ball carefully with both hands and dropping it gently in and fill round with light soil, giving the pot a slight shake to settle it; but do not make it too firm, for that would only injure the roots; watering thoroughly will settle all effectually. This is a better plan than growing the plants in pots all the summer, for they grow better and want less attention, and experience no check at all by lifting if it be done with ordinary care. The

plants may be transferred at once to the conservatory or house in which they are to flower; for, like the Camellia, they want exceedingly little forcing. A warm light greenhouse or frame is the best place for them, and they must have all the light possible, ventilation, and little or no moisture overhead; a damp low temperature causes the buds to rot without opening. J. S.

Everlasting Flowers for Greenhouse.—Among hard-wooded plants now in flower in nurseries few are more beautiful than Aphelexis macrantha and its varieties. In the shape of small bushy plants, Aphelexis may be used in a variety of ways, and their lively purple blossoms last, either on the plants or in a cut state, for months. These Everlastings are seldom grown by amateurs, on account of some imaginary difficulty attending their cultivation. They are, however, no more difficult to grow than many less beautiful plants. Cuttings, consisting of the flowerless shoots, should now be taken off and inserted in well-drained pots filled with equal parts of silver-sand and sifted peat. Use a sharp knife for removing the cuttings, and avoid bruising them as much as possible. Make the soil round them firm when inserted, and place the pot containing them in a larger one, filling in the vacancy between the two with sand or fine soil. Plunge the whole in a gentle bottom heat in a close frame or Cucumber house. Careful watering is necessary. When well rooted pot the young plants in well-drained 4-in. pots, using peat, broken potsherds or broken bricks, and a little charcoal. When again established, remove them into a cooler temperature, and when their pots are filled with roots, shift them into 6-in. pots, using the same soil as before. Abundance of air and water are necessary at all times. Large plants are not so useful as small ones, because they want training, which gives them a formal appearance; and by striking a potful of cuttings yearly, good, bushy plants, full of bloom for several months in the spring, may be obtainable. A. macrantha purpurea grows more upright than the type, and its flowers are superior to it in point of colour. A.m. rosea is also well worth culture. —C. S.

Plumbago capensis.—This very distinct old-fashioned plant should be grown in considerable numbers by those who have to keep up a succession of flowers. For late blooming, and to succeed the plants that have come in with ordinary greenhouse treatment, a portion may now have their shoots stopped, and in the course of another week or ten days be plunged out-of-doors in an open situation, where all that they will require is their shoots being trained, so as to prevent their getting into a straggled condition, and sufficiently supplied with water. In cases where the plants are furnished with roots enough to fully permeate the soil within the pots, manure water may be given once a week; this will have the effect of inducing a stronger condition of growth, which will have a natural tendency to further retard the formation of flowers, an object which it is desirable to attain in order to induce as late a disposition as possible to bloom through the autumn and winter.

Vallota purpurea.—This free-growing and brilliant-flowered bulbous plant is one of the best of autumn decorative subjects which we possess. It is often grown with a little extra warmth in spring in the way in which the Amaryllises are treated. Where some are wanted to come in earlier than usual, such treatment has the effect of inducing them to do so; but where they are wanted to come into flower late, they should be treated on the cool system, as in an ordinary airy greenhouse, but fully exposed to all the sunlight available; so managed, when the plants are strong they will produce a succession of flowers till the autumn is far advanced.

The White Trumpet-flower (Brugmansia Knighti).—This fine old plant is seldom met with in an amateur's garden, notwithstanding its beauty and simplicity of culture, especially when planted in the bed or border of a greenhouse. It only requires to be annually cut into the old wood, and kept clean, to furnish a charming succession of pure white blooms among its abundant pale green foliage. Wherever there is a bed in the middle of a small conservatory or greenhouse, instead of a stage, it is an admirable plant to place in the centre of it, its beautiful head of trumpet bloom and soft rich leaves forming such a fine object around which to arrange the other flowers. It is very extensively grown in tubs, which are stored in cellars or places safe from the frost during winter, and brought out in summer and placed on walks near the houses. Here, in the sun, pruned and leafless specimens soon break into bud, flower finely in the autumn, and form very striking objects.

Knight's White Trumpet-flower (Brugmansia Knighti).

House and Window Gardening.

ARRANGEMENT OF WINDOW PLANTS.

A FEW days since I remarked a window garden so pleasingly and effectively arranged, as to present a marked contrast to all others in the vicinity. The plants were of the ordinary description, but they were evidently chosen as being best suited for the place. Not only did they exhibit signs of painstaking culture, but the arrangement showed an intelligent appreciation of the good effects to be produced by judiciously intermingling such plants as vary considerably, both in form and colour. The form of arrangement will naturally depend upon the shape and aspect of the window. Those windows which project slightly from the dwelling best admit of tasteful grouping being carried out in them; but in almost every dwelling space enough will be found to allow of taste and judgment being exercised. Although no arbitrary rules can be laid down for plant arrangement, yet some general instructions may be given which may prove of service to the inexperienced. In the first place, no window can be considered well furnished unless it contains graceful drooping plants suspended in a basket. Some of the plants best fitted for window culture lend themselves well to this treatment. Some, such as the Wandering Jew Saxifrage, are of extremely easy culture; and a well-grown specimen, with its pendulous offsets drooping down and intermingling with the other inmates of the window, certainly presents a very attractive appearance. The common Musk, again, displays itself to greater advantage when grown in this manner. Then we have such plants as Russelia juncea, Dracæna vivipara, Panicum variegatum, and many beautiful kinds of Ferns, which thrive admirably in such situations, and with good attention will last in beauty for an indefinite period. Tropæolums, Maurandias, Lophospermum variegatum, Cobæa variegata, and Ivies, may also be cited as especially suitable for the purpose. My intention is, however, rather to indicate the description of plants needed than to give a list of kinds; as the grower will, in the course of his experience, meet with a number of graceful-habited subjects well adapted for this mode of culture. In this matter the grower will also need to select his subjects according to the aspect of the window; a Fern, for instance, will thrive admirably in a north aspect, where a Tropæolum would give but little satisfaction, and *vice versâ*. The central object in the arrangement should be a foliaged plant of some kind distinguished for its graceful habit and for its verdure. Where there is space nothing is more suitable than a Palm, the more hardy of which may be kept for several years in health in a small pot without materially increasin size. If there is not space enough for Palms, then some of the many forms of Dracænas may be selected, or a Grevillea, or Acacia, or any kind of slender-stemmed upright-growing foliaged plant. This, together with one or more kinds of Ferns, and a pot or so of the fresh green Selaginella, will give plenty of verdure; and if the flowering plants be judiciously selected with respect to height, habit, and colour, and the whole arranged with an eye to general effect, the result will be very pleasing. Where there is space, more than one basket may be suspended. In the window already alluded to there were three—a Tradescantia zebrina in the centre, flanked by a fine Musk specimen and Panicum variegatum. The three essential points to be arrived at are a judicious blending of colour and verdure, and a tasteful disposition of the various subjects employed. I have been induced to offer these few observations, as I have noticed a general tendency to crowd together a number of flowering plants, thereby creating a blaze of colour. This is all very well as far as it goes, but it does not realise the ideal of window gardening, which, in addition to skilful culture and variety of subject, should certainly include good taste in the general arrangement.

J. C.

Flower Vases.—The floral vases for the room table have been nearly universally neglected, although it is here, perhaps, that we find most scope for the really artistic—that is to say, the beautiful—arrangement of flowers, more especially hardy ones. Although both hardy natives and tender exotics may often be combined in room vases with the best results, there is a great difference between the tastefully-filled vase found on the table in most old country houses and modern dinner-table vases; it is not, however, too late to mend, and what we now plead for is a more natural style of grouping in the last-named class of decoration. Our modern floral decorations, of which that now engraved is an example, however neat or graceful in form, never give us glimpses of floral luxuriance and tints of pure colour as do the old-fashioned masses of Lilies, Irises, Narcissi, and Tulips arranged with their own, and consequently most appropriate, leafage. Modern floral arrangements for the dinner-table will certainly fall into disuse, owing to their formality and want of true artistic beauty. Not so vases skilfully filled with hardy flowers; such vases every true flower painter is pleased to imi-

tate, and every lover of flowers to enjoy and admire.

ANSWERS TO QUERIES.

1975.—**Parsley for Exhibition.**—To grow good specimens for exhibition, prepare your ground by digging in and mixing well a liberal quantity of old horse manure and a little leaf-mould, if procurable. If you wish to have one or two good specimens, pot off just now eighteen plants into small pots, and grow them on in your cold frame till about the third week in May, then plant out about 16 in. apart each way. If your strain can be depended on, twelve of the best will be plenty to plant out. After they are started to grow vigorously, give liquid manure twice a week. Let them be the last thing you lift for the show, and be careful to leave a ball of soil about them that will fill a 7-in. pot; water after potting. If you wish to grow them on in pots, use one-half rotten turf, one-fourth rotten manure, and one-fourth leaf-mould, with a sprinkling of sand; but they are likely to do best planted out. I have grown the plants of the Fern-leaved Parsley 18 in. across.—M. Cuthbertson.

1914.—**Improving Soil for Potatoes.**—One of the most important elements in the successful culture of Potatoes is found in trenching or deep tillage. Soil that naturally produces but a poor crop may be greatly improved if trenched and well limed. A sprinkling of salt is also useful, and there are generally good results following from a dressing of phosphates or of artificial manures that largely contain them. Soils that do not favour the Potato have also been greatly improved as far as the production of that valuable tuber is concerned by the growing of a green crop and turning it in—such, for instance, as a crop of Rye sown in September and dug in at the end of the following March. As a rule, sand will grow good Potatoes, and, with fair dressing of any kind of animal manure, should produce a good crop.—A.

1929.—**Lilium auratum Out-of-doors.**—Where the climate is so cold that such hardy bulbs as Liliums are killed in the winter, the obvious course would be either to give the bulbs in the ground ample protection, or to lift and pot them after the stems have ripened, planting out again the following summer. A bucketful of ashes laid over the soil and bulbs should give ample protection, and a Seakale pot or large flower-pot turned over the ashes should keep them dry, and the bulbs beneath safe from danger. If the climate also prevents early blooming, the best remedy is to grow on the bulbs in pots until the stems are well thrown up, and then turn them out. If this were done the Lilies should bloom in mid-season instead of in the autumn.—D.

2092.—**Cultivating Blackberries.**—Blackberries planted in good land in rows 5 ft. or 6 ft. apart, trained to a wire trellis 6 ft. or 8 ft. high would undoubtedly yield good results. The growth should be kept moderately thin to obtain fine fruit, and the roots be mulched over with manure. The pruning, of course, should be done in autumn or winter. All suckers from the base not required to lay in should be pulled off as soon as they appear.—E. H.

2031.—**Show and Fancy Dahlias.**—Out of so many fine exhibition Dahlias it is very difficult to select the best eighteen kinds, but the following gives a first-class selection, and one that cannot fail to please any grower:—Show kinds—Alexander Cramond, shaded maroon; Charles Backhouse, fine scarlet; Her Majesty, white edged purple; John Wyatt, crimson-scarlet; Ovid, fine purple; Mrs. Stancombe, canary-yellow, tipped with fawn; John Neville Keynes, grand yellow; Herbert Turner, fine French white; and Henry Bond, bright rosy-lilac. Of fancy kinds—Fanny Stuart, red, tipped white; Eccentric, yellow ground, tipped with bright scarlet; Sam Bartlett, blush, striped crimson; Mrs. Saunders, yellow, tipped white; John Lamont, maroon, striped black; Tippy Bob, canary-yellow, striped rose and purple; James Carter, buff, striped crimson; Hercules, yellow ground, speckled crimson; and Regularity, blush white, striped crimson.—A. D.

2037.—**Window Boxes.**—There are a variety of ways in which these ornaments may be made both cheap and effective. An oblong box constructed of ordinary 2½-in. deal, made a trifle wider than the window-sill the narrowest way, and Hazel sticks in their natural state split in two and pointed one end, then bradded to the box and varnished, will have a very pretty aspect; the knottier the Hazel sticks the better, and these should be 1 in. higher than the box ledge. Virgin cork can also be used, which is exceedingly pretty. Miniature palings, with a gate in centre made of wood and painted green with a white background, is very appropriate, and will attract the attention of many a passer-by. Simple wooden boxes, with designs of an ecclesiastical character painted upon them, are not at all out of place. At least a dozen good-sized holes should be made in the bottom for drainage; a moderate quantity of potsherds strewn about, or a few cinders or light ashes, will do no harm. I should rather recommend "Window Gardening" to mix his mould with stable manure, without straw, rather than Cocoa-nut fibre, and water slightly but regularly, and frequently if exposed to much sun. I have found that seeds, especially those of hardy plants, grow well in such soil. If the creepers have already been in pots and done well, I advise him to bury pots and all in the box mould, as removal might prove fatal.—Newt.

Vase of flowers and grasses in early summer.

2089.—**Dandelion for Salads.**—Dandelion makes an excellent winter salad, and may be collected in the fields; but if sown in April in rows plants of a better quality will be obtained, especially if care be taken to select the seed from the broadest-leaved varieties. To blanch Dandelion, prick out strong plants in a row, and in October earth up with from 4 in. to 8 in. of light soil. As soon as the plants begin to appear above ground cut off the shoots at the collar of the root. Thus treated, Dandelion resembles the Barbe du Capucine (the blanched shoots of the Chicory).—Ombu.

2075.—**Mustard and Cress on Flannel.**—Cover a champagne or other bottle neatly with coarse new flannel; soak the seeds for a day or so; then they become glutinous, and will adhere to the flannel more readily. Thoroughly soak the flannel-covered bottle in water, and gently press the seeds on it, covering the bottle all over; keep it in a warm light place, turning it once or twice a day that the seeds may grow evenly. Great care must be taken in watering (which should be often) not to wash off the seeds; either sprinkle gently, or keep the bottle full of water and let it trickle over the sides. When ready for table put a flower in the mouth of the bottle; it will look very pretty.—A Subscriber.

2146.—**Wireworm in Seakale.**—Fork up the land between the Seakale rows or clumps. Pick out all the wireworms seen. Insert Potatoes or Carrots in different places among the Seakale roots, leaving a peg to mark the site of each. Examine them twice a day, pull out, and destroy the worms, and return the roots to the holes again, repeating the operation daily till the worms are all destroyed. This is the best and the cheapest way of eradicating wireworms from a small plot of land.—E.

2123.—**Salt and Soot as Manure.**—When the Potatoes are fairly through the soil is the best time to apply salt and soot; and 10 lb. of the former and a bushel of the latter per square rod will be a safe and beneficial dressing. Scatter it evenly between the rows and lightly fork it in. If the land is very poor, and there is a prospect of a dry hot summer, dress with the same quantity of each again just previous to earthing-up finally next month.—H.

2132.—**Orchard House Peach Trees.**—The scale insects have been introduced unobserved on some unclean plant. They are easily got rid of in winter by painting the trees over when the leaves are off with Gishurst Compound—6 oz. to 8 oz. dissolved in 1 gallon of soft water, thickened to the consistency of paint by adding sulphur, lime, soot, and clay in something like equal parts, and applying it with a soft brush, taking care the buds are not loosened by being rubbed the reverse way. The Gishurst solution without the other materials may be used now on all the thicker branches, or wherever there is room to use a small brush dipped in the compound frequently to dislodge the insects. A weaker (4 oz. to the gallon) solution may be syringed over the trees, well wetting

those parts where the brush has not touched. The garden engine should be used often, and with some force, as insects dislike cleanliness.—E. H.

2124.—**Mushroom Growing in Winter.**—I have known failures to occur in Mushroom houses from the hot-water pipes being placed so close to the beds as to injure Mushrooms when they came up with too much dry heat. Perhaps this may have something to do with the failure in this case. If the house is evenly and moderately heated, and the proper materials available for making the beds, there should be no difficulty in having plenty of Mushrooms. The best time to begin for a winter supply is early in September. The best manure is that obtained from hard-fed horses; that from Grass-fed animals, or, indeed, any kind of soft food, such as roots, &c., is comparatively useless. I have no doubt many failures may be traced to this cause, or to the manure being obtained from horses that are taking medicine, as I know manure from such a source does fail to produce Mushrooms. Having obtained the right kind of manure, shake from it the longest of the litter, and throw the short manure into a heap to ferment, to drive off some of the moisture and the rankness as well. In the meantime examine the house: clear out all corners where woodlice may congregate, and whitewash the walls. Mushrooms may be grown in a dirty place; but cleanliness is a safeguard against insects. When the manure has become hot, turn it over, mixing all together, and leave it to get hot again, when it may be shaken up and made into a bed, treading or beating it down as firmly as possible. When finished, the bed should not be less than 1 ft. in depth; place a trial stick about the centre as a guide, and when the heat in the bed falls to 90°, and is steadily declining, spawn the bed at once, just burying the spawn beneath the surface, using pieces about as large as a hen's egg, and placing them 9 in. apart. Make all firm again, and cover the bed 1 in. in thickness with good sandy loam. In three or four days, if the temperature of the bed keeps steady, beat it down firmly with the back of the spade. If the materials are collected for the first bed early in September, it may be made up and spawned by the end of the month, or a little earlier; and it should produce Mushrooms by the middle of November. If a large supply is required, make a new bed once a month, to come on in succession.—E. H.

2093.—**Propagation of Clematis.**—The hybrid forms of Clematis Jackmanni are propagated by grafting on roots of the common kinds early in spring before growth begins. Pieces of root will do, and one good bud will be sufficient to each graft. Pot as soon as grafted, burying the union, and plunge in a gentle hotbed. Keep close and shaded till the buds burst, then gradually inure to air.—E. H.

2063.—**Humea elegans Dying.**—We can only surmise that the plants in question received an overdose of water, thereby causing a stagnation of the functions. The Humea is one of those plants which when shifted into a large pot grow with great rapidity, but at the same time unless very carefully treated with respect to watering it is liable to go off in the manner described.—J. C. B.

2094.—**Propagating Cistus.**—They are generally propagated by layers; or the young shoots will strike under a hand-glass in a shady border in summer. The best plan to adopt in this case would be to peg the bare shoots down, leaving the green points erect, and cover the pegged-down parts with a couple of inches of peat and loam. They will emit roots, and perhaps new growths will spring up also.—E. H.

2090.—**Ferns in Vineries.**—All the greenhouse Ferns will succeed in the temperature named. The following are vigorous-growing kinds: Pteris serrulata, P. longifolia, P. cretica albo lineata, P. tremula, Aspidium exaltatum, Adiantum cuneatum, A. pedatum, A. concinnum, A. tenerum, Asplenium bulbiferum, A. flaccidum, Cyrtomium falcatum, Doodia lunulata, Neottopteris nidus avis, and Woodwardia radicans.—E. H.

2091.—**Climbers for House Roof.**—I suppose there is some soil for the plant to grow in, either in a box or some other receptacle. There is plenty of choice among the Ivies and Virginian Creepers, any of which would soon cover a roof, or the two might be blended together. Plant a Gloire de Dijon Rose and Clematis Jackmanni on the trellis, and let them intertwine.—E. H.

2095.—**Slugs in Frames.**—Pieces of Orange-peel, laid hollow part downwards, are good baits. Cabbage leaves smeared over with grease attract them also, but they must be examined late in the evening and early in the morning and the slugs killed.—E. H.

2089.—**Dandelion for Salads.**—The smooth-leaved Dandelion makes an excellent salad when the young leaves are chopped up and eaten with salt and vinegar. It will grow in any out-of-the-way place by putting in small pieces of root, and will quickly increase.—G. R.

1924.—**Ferns for Damp Cave.**—Trichomanes radicans would undoubtedly thrive in such a position. Any of the following we should suppose would also succeed very well:—Asplenium Trichomanes and its varieties; A. adiantum-nigrum and A. fontanum, and the two Mosses Selaginellas Kraussiana and helvetica.—J. C.

1924.—**Tortoise in Vineries.**—Tortoises are usually fond of milk and will drink it freely; they also like garden green stuff as food; Lettuce especially they are fond of. It is usually believed that they are partial to beetles and cockroaches, but this is incorrect. They will not do harm in a Vinery, but if the floor is of soil may some day suddenly disappear, having buried themselves for a long rest.

1931.—**Varieties of Chrysanthemums.**—Twelve good incurved Chrysanthemums are as under—Bronze Jardin des Plantes; yellow do.; Prince Alfred, Venus, Princess of Wales, Mrs. G. Rundle, General Slade, Sir Stafford Carey, Queen of England, Lord Derby, Princess Beatrice, and Rifleman. Of button-hole kinds—Bob, Mdle. Marthe, Rose Trevenna, Cedo Nulli, Little Gem, Cedronella, Canary Bird, and Fabiola.—A. D.

1974.—**Making Soot-water.**—There are two methods of overcoming the buoyancy of soot in water. If a clear liquid is required, enclose the soot with a stone or other weight in an old bag. If not, mix the soot with a little wet manure or soil before putting into the water, it will then mix easily with water.—GEORGE DUFFIELD, *Winchmore Hill, N.*

—— I find that a very good plan for preparing soot-water for plants is to put a quantity of soot in a bag, tie it up, place the bag in a large pan or tub, and fill with water; the soot soon becomes saturated, the strength going to the water; and the result is good, clear soot-water.—J. E. A.

1967.—**Book on Horticultural Chemistry.**—I would recommend "Reason Why" to get "Johnson's Science and Practice of Gardening." It can be procured at 171, Fleet Street.—T. J.

1979.—**Calochortus flavus.**—The seed may be sown now in well-drained pans of loam and leaf-mould, and placed in a cold frame in a shady situation. The Calochortus requires a light sandy loam, in combination with a warm situation and perfect drainage, thriving best, in a general way, on rockwork. In low damp places the sorts should, in any case, come somewhat above the ground level.—C. B.

1976.—**Climbing Roses not Flowering.**—Without knowing the treatment to which the Roses have been subjected, it is really a difficult matter to assign a cause for the failure. Ventilate freely during the season, and if they make no satisfactory growth take them up early in the autumn and examine the roots, which are probably in a bad state. If this should be the case, the better plan would be to remake the soil and plant young plants.—C. B.

1978.—**Iris chinensis.**—We should think that the Irises, having now become once well-established, would be likely to bloom. At any rate, no good result would be likely to be effected by removing them. We would give them the full advantage of the sun during the growing season. A good hot summer would probably cause them to form flower.—C.

1933.—**Creepers for North and East Aspects.**—For a north aspect nothing can be better than Ivy, although Kerria japonica, Jasminum nudiflorum, and Forsythia suspensa will thrive in such a situation. On the north-east may be planted evergreen and Ayrshire Roses, golden variegated Honeysuckle, and Pyrus japonica.

1952.—**Slugs in Greenhouses.**—I would advise the following plan to get rid of the slugs in a greenhouse, viz.—to go every night with a lamp the last thing, and look well over the plants, when will be found the slugs on the leaves or on the sides of the pots. By doing so the house may soon be rid of that troublesome pest.—J. E. A.

—— Place every evening Cabbage or Lettuce leaves amongst the pots; also laying here and there one on the plants themselves, as it is probable that some of the enemy take refuge during the daytime under the foliage. About ten in the evening examine the leaves; and in the course of a few days the greater portion of the vermin will have been captured, and perseverance for a longer period will exterminate them.—J. C.

—— My plan is to search diligently at night for them, as they come out at night to do the mischief. My herbaceous Calceolarias were attacked by them, and that is the way I got rid of these pests.—T. J.

1953.—**Azaleas Growing too Soon.**—Some growers make a point of taking out the young shoots made before the buds expand. There is, however, no necessity for so doing, as their development does not materially interfere with the expansion of the bloom. If these young growths are removed others will form, but they are oftentimes not so strong, and the wood does not mature so early in the season.—J. C.

1982.—**Treatment of Cactus.**—The roots of the plant in question are probably in a bad state; hence the unsatisfactory state of the foliage. Turn the plant out of the pot, choose another of the same size, well drain it, and then with a sharp-pointed stick remove as much of the old soil from the ball as possible, so as to admit of some fine well-sanded mould being worked down between it and the side of the pot. Water only when dry, and place in a light airy situation.—J. C.

2130.—**How to get rid of Ants in Frames.**—Scatter guano thinly in their runs, as both this and sulphur they dislike; and I have often made them shift their quarters by using these judiciously. When they can be got at away from the roots of plants, boiling water will settle them. Laying pieces of sponge about the frame smeared with treacle will attract them; and when any number has been got together, the sponges may be cast into boiling water. Perseverance usually conquers.—E. H.

2142.—**Wireworms and Maggots in Gardens.**—Turn as much of the land over with the fork as possible, and pick out the wireworms and maggots; the latter are probably the larvæ of the cockchafer. Place pieces of Carrot or Potatoes just beneath the surface of the ground to trap the wireworms, examining them frequently and killing the worms. With perseverance, a small garden may be cleared by these means without the crops suffering much injury in a short time.—H.

2129.—**Woodlice and Mushrooms.**—Very probably the atmosphere in the greenhouse is too dry. Woodlice are generally more troublesome in a dry arid place. Pour boiling water round the sides of the beds, or wherever they hide up; place a toad or two in the recess where the Mushroom bed is; and place a few 6-in flower pots about the beds, partly filled with hay or Moss. When not feeding, the insects will retire beneath the hay in the pots, where they can easily be destroyed.—E.

2128.—**Propagating Ivy.**—Ivy cuttings may be planted any time from October to March, with a certainty of their growing. Cut off points of shoots about 1 ft. long; trim off the lower leaves, and plant firmly in the ground in rows. The choicer variegated sorts may be planted under hand-lights.—H.

2126.—**Climbers for Filling up Hedges.**—Any of the Ivies will do. Even the strong-growing Irish variety may be kept down to the height named by annual cutting in spring, and weeding out the long shoots as they are formed with the knife during summer. One of the smaller-growing variegated forms, such as Marginata argentea, will look pretty; and, not being so rampant, will not entail so much work. The common Periwinkle, Vinca major, will be suitable, and will make a neat base to the hedge with a little trouble in trimming and training.—E. H.

2134.—**Weeds in Asparagus Beds.**—Salting Asparagus beds now to kill Twitch will kill the Asparagus roots. The only way to get rid of it is to get round and under it carefully with a small fork; and, as Twitch is mostly a surface-rooting plant, this can be done, I should think, without injuring the Asparagus roots, which, in the case of old beds, are generally deepish down. If the Twitch cannot be got at in this way, make a new plantation of Asparagus on clean, well-worked land at once, and dispense with the old bed as soon as possible.—E.

2152.—**Cow Manure.**—Is this useful for ordinary garden purposes?—E. S. [You can have nothing better. It is best mixed with a little soot, and allowed to become decomposed before being used.]

2153.—**How to Grow Coleuses.**—What treatment do Coleuses require?—PROPAGO. [Light sandy soil, plenty of heat, sun, air, and water.]

2154.—**Quassia Water and Soft Soap for Rose Wash.**—I shall be glad to know the strength of the Quassia water when applied alone, and what quantities of Quassia water and soft soap should be used for the combined wash.—H. BRADFIELD. [4 oz. of Quassia to 1 gallon of soft water. For the combined wash add 4 oz. of soft soap.]

2155.—**Balsams for Exhibition.**—When is the best time to sow Balsams to be ready to exhibit in the last week in September? and would they do in a cold frame better than in a Vinery where there is a quantity of other things kept?—H. LEWIN. [Sow at once. The frame would be better than the Vinery.]

2156.—**Azalea Cuttings.**—In the autumn I struck some Azaleas; they grew for some time, but are turning yellow and forcing themselves out of the soil, which is peat with a little sand on the top; they are well watered and kept in a cold house. Can you tell me why they do not thrive?—S. J. C. [Probably they want potting off singly. They are potbound.]

2157.—**Muscat Grapes Spotting.**—I have got the spot on my Muscats. It comes on them just as they are finishing their first swelling and then stoning. It is a very small brown speck, hardly visible to the eye; after a while it dimples in and then goes off quite bad. Would any one tell me the cause of it, and how to prevent it spreading?—C. W. [We have had much experience of the disease you complain of, but we can suggest no real remedy. Perhaps some of our readers may be able to assist you.]

2158.—**Planting Vines.**—Is it now too late to plant a Vine? If not, what kind should I purchase? I purpose planting it outside a lean-to unheated glass structure (south aspect), and drawing it through a hole under the sill to train up inside the roof. Any hints as to the best way of planting will be most acceptable to A NOVICE. [We should advise you to wait till autumn, and before that time we shall most likely publish articles respecting the planting of Vines.]

2159.—**Pruning Passion-flower.**—I have a Passion flower in my conservatory which has grown very wild and straggling; is it too late to prune it?—NANCY. [Thin it out at once, leaving of course any shoots which show flower.]

2160.—**Soils for Geraniums and Fuchsias.**—What is the best compost for these?—NANCY. [Loam and rotten manure or leaf-soil in equal parts, and some road sand.]

2161.—**Well-rotted Manure.**—How long ought manure to lie before it is well rotted?—NANCY. [Till it can be crumbled in the hand. Constant turning will facilitate decay.]

2162.—**Primula Seed.**—I have a pink and a white Primula, which have just finished flowering. Can any one tell me whether by keeping them I am likely to be able to ripen seed for sowing next year? I have no greenhouse or hotbed, but an unheated conservatory.—NANCY. [If you place them on a sunny shelf in the conservatory you may be able to save a few seeds, but they are hardly worth your trouble.]

2163.—**Cucumbers Dying Off.**—My Cucumber plants grew well and looked very healthy until they began to fruit, when the plants suddenly died off; what is the cause?—PRACTICAL GARDENER. [It is probably the Cucumber disease which has been such a trouble to many growers of late years, and for which we have never yet heard of a practical remedy.]

2164.—**Propagating Auriculas.**—When is the best time to increase alpine Auriculas by division?—W. D. [After they have done blooming—say the end of June.]

Cucumber Frame against Walls.—*E. R. A.*—We do not think the lights could well be made to slide sideways; the best course would be to hinge them at the back. They could then be lifted upright and fastened back to the wall if necessary.

Index for Gardening.—*Chas. E., Chester.*—The Frontispiece and Index to Vol. I may be had through all booksellers, or from our office, price 3d. complete.

House Slops for Hollies and Currant Trees.—*Subscriber.*—They must be placed in a tub for a few weeks, and exposed to the air, and be well diluted. Great care will be necessary in their use.

Egg Plants.—*H. T.*—These require a warm frame to grow them well; any rich soil will suit them. They want plenty of water overhead and at the root when growing. They may either be planted out or grown in pots.

Raspberries.—*Swansea.*—To produce fine fruit the canes must not be too close together, and the suckers produced at the bottom must be kept cut off, with the exception of enough to supply canes for next year.

Red Sage.—*Subscriber.*—Any nurseryman should be able to supply you.

Hyacinths from Seed.—*J. M. C.*—Your efforts in this direction will, we fear, end in disappointment. Our nurserymen always buy their Hyacinths from Holland, which they would not be likely to do if they could raise them at home.

C. B. F.—The disease is called "curl." It is caused by the sudden alternations of heat and cold. The only remedy is that of protecting the trees from cold winds in early spring.

Shading for Greenhouse.—*P. B.*—Try "Summer Cloud," to be obtained in tins at any good seed shop.

C. W.—The leaves appear to be scalded.

Liquorice.—*W. T.*—You will find all the information you ask for, and more, on this subject in Shaw's book on "London Market Gardens," price 3s. 6d., at our office, or from any bookseller.

One in a Proper Fix.—The insects sent were common earth worms.

Speckled Geranium Leaves.—*Mrs. W.*—This is often caused by bad drainage and over-watering. Let the plants get dust-dry before you water them again.

Scale, Thrips, &c.—*Mrs. W.*—We cannot tell you the origin of these insects. They are visible to the naked eye.

Names of Plants.—*Aberdeenshire.*—Ranunculus amplexicaulis.——*F. H. W.*—We cannot name plants from leaves only.——*W. Watson.*—The Rose sent was Catherine Mermet, as far as we could judge from its withered condition.——*T. Layley.*—1—Male plant of Aucuba japonica; 2—Daphne Mezereum probably, but we cannot tell without flowers; 3—Euonymus japonicus aureus variegatus.——*Amateur.*—1, Senecio Ghiesbreghti; 2, Alchemilla alpina; 3, Arabis albida; 4, Pulmonaria angustifolia; 5, Chrysanthemum frutescens; 6, Chrysanthemum frutescens var. Linnæanum; 7, Cyanotis repens.——*H. C.*—It is impossible to name a plant from such a specimen as that sent.

QUERIES.

Before sending queries it is well to consult the first volume of GARDENING, *which contains an immense number of practical articles and questions answered by men well acquainted with the subject.*

2165.—**Saving Wallflower Seeds.**—How can I save Wallflower seeds that will produce double flowers? I have both double and single varieties.—S. U.

2166.—**Management of Fern Cases.**—I have a Fern case about 17 ft. by 9 ft., at present containing Maiden-hair and other varieties. Can any one furnish a few hints as to management?—F. J. D.

2167.—**Grafting Plums on Apricot Stocks.**—I have an Apricot which year after year partially dies off, and is unproductive. If I cut away the Apricot branches will the stock do for grafting Plums or Pears on? and if so, what sorts?—J. H. R.

2168.—**Coprolyte.**—To what use can I put this in the culture of plants?—A. H. J.

2169.—**Paste for Destroying Rats.**—Would "Rustic" kindly say where this is to be procured?—A SUBSCRIBER.

2170.—**Pansy and Aster Seeds.**—Would any readers tell me what their experience of seeds has been this spring? I have a cold frame facing south, and have carefully followed the instructions contained in GARDENING, but without success. Two or three seeds did come up, but almost immediately turned yellow, and died off. I put them in three weeks ago.—E. M. H.

2171.—**Blight on Apple Trees.**—How can I clear my Apple trees of what appears to be mildew? On examining each of the little patches, I find very minute insects with red blood.—EAST SHEEN.

2172.—**Watering Early Potatoes.**—I have a row of early Potatoes up under south wall nearly 1 ft. high, the foliage of which is beginning to curl somewhat. Would it be advisable to water them? they being, of course, under cover by night, and consequently unable to receive any moisture in the form of rain or dew.—NORTHANTS.

2173.—**Road Sweepings as Manure.**—Having to obtain manure for my garden by gathering horse droppings from the roads, I should be obliged if some one would tell me what is the relative strength of such material, and how to apply it to various crops. Is it good for Celery?—G.

2174.—**Nitrate of Soda for Plants.**—Would any one inform me how to apply this as a manure, and what effect it has upon plants and flowers?—BYKER.

2175.—**Flowers and Gas.**—Will any reader kindly tell me what plants will thrive in rooms where gas is always used for some hours daily, as I find great difficulty in keeping any alive?—A LOVER OF FLOWERS.

2176.—**Soot-water in Vinery.**—I have been sprinkling the walls and floor of my Vinery every day at shutting-up time with soot-water, and the Vines look very strong and healthy. If I continue the soot-water now the fruit is set, will it cause rust on the Grapes, or injure them in any way?—NOVICE.

2177.—**Pennyroyal.**—How can I preserve the roots of this in winter?—JESSE.

2178.—**Growing Cucumbers.**—I think of trying my hand at Cucumber growing under glass as soon as the bedding stock is moved out. Will some one give me a few hints as to training, &c.? What kind of wire is used? With what and how is it fastened—up the rafters or horizontally? How many wires would one plant require? Should they hang loosely in loops or not; and with what are the plants fastened to the wires? Size of greenhouse 20 ft. by 10 ft.; flue, two sides, and front.—JOHN BENNETT.

2179.—**Leaf Impressions.**—Will Mr. Hodson, of Liverpool, kindly tell me how the oiled sheets are to be prepared? and also how the carbonic paper is to be prepared, or where it is to be obtained?—C. A. R.

2180.—**Sowing Begonias.**—How should Begonia seed be sown? I have failed to raise plants from seed several times.—L. W.

2181.—**Ants and Fruit Trees.**—For the last six years (though not before) I have been suffering from a plague of black ants, which infest the Cherry and Apricot trees, coating the under part of the leaves with black eggs, which not only destroy the fruit, but also the trees. Have any readers experienced this nuisance? and can they suggest a remedy?—C. J. B.

2182.—**Destroying Gnats.**—What is the best means of getting rid of these objectionable insects? A swarm of them seem to have generated in a wine cellar, from whence they escape over the house and into the conservatory. Flowers of sulphur have been burnt with but slight success.—NOTNUM.

2183.—**Gloire de Dijon Rose Failing.**—I have one of these Roses in my greenhouse. It is 3 ft. high, and has lately been very severely attacked with mildew. I applied flowers of sulphur to it, as well as mildew composition. All the old leaves fell off, and now the new ones all curl up whenever they come out of the bud. What is this curling of the leaves, and what should I do with the plant?—ROSÆ AMATOR.

2184.—**Striking Cuttings of India-rubber Plants.**—Can any one give me information as to striking cuttings of an India-rubber tree? Should they be struck in water or soil, and is heat necessary?—EMILY HAY.

2185.—**Rose Maggots.**—I have a great number of standard Rose trees, and have but very seldom been able to free them from a small green maggot which destroys the buds. I have tried several remedies for some years without success. Can any reader suggest a remedy?—W. ROWCLIFFE.

2186.—**Propagating Frame.**—Can any one inform me the best mode of making a propagating frame in a greenhouse. I have a space about 2 ft. 6 in. wide by 8 ft. long I could use for it. The propagating frames as advertised are too much like toys.—PROPAGO.

2187.—**Growing the Bush Marrow.**—I have had a plant of this given to me; will some reader tell me if it requires any support when the fruit shows? To an ign ramus like myself it seems impossible for the stem to support the weight of the fruit without artificial props. Any information on the cu ture of Bush Marrows will be thankfully welcomed by EAST SHEEN.

2188.—**Wireworm in Gardens.**—My garden was three years ago pasture land; it was well dug and trenched. Now the wireworm is destructive to all vegetables and many flowers. Can any of your correspondents say what can be done to get rid of this pest?—B. P.

2189.—**Manuring Parsnips, &c.**—Can any kind of top-dressing be applied to Parsnips and Carrots. I took my garden too late to give them manure at the time of sowing. Would liquid manure benefit them and Turnips?—G. R.

2190.—**Flowering Shrubs for Borders.**—I want two flowering shrubs to plant in small beds on each side of my front door. What are the best kinds?—THOMAS MIXTURE.

2191.—**Plants in Rooms.**—I want to keep a stand of Ferns and flowers in a sitting-room window. Ought I to remove them from the room when the gas is lighted? I have a verandah outside my house; I have thought of having sides of glass built up so as to make a kind of little conservatory, but the roof would be of wood; how would that answer?—G. H. M.

2192.—**Disease in Gooseberry Trees.**—My Gooseberry trees this year are attacked by a disease that we do not understand. It appears on both leaves and fruit. It first appears in the form of a bright red blotch on the leaves, which extends and swells to a considerable size; also on a great number of the berries. Can any one tell what is the cause and what the cure? Some of my neighbours complain of the same.—JNO. HOPKINSON.

2193.—**Trailing Azaleas.**—Can any one tell me what a trailing Azalea is like? and if it is possible to get one? It is a Scotch badge, so it must be hardy to a certain extent.—ENFIELD.

2194.—**The Best Pansies.**—Will any reader please to tell me which are the best six Pansies in cultivation?—X. Y. Z.

2195.—**The Best Roses.**—Will any reader tell me which are the best six Roses in cultivation?—X. Y. Z.

2196.—**Leaf Impressions.**—Mr. Hodson says (p. 96), "Take your leaf out, and place it between your carbonic paper," &c. Will he kindly tell me in an early number what this carbonic paper is—where it can be obtained, or how to make it? Would the black paper sometimes used for producing duplicate writing answer the purpose? I fancy that would scarcely blacken the leaf sufficiently.—S. D. BIRD.

2197.—**Stove for Greenhouse.**—I have just bought a portable greenhouse, 15 ft. long by 7½ ft. wide. Can any of your readers recommend a stove or lamp capable of keeping out the frost?—N. S.

2198.—**The Feather Grass** (Stipa pennata).—How can I raise this from seed? I have made several sowings, but failed. It does not germinate.—B. B.

2199.—**Insects in Seed Pans.**—Will any reader inform me by what means I can destroy the numerous insects which are in my seed-pans, &c., and which I have good reason to believe eat up the roots of the seedlings. Of the insects some are white and others brown. I have tried soot, but it does not kill them.—QUITE AN AMATEUR.

2200.—**Caterpillars on Cherry and Rose Trees.**—Can any one inform me of the best way to kill caterpillars on Cherry trees and Rose trees?—H. B.

2201.—**Propagating Sweet-scented Verbenas.**—Can any one give me directions how to succeed in striking cuttings of the sweet-scented Verbena? We have two large trees growing out-of-doors against a west wall, which are greatly admired, but we cannot succeed in striking cuttings.—W.

2202.—**Uses of a Hotbed Frame.**—I have a frame, 6 ft. long by 4 ft. wide, filled with stable manure, with an average temperature of 70° Fahr. What can I grow in it besides Cucumbers and Melons, &c? Will any fruit, or Rhubarb, or anything useful live, &c., in it. It is fixed in a slanting direction facing the south-west. Can any reader give me a little information regarding it? or else the frame will be of no service to me.—CONSTANT READER.

2203.—**Window Plants.**—Would some readers kindly give me a few hints in keeping plants in the room windows, and how often should they be watered? I should be glad if some one could give the names of four beautiful hardy plants for the window, which would grow tall enough to form a screen from the road. There is both gas and fire in the room. I have tried to grow Geraniums and Fuchsias, but never succeeded, as the buds always drop off before flowering. About three weeks ago, I purchased a Begonia and watered it occa ionally. The other day it seemed to be dying, and I took it to a friend to put it in his greenhouse, and a Fern also; and he told me I had given the Begonia too much water, and the Fern, kept it too dry. I have purchased a Musk plant, and should like to know what treatment it will require now, and when done flowering?—C. J. WRAITH, *Wakefield*.

2204.—**Summer Flowering Bulbs.**—Having found spring-blooming bulbs such as Scillas, Narcissi Crocus, and miniature Hyacinths, do very well in a Wardian case, open at day and closed at night when the gas is lit, I should like to know if there are any bulbs blooming in the summer, not more than 12 in. in height, to succeed them? They would not receive any sun.—THANKFUL.

2205.—**Diseased Peaches.**—The show of bloom on my Peach trees was good, and up to the last fortnight we had hoped to realise a fair crop. To day they are all either falling off, or they are marked with decay. The trees appear to be good and in full health. They have been well manured and supplied with water, as we think, sufficiently. They are planted in a lean-to house with ventilation at the back, and great care has been bestowed to give a regular supply of air. We are quite unable to account for their present state, and shall be glad to have the opinion or suggestion of some reader on the subject.—A. & Z.

2206.—**Outdoor Cultivation of Tomatoes.**—A few directions and hints on this subject would be very acceptable. Is there any chance of fruiting the Currant Tomato in the garden?—W. B.

2207.—**Heating a Greenhouse.**—I desire to erect a small lean-to greenhouse, 8 ft. by 5 ft., for forcing bloom for a conservatory. Would any reader kindly inform me how I may heat the same without using coal or gas, as both would be inconvenient?—G. H. I.

CATS IN GARDENS.

The Law on the Subject.—Some months ago I wrote at length on the subject of these terrible pests, feeling annoyed not only by their ravages, but by the fact that, while they almost swarmed in my immediate neighbourhood we were at the same time by no means clear of either mice or rats. I see that recently correspondents of GARDENING have been exercised by the plague of cats in their gardens; and in the number for April 3 "Major" prescribes the catching of them in a large trap with a falling door, and drowning them when caught. I just want to remind readers of what I pointed out in my former communication touching the law on the matter, which it will be well to observe. It applies—as I believe I then remarked—to the use of traps, as well as to the use of poison for the purpose. I recommended precisely the kind of trap advised by "Major;" but I added the caution that no strong-smelling bait should be used to entice the animals to the traps, whereby the party using such bait would (on proof thereof by any one aggrieved) be amenable to the law. Bait the trap with an ordinary bit of meat, a dead mouse or sparrow, or anything of the kind, but not with Valerian—that is, if there be any fear of discovery—and then whatever comes to the

trap is fair game. The typical case in the law books is that of "Townsend *v.* Wathen, 9 East, 277," and it is described as follows:—"Where a defendant caused traps scented with strong-smelling baits to be placed on his land, so near to the plaintiff's house as to influence the instinct of the plaintiff's dogs and cats, and draw them irresistibly to destruction, it was held that the defendant was answerable to the plaintiff for the injuries sustained, although he had no intention of injuring the plaintiff particularly; and it was also held that he (defendant) would be responsible for injuries sustained by any dogs (or cats) tempted from the highway or public paths to the traps on defendant's land, for he had no right to invite them there for the purpose of destroying them." Now, Valerian would unquestionably come under the description of "strong-smelling baits," at least so far as cats are concerned, for they are most curiously fond of it; and it might be questioned if a cat caught by it were caught as a casual or habitual marauder, or had been enticed by the special bait used.—W. H.

Edelweiss.—Much has been written of late about the Edelweiss, and very erroneous notions are given as to the rarity of the plant, the difficulty of finding it, and, above all, the difficulty of growing it. As a matter of fact it is quite a common plant in many regions by no means inaccessible, though all that is said about it will probably cause it to be exterminated in districts within easy reach of children who sell it to those who do not find it for themselves. The plant is quite easily grown, even as a border flower, in many well-drained soils; and in a rock garden it would be quite at home. Sometimes in our gardens it gets so large that it is not quite so interesting in appearance as it is on its native mountains. As regards beauty it is, though interesting, less remarkable than hundreds of other plants.

The Edelweiss.

HOME PETS.

Training a Young Hare.—A young hare may be most successfully brought up with a little care. If only a few weeks old, and it will not lap warm milk, some must be put in a small bottle, nicely warm, a small quill put through the cork, and then a small piece of rag put round. The little thing will suck that, but it soon learns to lap like a kitten and to eat bread and butter and biscuits. A large bird-cage makes a good house for it, and makes it tame also. It must never have too much liberty, or it will become wild. When older give oats, bran, and all nice green meat, especially Vetches, Clover, and Broccoli. The writer had one until it was ten months old, which had bread and butter or plain bread and warm milk all the time; but it had too large a run, and became so restless that she gave it its liberty when summer came. Its bed should be hay if in a cage, and sand if in a run. The writer's sat for months on a piece of carpet.—M. H.

Food for Tortoise.—For the past six years I have had a tortoise which came from Alexandria. It has had full range of kitchen and fruit garden. I observe it has a great partiality for Lettuce, Dandelion, and Strawberries. I never feed it in any way. About October it buries itself in the soil, and in April again turns out.—W. G. K.

Bullfinch with Injured Leg.—I have one with a swelling at the joint, causing him to carry it straight behind him. Being in an aviary, it is difficult to catch him to relieve the leg. Would it be better, therefore, to cut the leg off? If so, what part part of the leg would be the best, and what would be the best way to do this without injury to the bird?—HAMILTON.

Feeding Birds.—Can any one tell me the best kind of food for young thrushes and larks in the nest, and how often should they be fed each day?—J. M.

Canary Losing its Feathers.—Can any one tell me the reason why my canary loses his feathers and his tail?—J. R. [Probably he his moulting.]

Canary not Singing.—The canary in the possession of "Puss" is undoubtedly not in the perfect state of health it should be. A bird when indisposed is very like a human being in its fretfulness and depression, and you must not expect him to sing. You are treating quite right; but to restore him to anything like health you must administer a tonic, and I know of no other better than the Finchine, sold by Mr. Flory, Addiscombe, Croydon. I always recommend it to my brother fanciers, and they always find it admirably suited for the various ailments to which cage birds are subject.—A. D'A.

POULTRY.

Sitting Hens.—It is a curious fact, and one that shows there is no rule without an exception, that my best and most reliable sitters and mothers are old hens; one especially, quite seven years old, is one of the best in the world: I can trust her with the choicest eggs. Eleven full-sized eggs I hold to be enough for an averaged sized hen at any time; with more, it is not possible to distribute the heat of the body equally all over the sitting. Many of the instructions given as to treating sitting hens and feeding the young chicks are all nonsense, as is proved in the case of hens that steal their nests, and bring off a fine lot of healthy young. Perhaps my hens are less stupid than other people's, but when I sit one I just put the eggs into a corner on some soft straw, and put down the hen by the side of the nest, and she walks on and covers the eggs without further ado. I put water within reach, if she needs that at any time, but turn her off the nest every morning *nolens volens*, drop my pocket-handkerchief over the eggs, and see her out into the yard where she is fed alone, sometimes on Corn and sometimes soft food; and as soon as she has had a proper amount of exercise, is seen safe on the nest again; and this goes on from day to day until the chicks are hatched. Attention of this kind, even if not absolutely needed, is certain in results. During very hot weather, a gentle sprinkling of the eggs with warm water is useful, but during the spring, when the ground is moist, the heat of the hen will attract sufficient moisture from the earth. Failures too often result because the eggs are not fertile.—A. D.

Fowls not Laying.—"H. H.'s" Brahmas are too fat internally; consequently they lay imperfect eggs. Maize is not a suitable food for birds kept in confinement, as it is too fattening. Give each bird a pinch of Epsom salts; discontinue the Maize, and let them have as much exercise as possible.

Fowls with Swollen Beaks.—"Good Health" surely must be jesting when he asks what is the matter with his birds, and directly after tells us "they are very fat, eat well, and do not lay amiss." What more can any poultry keeper want, in the name of common sense? But respecting swollen beaks, here we are utterly at a loss to know what is meant. The beak is a hard, horny substance, and we cannot conceive a bird possessing any swelling on this. With regard to the colour of the beak and legs, we fancy this results from a cross with some yellow-legged game.—W. J. NICHOLS.

Unfertile Duck's Eggs.—We should advise "Pink May" to change the drakes, for, with two drakes to seven ducks, every egg ought to have produced a bird. If they have no water, sink one half of a good-sized tub in the ground, as it often happens that when ducks are without water to swim in, many of their eggs prove unfertile.

Keeping Fowls in Small Places.—In answer to Henry Cramp's queries as to the size of a run suitable for six hens and a cock, we say give the birds al the room you can posibly spare out of the small garden. The dimensions of the place must depend on the amount of space which can be allotted to the birds. The cheapest and best material for enclosing a run is galvanized wire attached to four or more posts, and the bottom consisting of loose earth. As you only want the birds for eggs, some common Spanish would answer best.

Fowls Eating Eggs.—Unless the birds are valuable it is best to kill them, for after having once learned to eat their eggs, there is no cure. The eggs, however, may be saved if the nest is placed a few inches from the ground and the bottom made to slope towards the middle, one board overlapping the other with sufficient space left for the egg to fall through on to some hay placed underneath to prevent it from being broken; or a cut made crossways through a piece of carpet fastened loosely across a basket with hay underneath will answer equally as well, the object being to get the egg immediately it is laid out of reach of the hen.

——I have broken one of my hens of this evil. I made a nest of wood with a round bottom; then sewed some hay twisted like a rope round the bottom, where there is a hole for the egg to drop through into a little drawer with a sloping bottom, with cotton-wool on so as not to break it. The egg rolls out of sight of the hen in which ever part of the nest it drops into. I could make one more simple by sewing a piece of coarse cloth into a box, with a hole cut in the bottom for the egg to drop out.—B B.

Brahma Hens Sitting.—It is impossible to say how long or how many eggs a hen will lay before showing a desire to sit. One will lay a dozen eggs and then become broody, while another of the same variety will lay the whole season through, and yet show no sympmtoms of broodiness. The large egg is a double-yolked one, and has nothing whatever to do with the hen's desiring to sit.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 3s to 6s; Azalea, 6s to 12s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 3s to 6s; Lily of the Valley, 6s to 18s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus (various), 4s to 9s; Pelargoniums (zonal), 3s to 6s.; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips. 4s to 9s: Violets (blue), 1s to 2s; Violets (Neapolitan), 4s to 5s; Violets (French), 1s 6d to 4s 0d. —*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Camellias, 1s to 4s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 6s; Roses (forced), 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 3s to 6s.

Plants in Pots.—*Per doz.*—Arum Lilies, 6s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Aralia Sieboldi, 12s to 30s; Ardisia crenulata, 18s to 30s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Clematis, 9s to 18s; Cyclamen, 6s to 18s; Daphne indica, 12s to 24s; Deutzia gracilis, 9s to 18s; Dielytra, 9s to 12s; Draccena (green-leaved kinds), 12s to 30s; Draccena 18s to 60s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Hyacinths, 4s to 9s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Narcissus, 0s to 00s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 12s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s. —*Per pair.*—Azaleas, 10s to 20s; Maiden-hair Ferns (large), 4s to 7s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts. per 100 lb, 120s; Grapes (English hothouse), per lb, 3s 6d to 7s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per* 100.—Asparagus, 1s 6d to 4s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips (outdoor), 3s to 4s; Radishes, 1s 6d to 3s; Herbs, 2d to 6d. *Per doz punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 9d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 5s; Chervil, per punnet, 0d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 3s to 6s Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

PARIS DAISIES.

THESE, known as French Marguerites, are among the most useful plants that an amateur can grow. The white kind, Chrysanthemum frutescens, is well known as being largely grown for supplying the London markets with flowers during winter and spring, and it is also largely grown on the Continent in flower gardens. We have also a small yellow kind named C. Comtesse de Chambord; but the best of all is the large yellow Marguerite, now being distributed by Mr. Howard, of Southgate, and which is named C. frutescens Etoile d'Or. It is said to have been raised in or about the year 1874 by M. Desgeorges, the then gardener to M. Adam, of Villa des Bruyères, Golf Juan, near Cannes; it was obtained from seed of Crysanthemum frutescens var. Comtesse de Chambord. As a garden plant this is one of the best, as it will grow in any soil, and flower profusely all through the summer and autumn, after which time if the

GROUP OF PARIS DAISIES (CHRYSANTHEMUM FRUTESCENS AND C. ETOILE D'OR).

plants are lifted and potted, they will flower all through the winter and spring in a greenhouse, when they may be again turned out-of-doors in summer. As a window plant too this is first-rate. It produces a constant succession of its large soft, yellow blossoms, which last in good condition for at least six or eight weeks. This kind and the white one only are perhaps worth culture, except variety be required, when, of course, the other kinds may be grown; and any one wanting two good hardy free-flowering plants for the garden conservatory or window cannot do better than secure C. frutescens and its yellow companion Etoile d'Or, or Golden Star. When grown in pots, a rather stiff soil, and not too large pots, will be best calculated to induce free flowering. All the kinds are easily increased by means of cuttings.

FRUIT.

GRAPE GROWING IN UNHEATED GLASSHOUSES.

THE time of year has now arrived when Vines growing in cool houses will be making progress. A few hints, therefore, as to the general management during the growing season may not be out of place. Now that the power of the sun is making itself felt, the grower must endeavour to utilise its rays to the fullest extent; and it is only by so doing that the owners of unheated Vineries can hope to succeed in ripening off a good crop of fruit. Many, too, whose glass structures are provided with a heating apparatus do not care to push their Vines into an early growth by its means, the consequence being that only in very favourable years do they obtain good well-flavoured fruit. From now onwards the golden rule should be to ventilate only when needful, varying the amount of air given according to the weather, shutting up the house directly the diminishing power of the sun renders it safe to do so. By following up this system throughout the summer and early autumn months, the necessity for employing artificial heat, either for starting the Vines into early growth or for ripening off the crop in the autumn, will be obviated; and, unless the summer should prove exceptionally sunless, the Grapes will ripen in a satisfactory manner. On bright sunny days a little air should be given at the top of the house some time before it feels the force of the sun. It is a great mistake to keep the structure closed until the temperature has risen some 15°, and then suddenly admit a volume of air. Such treatment, especially when often repeated, is productive of the worst consequences. The foliage, on the health of which the future crop depends, receives a severe check, rendering it liable to the attacks of the enemies to which the Vine is subject. On a debilitated and weakened leaf both red spider and mildew have but little difficulty in establishing themselves: for it is a curious fact—but one, nevertheless, familiar to most practical men—that insect plagues and fungoid diseases evince a decided preference for and fasten most readily upon foliage the tissues of which are in a more or less unhealthy state. Most greenhouses are provided with front sashes; these, however, need only to be opened on hot days. In a general way, excepting at this time of the year, opening the top ventilators will be all-sufficient; it is only in the hot summer days that the need for a free passage of air is felt. Abundance of air without draught is the maxim to be followed in the ventilation of Vineries. A cold current of air checks and chills, and induces a stunted growth. In the matter of ventilation, the grower will, however, have to be guided by the aspect of the house and the size of the glass. A structure facing the south and glazed with large squares will need a more free admission of air than one with an east aspect or glazed with small panes, or of which the woodwork may be of a heavy description. The Vine delights during its season of growth in a warm moist atmosphere; therefore, on closing the house early in the afternoon, well syringe the foliage and damp down the path. Red spider, one of the greatest scourges of the Vine, only appears in force when an arid atmosphere prevails, and cannot multiply when the proper atmospheric conditions prevail. When the Grapes are in flower avoid syringing heavily. The syringe should be provided with a spout, on which the operator should so place his finger that the water emerges from it in the form of a fine spray. In this manner every particle of the under surface of the foliage may be wetted without danger of washing off the pollen from the flowers. Be careful to use water of the temperature of the house, and see that it is perfectly clear. As soon as the Vines show flower, stop each flowering shoot close to the bunch, thus throwing back the sap into one leaf, which will then attain good size and substance. From the axil of this leaf a shoot will quickly form, which must also be stopped back to one leaf. By the time this leaf is well formed the berries will have set; consequently, shoot growth will not be so free. Laterals will, however, be continuously forming, and these must be pinched in as they appear. It is, nevertheless, as well to allow several of the terminal shoots to ramble freely after July; they serve to encourage root action, and help to maintain a free active circulation of the sap.

Before proceeding further, I would caution amateurs against the two free use of the syringe. It should be remembered that this instrument is merely a means provided for counteracting undue aridity in the atmosphere; therefore never employ it in dull, cloudless weather; and syringe early, so that every particle of moisture dries off by night. The syringe used with discrimination has great value; but in the hands of some it proves rather an enemy than a friend. Mildew, that worst of all enemies of the Grape grower, will quickly make its appearance when excessive use is made of the syringe. This pest, unlike the red spider, only comes when a too damp, stagnant atmosphere is maintained; it will, therefore, be seen that the Vine grower must at all times seek to preserve a happy medium, avoiding the extremes of aridity and saturation. The mildew, however, makes its approach in such an insiduous manner, and, when once in full possession, is so difficult to dislodge, that the inexperienced grower too frequently has to suffer great loss and vexation before he can destroy it. The best way is to hinder its approach, which may easily be accomplished in the following manner:—As soon as the berries are as large as No. 1 shot, mix up some flowers of sulphur into a paste, and then, having stirred it into a pail of water, syringe the Vines with it. It is not the great quantity of sulphur that is needed, but rather its equal distribution. A few grains on each leaf is enough. Be careful never to use black sulphur, the employment of which may cause the most disastrous consequences; and do not apply sulphur of any kind until the berries are fairly swelling. Many a crop of Grapes has been ruined by dusting or syringing with sulphur before the skin of the berry has become thick enough to bear its application. Rust, which sometimes disfigures the bunches to a serious extent, is the result of an injury inflicted on the berry when in a young and tender state. Sudden and chilling draughts of air, the too early application of sulphur, and careless handling when thinning, are the principal causes of its appearance. As soon as the berries are fairly formed thinning should be proceeded with. With the thumb and finger of the left hand seize the lowermost berry, drawing the bunch upwards, so that its position is reversed. In this manner each berry is distinctly seen, and the operation of thinning is thereby much facilitated. The inexperienced generally err in leaving too many berries, the result of which is that, not having space to develop, they are when ripe lacking in quality. The surest way for those who have had no great experience in this matter is to go over the bunches twice, taking out the smallest berries the first time. A season or two of practice is requisite, in order to impart the confidence necessary to enable the grower to complete the thinning at one operation. As soon as the berries begin to colour, air should be admitted more freely. In an unheated house, where the above instructions have been carried out, the first berries will be colouring by the middle of August. At that time of the year we are apt to get very hot weather, with still warm nights, in which case the ventilators should be left fully open. Nothing invigorates so much as the admission of night air when moist and balmy. Want of colour and shanking are often caused by undue exclusion of air during the colouring period; at the same time the grower must be guided by the state of the weather, and should, when the evenings are chilly, store up the sun's rays as much as possible by closing at an early hour of the day. During this period it is advisable to avoid syringing the Vines. If they have been well looked to in the manner recommended, the foliage will be clean and free from insect pests, which after this date are not troublesome. Damping down the floor in the evening may however still be practised. By acting upon the hints here given the amateur in his modest greenhouse may hope to produce fruit of the best quality without having to resort to fire heat at any period of the year. Before taking leave of this subject, I would, however, warn growers that care and attention must never be relaxed during the growing season. One week's inattention or negligence will suffice to undo the work of months. Paying the strictest attention to ventilating, varying the amount of air according to the weather, closing as soon as practicable—making, in fact, the freest use of the sun's rays—is the only way by which the owner of an unheated glasshouse can hope to ripen off a good crop of fruit.

J. CORNHILL.

Byfleet.

VEGETABLES.

Late-sown Scarlet Runners.—In autumn, when outdoor vegetables are comparatively scarce, a good crop of Scarlet Runners is extremely valuable, as they continue bearing long after the more tender French Bean is over. For this supply a good sowing should be made about the middle of June, and the plants should be treated in other respects exactly as those from earlier sowings are. They should be securely staked, as rough winds invariably prevail in autumn, and as sheltered a position as possible should be selected for them. It is too often the case that only one sowing is made in spring, and when the plants from this cease to produce pods fit for gathering the season is considered over; any one, however, who gives the late-sowing system a trial will, in average seasons, greatly prolong the gatherings, and will find the Scarlet Runner even more useful as an autumn than as a summer vegetable. It may be remarked that gathering the produce as soon as it is fit for use, and not allowing any pods to get old and seedy, is most important, as seed-producing is an exhausting matter, and soons bring the productive power of the plants to a standstill. Thin sowing is also advantageous. Upright rods securely fastened to horizontal ones make a good support on which to train the plants.—G. M.

Endive.—This is rarely grown in small gardens, but it forms a very desirable addition to the salad bowl in autumn and winter, especially if Lettuces be scarce or inferior. Sow towards the end of June (if sown early the plants are very likely to bolt before they are large enough for use) in drills 1 ft. apart, and when large enough thin out to 10 in. or 12 in. apart in the rows; the thinning may be planted elsewhere the same distances asunder. Sow again in July, and transplant the principal part in some open, well-exposed situation; the remainder should be planted in some open, well-drained, raised border. A few more may be sown in August if some shelter, such as a frame, can be found for them in winter. There are various ways of blanching them, viz., by laying boards or slates over the plants when they are full grown and quite dry; tying them up and placing inverted flower-pots over them, with pieces of slate over the holes at the tops to exclude light; covering them with dry leaves or coal ashes; or taking them up with balls of earth and storing them in a dark cellar—placing them, in fact, in any position not too damp to induce decay, and from which light can be excluded. Of course only a few should be blanched at a time, as this hastens decay, and they should not be blanched till they are nearly full grown. In other respects Endive requires much the same treatment as Lettuces. There are several varieties, but the Green Curled is the most useful.

Premier Runner Bean.—Although not quite so serviceable for small gardens as the

Scarlet Runner on hot porous soils, this Bean is worth a trial, being less liable to suffer from the attacks of red spider. It is a climbing variety of one of the Long-podded Kidney Beans, a vigorous grower, and bears long tender pods, not unlike the Canadian Wonder. It should be planted about the same distance apart as the Scarlet Runner, and requires staking in the same manner as that variety.

Second Crop of Broad Beans.—When Broad Beans have furnished their first crop it is usual, I believe, to pull up the stalks and throw them on the rubbish-heap. This should, however, not be done; for if they are cut down to about 6 in. from the ground, they will push up three or four stems instead of one, and yield a good second crop.—E. G. O.

Mildewed Peas.—All my Peas after the middle of May are sown in trenches prepared as for Celery. We take out a trench 18 in. or 2 ft. wide, and a good spade deep, and put in about 4 in. of manure, and dig it in. When the Peas show flower, if the weather is dry, we give a good soaking with water, and mulch the ground on both sides of the rows to the distance of 18 in. To have good late Peas it is necessary to water freely, dryness at the root being the main cause of mildew.—J. M.

The Best Late Peas.—Champion of England, Champion of Scotland, and Excelsior Marrow are fine varieties, the two last-named being best left untopped. I find Ne Plus Ultra to be one of the best for the latest crops; it grows vigorously and yields a long succession.—J.

Parsley for Winter.—The now well-known arched wire Pea-guards can be utilised for the protection of Parsley during severe weather if covered with a piece of oiled calico stout enough to throw off wet, which, as well as the covering material, should be kept off the crowns of the plants. To use these guards, however, to the best advantage, the Parsley should be sown in a row close by the side of a path where the covering could be put on and removed with facility. Seed sown in May would produce an abundance of leafage for winter use, and the plants need only be moderately thinned, as it is desirable to have as much foliage beneath the covering as possible. The protectors would, perhaps, not require to be used until after Christmas, and even then only during frosty weather, as whilst it is mild and open the plants will continue to grow. When hard weather sets in the protectors should be placed in a line over the plants, and over them might be laid old sacks, litter, or any dry covering, all of which will admit of easy removal when Parsley is required. Where there is room in Vineries, orchard-houses, and other places, an abundance of Parsley might be obtained if good strong single plants be lifted and put into 6-in. pots in time to be established before it is necessary to gather from them.—A.

THE RANUNCULUS.

The Ranunculus is now little grown in comparison to what was the case a few years back yet it is one of the most beautiful of garden flowers, and it is an excellent plant for the amateur to grow in pots in an unheated greenhouse. The following extracts from a pamphlet on the Ranunculus published a few years since by Mr. Carey Tyso, of Wallingford, Berks, will act as a good guide to those inexperienced in their culture. Mr. Tyso informs us that he has retired from business, but still retains a large collection of Ranunculi out of love for them, and is willing still to assist amateurs in making a collection.

The Ranunculus is a hardy herbaceous perennial, forming small tubers, about 1½ in. deep in the soil, and which goes to rest soon after flowering. There are innumerable varieties of this interesting species, above a thousand of which have received distinctive names, but they are for the most part of an arbitrary character. Large quantities have been annually imported from Holland, and from that source have been derived most of the varieties possessing strong and dark body colours. The Ranunculus is deservedly esteemed for the symmetry of its double blossoms, the brilliancy of its colours, and the great variety it displays. In a well-selected bed may be seen—scarlet, purple, crimson of every shade, yellow, white, and dark (approaching to black), with others which are denominated selfs; and bicoloured sorts with white, yellow, buff, or crimson grounds, beautifully edged, spotted, mottled, shaded, or striped, in infinite variety. The sight of a well-cultivated collection in full bloom presents a scene unequalled in the open parterre, and is well calculated to fill the spectator with admiration and delight.

Soil.—The Ranunculus delights in a rich hazelly loam. If, therefore, the natural soil of the garden be unfavourable, procure the top spit of a pasture, of rather heavy and tenacious but not clayey qualities, with the turf, and lay it in a ridge for some months, and turn it two or three times before use. It is deserving of remark that a pasture abounding with, and luxuriantly sustaining, the British varieties of Ranunculuses, or Buttercups as they are usually called, has also been found congenial to the Asiatic species. Decayed stable and cow manure in equal quantities, constituting together about one-third, added to two-thirds of loam, will when mixed and thoroughly incorporated, form a compost for the main depth of the bed; reserving a portion of loam sufficient to make a top layer of soil 2 in. deep, to which about half the above stated proportions of well-decomposed manure may be added. It is of importance that the tubers should not be placed in contact with fresh manure, as it engenders disease in the roots, and consequent injury to the plants.

Preparation of the Beds.—Having chosen an open but not exposed part of the garden, which will admit of the beds being laid down about east and west, remove the earth 15 in. deep, and from 3 ft. to 3 ft. 4 in. wide, and fill the bed with the prepared compost to within 2 in. of the surface; leave it thus for a month, then add the reserved top soil. These operations are best done in autumn, in order that time may be allowed for the earth to settle. Another method, where the subsoil is light and very porous, may be adpoted. Excavate the bed 15 in. deep, lay in the bottom 3 in. of

DOUBLE RANUNCULUS.

mingled manure and loam, and then saturate it with manure water. Cow manure well stirred in water will answer the purpose. Next add 3 in. more of compost, and saturate that layer; proceed to add two more similar layers, making 1 ft. deep in the whole, and after a week's settling add 3 in. of good healthy pulverised loam with but little manure, in which to plant the tubers. The surface of the beds should be level, and not more than 1 in. higher than the paths, in order that the roots may be kept regularly cool and moist; and as the Ranunculus thrives on a firm bottom, the compost should not be disturbed at the time of planting more than is just needful for that operation. During winter the surface may be pointed up rough, to take the benefit of frosts, but in no case should this be done more than 2 in. deep. The beds may be neatly edged with 1 in. boards painted lead colour, and in case named sorts are planted, should be numbered with white paint to correspond with the numbers entered in the amateur's list. As a bed well constructed at the commencement will admit of several successive plantings with an annual addition of fertilizing materials, it is worthy of the particular care of the cultivator, though the preparation at first may involve some little trouble and expense.

Planting.—The best season for general planting is the last fortnight in February—the plants have not then to contend with the severities of the winter. In some favourable seasons roots may be planted with advantage in October; they will have more time to vegetate and establish themselves, will make stronger plants, and will bloom more vigorously, and about a fortnight earlier than if planted in spring. Considerable hazard, however, attends autumn planting, and it is not recommended, except by way of experiment to those who possess a large stock and can afford to risk a portion. In fine weather towards the close of February, rake your beds perfectly level, and divide them into six longitudinal rows for mixed roots, allowing 4 in. from the outside row to the edge; or for named sorts, mark your rows transversely at distances of 5 in. asunder, and plant six roots in a transverse row. Draw drills with a small hoe 1½ in. deep, and plant the roots with the claws downwards, with pressure to secure them firmly in the soil, so as to be 1½ in. from the crowns to the surface. In order to secure a firm site for the tubers, some growers do not draw drills, but after raking the soil loosely, press the tubers with the thumb and finger to the required depth, and rake on them the surrounding soil. This can be done only in favourable weather, and when the soil is light and friable, and with attention not to break the claws of the tubers. When planting on a small scale, a dibble with a shoulder at the precise depth may be used, but in large quantities it is an inconvenient method, and planting at the bottom of a drill, with moderate pressure and without disturbing the subsoil, is attended with similar advantages to the use of a dibble, and in practice will be found to have some points of preference. If the top soil is light after planting, it may be gently beaten with the back of the spade; this operation, however, must be only done in dry weather, and may be repeated just before the plants come up.

(To be continued.)

Marigolds.—These should now be planted out in rich ground. In the mixed border they look best planted singly, and thus treated they make good bushy specimens. A little manure-water given during the summer greatly assists the production of fine flowers. The double pot Marigold, or, as it is sometimes termed, the Ranunculus Marigold, is a showy plant, the large golden flowers of which are very attractive.

Petunias.—The way to secure an effective bed of Petunias is by pegging the main shoots to the ground, and leaving the side shoots to produce a good surface of foliage, which should be pinched out occasionally to form an even mass. In this way a grand display can be had all the summer. Petunias are well suited for stone vases, beds and baskets, as they hang down over the sides, and form an attractive floral display.—E. A.

Wall Plants.—The beauty which the Wallflower now displays on many old ruins should encourage many to try to develop much more floral beauty in such positions. This is not only practicable, but easy. There is no doubt that with plants of the Wallflower order alone, we could easily convert dreary old ruins, or parts of them, into lovely little gardens. The Arabis and all such plants would thrive on walls, though they would not attain such size as on the level ground. Even the Irises, which at first sight one would never think of putting on walls, thrive thereon when there is a little soil for them to root in, as many may have seen on the Continent on old thatched roofs. There is no difficulty in establishing these lovely flowers.—H.

The Marsh Marigolds (Calthas).—Among the brightest of spring flowers are the various kinds of Marsh Marigold, which are now in full beauty about London. In addition to the common species (C. palustris) and the rarer variety C. radicans, there are the double-flowered forms C. monstrosa, bearing beautiful golden rosettes, and C. minor fl.-pl., a small-growing kind, a free flowerer, and a highly desirable plant. There are also C. leptosepala, the new Californian kind, and C. biflora, and another new kind, named C. purpurascens, a very distinct and handsome sort, which grows about 1 ft. high, has purplish stems, and bears a profusion of bright orange flowers, the outside of the petals being flushed with a purplish tinge. With these desirable qualities, we consider this

Double Marsh Marigold (Caltha palustris fl.-pl.).

last to be an acquisition, and one which is well worth growing.

ARRANGEMENT OF COLOURS IN BEDDING PLANTS.

It is rarely one sees the bedding plants in small gardens arranged so as to produce a harmonious effect of colour; a few hints on the subject may therefore be useful. The first thing to be arranged in a circumscribed display such as is possible in a small garden is a telling outline to the beds. This should be arranged by means of lines of plants presenting a strong contrast of light and dark, and of such colours as will harmonise well with all the other plants used. The best material for this purpose consists of foliaged plants. A distinct line of light colour will always rule, being easily seen; something light should therefore be chosen for outline. It is not well, however, to have a light outline at the very edges of beds; the third or fourth line from the front is preferable, unless in beds under 4 ft. across, when the second line will do.

The best plants for outlining beds are those with light sage-green or silvery-white foliage, as these harmonise with all colours. These should always be used where the beds are separated by gravel walks. When the beds are cut out on Grass turf other colours are as suitable. As a general rule, the darkest and the lightest colours used should form the outer rows, while the middles of beds should be filled to produce an effect of medium depth. The best effect for small beds is got when they are planted with three shades of the same colour, varying in depth, with one, or at most two, shades of contrasting colour, and a neutral—the leading colour occupying at least two-thirds of the space: as, for instance, an edging of dark blue Lobelia, a defining line of Cerastium, two lines of a very dark Lobelia, one of a full blue Lobelia with white eye, and one of a pale blue Lobelia; the centre, Amaranthus melancholicus ruber, kept dwarf. The same kind of arrangement will suit Phlox Drummondi, Verbenas, Pansies, and many other things—keeping always the darker shades near the light defining line. For Geraniums, the same arrangement will suit for larger beds, using the Centaureas as defining lines. A very good arrangement for a large bed would be—1, blue Lobelia; 2, Pyrethrum Golden Feather, and blue Lobelia plant and plant; 3, blue Lobelia; 4, Centaurea ragusina compacta; 5, mixed Petunias; 6, Centaurea ragusina compacta; 7, Perilla nankinensis; 8 and 9, crimson-flowered Geranium; 10, 11, and 12, scarlet Geranium; centre, rose or magenta-flowered Geranium. Intensly bright colours should be used sparingly, and the other shades should lead up to them. A bed of rich crimsons and reds, for instance, leading up to a few points of emphasis of intense scarlet, will have a richer and brighter effect than a whole bed of scarlets. Two flowers of the same shade of colour, but varying in brightness, should never be placed together; the weakest in colour is sure to suffer by the contrast.

Where the beds to be decorated are cut out on Grass turf, scarlet should be used very sparingly. The bright yellow-green of closely shaven turf in sunlight is the worst possible shade of colour to contrast with scarlet; the two colours damage each other, and both lose by the contrast. Nature never makes such mistakes, but produces whites, blues, lilacs, pinks, yellows, and russets, to contrast with the fresh green Grass; and by the time the flowers are in blossom, the blooms and seeds of the Grass furnish a neutral background. All pale colours may be used in bedding on Grass turf with impunity; the outer rows should be dark, but the defining bands may be white, rose, yellow, grey, or pale blue. For a small garden, a good plan would be to make the defining lines of two lines of Centaurea ragusina, and a line of Geranium vesuvius between them throughout, and use no other scarlet. Let all the beds be filled with rose, violet, blue, crimson, maroon, and brown, in various shades. In very large beds the defining lines might be made very broad, and the lightest lines of plants made to form circles or other patterns, bounded by the distinct lines of the defining band, which would really then be two parallel lines.

Where the space to be decorated admits of only a few beds, it is best to arrange a principal bed, with subordinates ones. It is well in such cases to link the beds together by making each supply what the other wants: as, for instance, in the simplest form possible, the centre bed might be too red by itself, consisting of red with a little blue; while the other beds might be too blue, being blue with a little red.

No decorative scheme of colour ever looks well if the colours are not carried through each other. There must be predominating masses of colour and subordinate ones away from them to carry the colour through the other parts of the design. Better, indeed, if this can be arranged in a threefold form, with the principal colours at least—that is, a principal mass, subordinate masses, and smaller patches subordinate to those.

Novel effects in ribbon borders and panel beds might be got at by adopting the old heraldic principle of counter-change—that is, say a red ground and a white figure; the next panel might be a white ground and the same figure in red. A modification of this arrangement, working the same figures throughout the border in varying colours, would afford scope to the ingenuity of the gardener, and might be tried with such plants as present a variety of colours with the same habit throughout—as Verbenas, Portulacas, Phlox Drummondi, &c.

For blues, purples, lilac, and violets—browns, bronzy greens, sage greens, white and bright scarlet, are good contrasts. For all rose and crimson shades—sage green, white, and plants with light yellow or white variegated leaves, are the most suitable. Yellows and oranges are the most difficult colours to manage; they should never appear in the same bed with scarlet, but may be used in defining bands with white, pale lilac, or sage green, where the most of the bed is deep brown crimsons, or purples, or Lobelias which have foliage and flowers dark.

J. D.

The Effect of Bedding-out on Gardening.—The older I grow the more I see that this system, in the way that it is generally carried out and in its consequences, is a lamentable mistake. I have at the present time some 300 ft. of glass frames of one sort or another devoted exclusively to common bedding plants, and we are are still short of room—all plants to fill a garden that my employer and his friends does not see, except for some three weeks in autumn, after making allowance for their absence during the shooting season and visiting. Could I use all this excellent accommodation, or even half of it, for growing early Roses, Violets, and multitudes of sweet, hardy, and other flowers that could be named, I could stock mansion and conservatories with the most *recherché* display, and provide no end of cut flowers, all of which are nearly crushed out. I could increase the supply of vegetables and fruit to a very great extent early in the season when these are scarce and dear, and make it all pay well, and yet without sacrificing the interests of the flower garden or rendering it less attractive, if the "system" was only changed, and I was allowed to remodel the designs of our garden and plant it differently. Gentlemen have not the least idea how much their flower gardens cost them, but their cost forms a large portion of the expenditure. My charge is no exception to the general rule. I am neither better nor worse situated than hundreds of others who have large gardens to manage with a large but still inadequate staff; but it vexes one to see how much good gardening is hindered or lost for the sake of an idea, and that a stupid one.—J. S. W., in *The Garden*.

Standard Pelargoniums.—Where these are desired, few kinds will be found better adapted for the purpose than the double-flowered Ivy-leaved varieties which have been lately introduced. They may be grafted on strong-growing scarlet kinds, seedlings being the best. The stocks should have a clean stem, which is easily obtained by removing the lower leaves until they reach the desired height; then in spring a piece of the kind to be grafted should be taken off with a heel; then with a sharp knife make an incision about 6 in. from the top of the stock, and large enough to admit the scion. Tie tightly with matting, so that the external surfaces come into contact, and there need be little fear of their becoming united. A few leaves should be left at the top of the stock to draw up the sap; but when the graft has taken fairly they may be removed gradually, ultimately cutting the stock off down to the graft. By putting four or five good branchy pieces of any of the Ivy-leaved varieties on to one stock, good plants may soon be obtained; as they grow they naturally assume a drooping habit, and when in flower are very effective. Mr. Kingsbury, of Southampton, grows them successfully in this way, and finds them useful for decorative purposes of many kinds.—S.

AMERICAN COWSLIPS.

(DODECATHEONS.)

THESE Primrose-worts grow in woods in North America, where they are known by the name of Shooting Stars. They are all perennial and perfectly hardy in this country, requiring a cool situation and light loamy soil; the nature of the latter is, however, of but small importance, as they grow as freely in peat or leaf-mould as they do in loam; situation is the principal point in their cultivation. In shady spots on rock-work, or in cool secluded nooks in borders. Dodecatheons will be found to soon establish themselves, and in spring to form lovely and attractive objects. All the species and varieties of this genus grow freely, and soon form large tufts, which require dividing every third or fourth year. The best time for performing this operation is the latter end of January or beginning of February, when the roots are becoming active, taking care not to divide them into too small pieces, as in that case there is danger of losing the plants while in a weakly condition. Dodecatheons may also be easily raised from seed, but this can only be obtained in very favoured situations. The following are all free-flowering excellent kinds.

Giant American Cowslip (D. Jeffrayahum).—This grows from 2 ft. to 2½ ft. in height, and has large dark green leaves, from 9 in. to 12 in. in length, furnished with conspicuous, reddish midribs. Its flowers, which are large and fragrant, and of a reddish-purple colour, are supported on stout stems that grow from 18 in. to 24 in. in height, and sufficiently strong to resist wind. In rich moist loamy soil, this plant grows vigorously in an ordinary border, but it succeeds best when partially shaded from the mid-day sun. It is thoroughly hardy, and one of the best of our border perennials. It is sometimes called D. lancifolium.

Common American Cowslip (D. Meadia).—This, the best known of all American Cowslips, has a beauty peculiarly its own, and whether grown in pots to bloom in a cold frame, in a house, on the rockery, or in the open border, it is alike a gem amongst spring-flowering plants. Clumps of it should be seen in every available situation wherever shade and moisture can be found. Well-grown masses of it may often be found with from ten to twenty stems, each bearing from eight to twelve flowers, and in the case of some varieties of it from twelve to thirty blossoms on a stem. The flowers, which are purplish-coloured and fragrant, are produced in umbels on erect, slender stems, which grow from 12 in. to 15 in. high. Of this there are numbers of pretty and distinct varieties, differing more or less in size of flower, colour, and height of plant. J. P.

The Entire-leaved American Cowslip (Dodecatheon integrifolium). — This, the most lovely of the genus, is one of the best rock plants in cultivation. Its foliage begins to make its appearance in March, and when well grown attains a length of from 4 in. to 5 in., forming deep green rosettes, from the centre of which rise the flower-stems, each bearing from six to twelve Cyclamen-like blossoms; the individual flowers are about 1 in. in length, and in colour a rich purplish-crimson, with a bright orange ring at the orifice of the corolla. As an exhibition plant this, in its way, is unrivalled, and as it grows freely and is perfectly hardy, it should be found in every garden. Strong, well-established plants of this produce abundance of seed, which should be sown immediately it is gathered.

American Cowslip (Dodecatheon Jeffrayanum).

NEARLY one million and a half copies of GARDENING ILLUSTRATED have been issued during the last six months—no doubt by far the largest number of any journal devoted to gardening or rural economy ever published in a similar time.

Rats in Gardens.—For some time past my garden has been infested with rats and mice. I tried several plans to get rid of them with traps, but could never catch one. A friend of mine advised me to get a bloater and split it in two and then across, and insert a little white arsenic and place it near their runs. I did so, and I am happy to say it killed dozens. I have not seen one for weeks. Whether they are all killed or left for another garden I cannot say, but they have left mine as if by magic.—GEO. CAME.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

May 24.—Re-potting variegated Pelargoniums and double and single Petunias for the autumn decoration of the conservatory; sowing Green Curled Endive between rows of Peas; also Curled Parsley, Rampion, and Cauliflower; planting Stocks, Asters, Malope; also spring-sown Cauliflower plants into manured trenches; also Vegetable Marrows and Ridge Cucumbers, affording them the protection of hand-lights or mats by night, and slightly shading them from the sun by day; refilling vases with summer-flowering plants; cleaning herbaceous borders; taking down coverings from fruit trees, and storing them away; tying and staking Dahlias recently planted, to prevent them being blown about by the wind; thinning spring-sown Onions, afterwards hoeing the ground between the rows; sowing Giant White Cos, Ivery's Nonsuch, All the Year Round, and Tom Thumb Lettuces; planting out first batch of Asters; planting out two rows of Celery; earthing up Potatoes and Broad Beans; mulching Raspberries with half-rotten stable manure; manuring and digging up ground for Cabbage, Savoys, and other winter Greens; making up fresh beds for Cucumbers; giving Plum trees on walls a good washing with Quassia-chip water to keep of green fly; tying up Lettuces to blanch.

May 25.—Sowing Bromham Hall and Golden Perfection Melons; also Telegraph Cucumbers; potting on Balsams and Chrysanthemums; looking over Rose walls, nailing in all the shoots that require it, and giving them a good washing to kill green fly; thinning Apricots, Peaches, and Nectarines, where not already done by the frost; earthing up Cauliflower plants; potting Poinsettias, Pinks, scented-leaved Pelargoniums, and Heliotropes; sowing American Red-top Turnips, Maize, Melons, and Victoria, Drumhead and Paris Green and White Cos Lettuces; planting out Tomatoes in warm situations; also Early Cabbage, Lettuce, and Cauliflower plants that were raised from seed sown in the open air; putting in Fuchsia cuttings, to furnish a batch of young flowering plants in autumn; pricking out Celery plants in very rich soil, and keeping them well supplied with water; removing Raspberries that have been grown in pots indoors to a sheltered border; earthing up Jerusalem Artichokes; thinning Carrots and Parsnips; washing Gooseberry trees with alum water to kill caterpillars, and syringing Peach and Nectarine trees with soft-soap and Tobacco water, to clear them of aphides; placing Cinerarias that have ceased flowering, and from which cuttings are required into cold pits.

May 26.—Sowing Autumn Self-protecting Broccoli, to come in for lifting and laying in in cold frames for winter use; getting all bedding plants planted out as fast as the weather will permit; digging out Celery trenches and getting the manure into them; sticking and earthing Peas; potting Chrysanthemums intended for standards into 8-in. pots; also re-potting Heliotropes and Verbenas, and placing them in the greenhouse; sowing another crop of Scarlet Runners, Veitch's Perfection, and Ne Plus Ultra Peas; also Parsley in well-watered drills, and Endive of sorts; planting Stocks, Asters, and Lobelias on Vine borders, and Lettuces among Seakale plants; pricking out Celery on rotten manure slightly covered with soil; preparing Broccoli land for late Peas; raking and otherwise cleaning rough shrubbery borders; cutting out dead Laurels, and removing overhanging boughs of trees and shrubs in pleasure grounds; plunging outdoor pot Roses in a sunny situation; nailing in leading growths of Peaches, Nectarines, and Apricot trees.

May 27.—Sowing Green-curled and Broad-leaved Endive, and Mustard and Cress; potting off Solanums, Celosias, and Lemon-scented Verbenas; pricking out Celery and Cauliflower plants; looking over British Queen and President Strawberries in the open ground, and picking off all the late and weak blossoms, so as to make sure of some fine fruit, and getting them netted; sticking Scarlet Runner Beans; cleaning out all catch-pools, and seeing that all drains are free, so as to be ready for heavy storms should they occur; potting Zinnias and Delphiniums, and placing them out-of-doors; potting off seedling Cinerarias, herbaceous Calceolarias, Amarantus, and Solanums; sowing Mignonette in 6-in. pots for indoor decoration; Red Globe Turnip, Cabbage seed for Coleworts; planting Vegetable Marrows and Ridge Cucumbers on prepared ridges, and re-filling conservatory baskets for the summer. Pricking off Carnation cuttings and young Celery plants. Training creepers on house-sides and on verandah; thinning Malope; dibbling in and watering Spinach seed where blanks have been caused in the rows; watering Celery, Violets, Radishes, Turnips, and all seed-beds; also Dahlias that are planted out; top-dressing Lilium auratum and preparing more places for Vegetable Marrows.

May 28.—Sowing Canadian Wonder French Beans and Radishes; hoeing amongst Gooseberries and Currants, and amongst all growing crops; dusting Turnips early in the morning with lime and soot to keep off the fly; potting off Celosias, Love-lies-bleeding, and Tree Carnation cuttings that are sufficiently rooted; sowing Mustard and Cress on well-watered beds; also Chicory, Syon House French Beans, Spinach, and another lot of Cucumbers; pricking out young Chinese Primulas and main crop of Celery plants; pulling up Wallflowers that have ceased blooming, and manuring and digging the land thus cleared for Stocks; clearing up superfluous bedding plants; hoeing among Strawberry plants and afterwards mulching them with short Grass; placing Primulas in cold frames, and shading them from the direct rays of the sun; nailing the leading shoots of wall fruit trees.

May 29.—Putting in cuttings of double Wallflowers and Alyssum; planting Snow's Winter White and Walcheren Broccoli; looking over Cucumbers and Melons, stopping them, and earthing them up where required; cleaning herbaceous borders; potting Tropæolum canariense into 6-in. pots for the decoration of wire stands, baskets, verandahs, &c.; shifting Balsams and Cockscombs into flowering pots; planting Tomatoes under wall in sunny situations; thinning spring-sown Onions.

Glasshouses.

Clematises, Passion-flowers, Mandevillas, Acacias, and similar plants now making growth freely, must not be allowed to receive

any check from cold draughts or from scanty supplies of water. The young wood should be judiciously thinned at an early stage, rather than severely pruned when further advanced. Tie in the young shoots gracefully and loosely, yet neatly, and never permit them to twine round each other. All free-growing plants must receive liberal waterings, no matter whether they are in pots or in borders; but at the same time let saturation in all cases be avoided. Remove such plants as have done blooming, and fill their places with flowering plants from pits or greenhouses. Plants that are stationary, such as climbers and subjects planted out, unless they are in flower, are greatly benefited by daily syringings; and if green fly, red spider, or other insects present themselves, a little Tobacco water, or water in which flour of sulphur has been mixed, may be efficaciously employed. Washing with a sponge or soft rag and water in which some soft-soap has been dissolved is the most effectual remedy for scale. Pot singly some of the best Lobelias into 4-in. pots, for the decoration of the window or greenhouse. Celosias, Gomphrena globosa, and the Amarantus salicifolius, should be shifted into larger pots than those they now occupy, as they increase in size; keep them in a moderately warm temperature and near the glass. Tulips, Hyacinths, Crocuses, Lily of the Valley, Spiræa japonica, and other plants that were forced into flower early in the season, should now be consigned to some shady border. Apply a mulching of loam and decayed manure in equal proportions to Lilies in pots, and, with the exception of such as are required for early flowering, keep them either out-of-doors or in cool frames. Keep early spring-struck cuttings near the glass in warm houses, shifting them when necessary. Keep Coleuses near the light in an intermediate temperature, and repot and pinch in their shoots as may seem necessary. Place old plants of Campanula pyramidalis out-of-doors, and keep seedlings of the same in a fair growing condition under glass. Keep up a succession of Mignonette in pots; a situation at the base of a wall shaded from the midday sun, and well sheltered, suits well-established plants perfectly; but in the case of seed-pots, and for some time after the young plants have made their appearance, they should be kept under glass.

Flower Garden.

It may be taken for granted that Calceolarias, zonal Pelargoniums, Verbenas, and similar plants have been already planted out; the putting out of more tender varieties may therefore now be proceeded with, such as Lantanas and Heliotropes, together with the various kinds of fine-foliaged or sub-tropical plants. Copious waterings must be given should the dry weather set in, and it is important that this should be done as late in the evening as is practicable. If it be administered in the morning or during the day, a large portion of the moisture supplied must necessarily be lost, as far as the benefit of the plants is concerned. A few plants of each variety of which the various beds consist should be retained in pots, for a time at least, as accidents sometimes occur, and a reserve force of this kind is often found to be useful.

Dahlias should now be planted. Those who set a portion of ground apart for them should on this grow the best prepared plants, which will be those that have been struck from cuttings, these being less liable to get crowded with shoots, and, consequently, produce finer flowers than plants that are obtained by dividing the old roots. Where fine flowers are required, the plants should stand 6 ft. apart every way. The ground can scarcely be made too rich. They should be well watered at the time of planting out, and at once secured by good stakes; but the stems should not be tied too tightly, so that their subsequent expansion may be allowed for. Round the stems for 1 ft. cover the surface 1 in. thick with sharp sand, so as to make it less agreeable for the slugs to travel over. A little Wheat-chaff or hard straw chopped up ½ in. long does much to impede their movements, for they object to travel over anything that sticks to them, and this is the case with these substances even when wet. The best of all for the above purpose, where they can be obtained, are the short clippings of bristles from brushmakers. Wet or dry, these are equally effective, and are too sharp for slugs to attempt to cross. Lime and soot dusted round the plants will stop the movements of slugs whilst dry; but, with moisture, it soon gets crusted, after which they will pass over it, and repeated applications do harm to the plants. The same material can with advantage be used round any other plants molested by slugs.

Hollyhocks. — Spring-propagated plants may now be planted out; they will flower in September and form excellent back rows to Dahlias, and will flower at the same time. The Hollyhock delights in a very rich deep soil, and it is well to put a mixture of fine loam and rotten manure round the roots of the plants. Tie the main stems to the sticks at once, and remove all side shoots with the fingers, in order to have a handsome single spike with large flowers. In planting, attention must be given to a judicious arrangement of colours. If the weather sets in dry the plants must be watered and mulched, to retain moisture.

We have tied up the flowering growths of Delphiniums, Phloxes, Pyrethrums, and all such hardy tall-growing subjects, to suitable sticks; the ground between the rows has been hoed over to destroy weeds. There has been plenty of rain, and it has not been necessary, as yet, to water at the roots, but if dry weather sets in we will do so, and mulch to retain the moisture.

Pansies in beds are in full flower, but to keep up a succession of fine blooms it is necessary to pick all the flowers off a certain portion. Surface-dress the beds, and peg the shoots close to the ground. In ten days the bed (if it had previously shown signs of exhaustion) will be a mass of vigorous growth and full-sized blooms.

Fruit Garden.

Melons.—Plants swelling off their fruit will require careful management as regards watering, as an overdose might induce splitting, whilst a meagre supply would be a sure precursor of red spider, which soon destroys the foliage, and unless this continues good to the last the fruit will be flavourless and insipid. It is therefore a good plan to cover the bed with non-conducting material, which, as a matter of course, prevents the too rapid evaporation of moisture and the necessity for frequent waterings. Elevate the fruit above the foliage in order that it may receive the full benefit derivable from light and air. Succession plants should be encouraged to make fruitful rather than free growth; plenty of air on all favourable occasions, with a medium amount of air moisture, will ensure the former, whilst a close, muggy atmosphere will as certainly ensure the latter, but there will be no fruit. Plant out for the late summer's supply, and make another sowing if the plants cannot be depended on for successional fruiting.

Gooseberries. — If care were taken in the winter to put lime on the soil round the stems of the Gooseberry bushes, as a preventive against caterpillars, little injury from these may be looked for; but in the case of any bushes that were affected last year without this precaution being taken, their reappearance may now be expected. When any can be found they should be destroyed at once, or they will spread and quickly denude the trees of their leaves, spoiling the present crop, and doing serious mischief by weakening the bushes for another season. A dusting of dry powdered lime sprinkled over the affected trees will, if fresh and caustic, destroy many and cause the rest to fall off on the ground, where they must be killed, or they will again crawl upon the trees. This should be done when there is an appearance of some dry weather; for, if wet, the lime will be washed off before it has had any effect. The most certain method for destroying these caterpillars is by using a mixture of white Hellebore (finely ground) and whitening, in proportions of 1 lb. of the former to 4 lb. or 5 lb. of the latter, mixing the whole well up and applying it with an ordinary tin flour-dredger, first wetting the leaves thoroughly with the syringe; the powder thus sticks to the foliage, and the caterpillars, feeding as they do on the edges of the leaves, swallow the compound, and it quickly kills them. In five or six days not a grub will be found alive, when the trees can be well syringed, in order to remove the powder from the fruit and leaves. The only objection to the use of this mixture is that, the Hellebore being poisonous, care must be taken that it is all washed off before the fruit is used.

Kitchen Garden.

Several of what may be termed half-hardy esculents will now demand special attention. Amongst these are Tomatoes, which should be hardened off preparatory to planting out on south borders or against walls at the end of the month. The same may be said of Capsicums and Chilies. Ridge Cucumbers and Vegetable Marrows may be planted out at any time, if they can be afforded the protection of hand-lights; and by way of starting them quickly into growth, a slight bottom-heat is desirable, and easily created by the use of lawn mowings and stable litter; about 2 ft. in depth will be ample, and as the material cools down the roots of the plants will soon establish themselves in it. Seedling plants of Thyme, Basil, Sweet Marjoram, and Sage, should be pricked out under shelter, and may be permanently transplanted in the open ground about the end of the month. All kinds of herbs have suffered severely, so much so, that new plantations of them will be a necessity, and provision should be made accordingly by pricking out a sufficiency of each sort. Sow Lettuces and Radishes once a fortnight; the former should now be sown where the plants are to grow, as transplanting in dry weather entails much labour in watering, and even if this be afforded the plants receive a severe check. Asparagus being now in full bearing, Seakale may be dispensed with; any yet covered should therefore now be exposed, and gaps in the plantation be made good by dibbling in sets made from pieces of roots 3 in. or 4 in. long. Salt is a valuable fertiliser for this esculent, and should be scattered over the surface after the ground is dug. Cut off seed-stems as produced, and thin the crowns to one shoot only.

Planting Celery. — Early-sown Celery should now be put out; if the trenches have been prepared beforehand run the hoe over the surface to destroy any weeds that may be vegetating. Give the plant a good soaking with water before moving them; remove them with as many roots as possible, and as much soil as will adhere to them. In moving Celery plants, there should never be occasion for the now almost obsolete practice of cutting off or shortening a considerable portion of the leaves at planting time; on the contrary, Celery, more than most crops, should never, throughout the whole course of its cultivation, from the time the plants appear above ground until they are fit for use, receive a check more than is inseparable from transplanting them, even when that operation is performed with care. If the trenches have been prepared for double or treble rows, put the plants in 1 ft. apart each way; if for single rows, 9 in. between each plant will be sufficient for ordinary purposes. In making the holes, use a planting trowel, and see that they are large enough to admit the roots without crushing them together; give each row a good watering as soon as planted. Celery costs more in manure and attention to grow well than do most vegetables, and it is worth while to treat it in a way calculated to produce it in good condition.

Leeks.—When indifferently grown, these are little better for the purposes for which they are required than Onions. To obtain the peculiar mild flavour which Leeks possess when large and freely grown, the plants must not be allowed to become stunted by being too close in the seed-bed; to prevent this, thin them out so as to leave them 6-in. apart.

Thinning Onions.—Spring-sown Onions should be thinned before they get too large. Take advantage of the soil being moist after rain to do this. If it be hard and dry, the limited quantity grown by many may be watered, so that the removal of any need not injure those that remain, which often happens when the ground is hard. As to the distance the plants are left apart in thinning, account must be taken of the kinds grown. Large kinds, such as Rocca or Nuneham Park, require double the room necessary for small varieties like Danvers or James's Long Keeping. If it be desired to grow well-developed bulbs of the large-growing kinds, these should be thinned so as to leave them 8 in. or 9 in. apart in the row; the smaller-growing, later-keeping sorts will not require more than half that room. Where some are required for pickling, a portion of the smallest-growing kinds may be left, unless they have come up very thickly, without thinning at all.

THE SHRUBBERY.

BIOTA ELEGANTISSIMA.

One great error that owners of small gardens commit is that of planting trees and shrubs the natural growth of which renders them unsuitable for such situations. Such free growing subjects as Lawson's Cypress, Thuja Lobbi, and gigantea, although very pretty and pleasing to the eye when in a young state, soon become a source of trouble when but a limited space can be assigned to their development; and the owner eventually has the mortification of finding that he must either so mutilate his specimens as to destroy their characteristic features, or remove them altogether. It is a matter for surprise that the slow-growing, neat-habited kinds of Coniferous trees should be so little planted in villa and small gardens generally. The monotonous aspect which the greater part of such gardens present during the winter months is really painful to witness, and is the more inexcusable as the choice forms of dwarf-growing shrubs are, as a rule, much more hardy and less susceptible of injury in severe winters than the masses of Laurels and such like evergreens which often form the sole winter verdure therein. Biota elegantissima, really a gem in its way, well deserves its specific designation; for, although of an upright compact habit, it is by no means devoid of that irregularity of outline which constitutes one great charm of the Conifer family. It has also the merit of changing its aspects at different seasons, the terminal shoots taking on in the autumn a bright cinnamon tinge, the effect of which is both novel and striking during the winter season. On the arrival of the bright spring days, the extremities of the shoots assume a most beautiful shade of yellow, glowing like gold in the sunlight, and presenting a most enlivening appearance. This Biota is indeed an elegant shrub, and worthy of a conspicuous position in the pleasure ground. For small gardens it is a most suitable subject, as, not being of a spreading habit, it does not cover much ground—an important consideration where space is limited. I would strongly recommend this shrub to intending planters, as I am sure that it only requires to be known to be appreciated. In a young state it is well adapted for window and balcony decoration, well-grown specimens in 6-in. and 10-in. pots proving very attractive. Within the last few years it has been extensively propagated in many nurseries, and considerable quantities of it are annually imported from the Continent, thus placing it within the reach of persons possessing only moderate means.

J. Cornhill.

Spring Flowering Town Trees.—These are just now so very beautiful that one could wish they were more plentiful in town gardens and squares. The blooming season of the common Almond is over. The snow-white double-blossomed Cherry is very beautiful, contrasted with the deep rosy flowers and crimson buds of the double-flowered Peach and the vivid scarlet Pyrus (Cydonia) japonica, Forsythia viridissima, rosy and crimson-flowered Ribes, Berberis Darwini, and the showy Amelanchier vulgaris are now very effective, as is also the deliciously-perfumed Magnolia conspicua, while Lilacs and Golden Laburnums already give promise of a magnificent show. In some suburban gardens the Rhododendrons and Ghent Azaleas are glowing masses of the most brilliant colouring always beautiful in fitful sunshine or when bathed in genial showers. One of the freshest and most effective of all spring flowering trees, however, is the Norway Maple (Acer plantanoides), which has been one mass of the most delicate golden-green flowers; and these, at a little distance, so closely resemble the tender young foliage that they might easily be overlooked. The Montpelier Maple (A. monspessulanum) also bears golden-green flowers, and both are invaluable for landscape effects in spring.—W.

Sowing Seeds.—Some correspondents appear troubled with birds which eat their newly-sown seeds. The principal seeds to suffer are Radishes, and the many members of the large Cabbage family. For the purpose of protecting these, simple and most effective guards may be used, one of which I find very useful, represents a bottomless tray, 2 ft. long, 4 ft. wide, 4 in. deep at ends, rising to 7½ in. in middle of sides. It is made of 1-in. deal board, about 7½ in. wide, which costs about one penny per foot; corners dovetailed, and strengthened by corner pieces, the top covered with small-meshed wire-netting, of commonest quality, which is made 2 ft. wide—hence width of frame. When the frame has had three coats of white paint it will last for years. I find two frames this size, and one other 4 ft. square, quite enough for all purposes, as all seeds are not sown at the same time; and when once they are up the frames can be put elsewhere. The seed-bed having been manured, dug, and raked smooth, the frame is pressed over it, leaving an impression of its four sides on the fresh soil, which impression will guide the sower within what limits to sow his seed. The seed having been sown thinly, some fine earth is sifted through a sieve over the whole bed, which is a quicker and in all ways a better plan than raking the seeds in. Then the frame is put over; and neither can birds peck and dust themselves, nor can cats or rabbits scratch. Added to this the sides of the frame give some protection to the seedlings from cold March winds.—W.

Sowing Lawn Seeds.—The ground having been properly prepared, and all stones picked out, take a narrow strip the whole width of the future lawn, and sow the seed on a mild calm day in early April. Then sift a little earth through the sieve (or rake seed in if the lawn be large and time is a consideration), and pat down the surface tolerably solid with a shovel, rendering the soil fairly hard (as in a newly-sown Onion bed), which will prevent the birds getting more than a tithe of the seeds, and in no way injure the seed. Then shift the board, sow another strip, and so on till the whole plot is finished. A slight frost after the seed has sprouted will not do much harm, as I discovered last April when I had ordered to be sown a piece of lawn, which, when just green, encountered a white frost every night for a week and yet was most satisfactory in spite thereof. But if some patches are rather bare, stand on a long wide board, so that the feet may leave no print, sow again and sift earth over seed without any raking, at the same time shifting the board over the whole lawn, and pulling up all Dandelions, Docks, Groundsel, &c., and removing any visible stones also. When the grass is about 4 in. high, stand on the board and cut piece by piece with a sharp hook, and then roll, after which the machine may be used, and a good lawn, by July, ought to be the result—S Piran.

Uses of Surface-stirring.—The necessity of the constant stirring of the soil can hardly be too deeply impressed upon amateur gardeners. It destroys the weeds, which exhale the moisture of the soil, with great rapidity. Ground thus often stirred, and loose, absorbs most of the water of showers, and retains it until much of it settles into the soil below; whereas, much of the water thus falling runs off rapidly from a hard surface. The mellowed surface becomes more thoroughly warmed than a hard soil by the noonday sun, and gives off its warmth more gradually during the night; and the plants are thus surrounded by an atmosphere warmer and of more uniform temperature during the whole twenty-four hours. But the greatest advantage of frequent stirring is that the loosened soil acts as a mulching, arrests the ascent of the moisture by capillary attraction, and keeps the soil in which the roots are acting moist. To secure this benefit of cultivating the land, it ought to be done just as soon as the soil becomes friable, after showers, whether there be any weeds to be eradicated or not. It is a mistake to suppose that the roots of plants are benefited by direct contact with air in the mellowed soil. Air is always injurious to them, and especially so if it be hot and dry. While the plants are growing, their roots should not be exposed to the air, nor should the soil in which they grow be disturbed. The full benefit of cultivation may be secured if it be only deep enough to furnish a few inches of fine and loose soil upon the surface. It is often said that the loosened soil absorbs moisture from the atmosphere, and thus aids the growth of plants; but every one can see that the surface dries much more quickly for being stirred, and it is very clear that what little moisture is thus received in the night is very quickly evaporated, and cannot reach the roots, or the soil in which they work.

GLASSHOUSES AND FRAMES.

GOMPHRENAS, OR GLOBE AMARANTUSES.

These Everlastings succeed well in sitting-rooms, in window gardens, and in other positions indoors; and the red and rose-coloured varieties, well grown and flowered, form chaste materials for the decoration of the dinner-table.

Gomphrenas may be sown at any time from January to July; the most common months for

Gomphrena Hoveyana.

sowing them are March and April. It is, however, a useful practice to make a sowing in May or June, as if plants the result of this sowing be well managed they will be found most useful for enlivening the warm conservatory stove during the two most flowerless months in the year—October and November.

As soon as the plants have become well rooted they should be potted off singly into 3-in. pots. When these are filled with roots shift them into the size in which they are to flower—6-in., or at the most, 8-in. pots; 6-in. is the best size, unless special and forcing culture be adopted. Gomphrenas look best in the form of single specimens and in small pots, and good plants of them for narrow shelves may be grown even in 4-in. pots. For such plants the soil must be light. A compost consisting of equal parts loam and leaf-mould, with a sixth of silver sand added, suits them admirably; 1 in. at least of drainage

Gomphrena globosa.

is needed in a 6-in. pot, and over the drainage a few pieces of rough leaf-mould will be found useful. In potting, care must be taken not to bury any portion of the stems of the plants. In the case of Celosias and Balsams, the practice of burying part of the stem is a handy method of at once securing a more compact habit and at the same time increasing the number and vigour of the roots. But this ruins Gomphrenas, as, sooner or later, it causes them to rot off. If Gomphrenas be grown in proper quarters and skilfully cultivated, they require no training; it is a useful plan, however, to nip off the first blossoms that show themselves on the tips of the stronger shoots, and it may also be desirable at times to stop a few of the stronger branchlets, or any that may get much ahead of the

others. When fully grown and coming into flower they may be placed in the conservatory, in which they will do well if neither over-watered nor placed in a cutting draught. A cool stove, however, or intermediate house suits the Globe Amarantuses best; in tolerably warm quarters the colour is brighter than it otherwise would be, and the plants continue to produce a longer succession of bloom.

The character of the flowers which they bear will be apparent from the annexed illustrations. The colours are bright red, rose, and white. The whole of the flowers of the Gomphrenas are not only ornamental while living, but almost equally showy when dead—and there are few dried flowers more useful and showy with which to form bouquets, along with other Everlastings and dried Grasses. Their colour in comparison with those of most other dried flowers may be said to be fast.

To preserve the flowers in a dry state in good condition for the longest period of time, it is important to cut them with a good length of stalk just before the flowers are fully expanded; the stems will then retain their stiffness and the flowers their form and colour. Slow drying in the shade is the best and surest preparation for perfect keeping afterwards. One sometimes sees heaps of Gomphrenas and other so-called Everlasting flowers lying on shelves and stages to dry like cut Grass in swathe in a hay-field. But those who collect and dry Grasses for ornament adopt a widely different method. There are few better modes of drying Gomphrenas than gathering them in small loose handfuls, with, as I have said, as long stalks as is practicable, and placing them in small empty jars, or pots, setting them in a shady part of the kitchen or other dry room until fully harvested. F.

The Scented Boronia (B. megastigma).

A Powerfully-scented Greenhouse Plant (Boronia megastigma).—Amongst the numerous Australian plants that we now possess for greenhouse decoration, perhaps none has attracted more attention than the subject of the accompanying illustration, not on account of the colour of its blossoms, which are far from showy, but on account of the delicious aromatic perfumed exhaled by them and the graceful habit of the slender branches on which they are produced. In its native habitat it grows about 2 ft. high, and has twiggy, erect branches on which, during spring and early summer, are copiously produced small bell-shaped blossoms of a maroon-purple tint outside and greenish-yellow within. It is a native of King George's Sound and neighbouring districts, and is one of the most desirable greenhouse plants with which we are acquainted. The plant that furnished the spray from which our woodcut was prepared was growing in Messrs. Veitch & Sons' nursery, at Chelsea, who have repeatedly exhibited this Boronia at the various metropolitan shows during the past few years. Though Boronias are what are termed greenhouse plants, they enjoy a little additional warmth during winter and early spring. Their culture is by no means difficult, the soil in which they thrive best being good fibry sandy peat, intermixed with a small portion of light loam: and, being mostly natives of barren, sandy localities, the drainage must be kept in good working order, as stagnant water about their roots is highly detrimental to them.

Speedy Mode of Propagating Tree Carnations.—In a nursery near London, where thousands of these plants are annually struck from pipings, it is an established rule never to prepare the cuttings, or pipings, as they are termed, with a knife. The plan adopted is to take hold of the top of the "Grass" and draw it gently until it breaks, which it will do at one of the joints. Cuttings thus treated are found to root much better than those made with a knife, which, unless very sharp and skilfully used, bruises the tissues and predisposes the cuttings to damp off. This mode of preparing cuttings is worth a trial, not only in the case of Carnations, but also in that of other plants which have distinctly articulated or jointed habit of growth.—B.

Tritonia aurea and its Varieties.—For late summer and autumn greenhouse decoration these plants are equal or superior to many that require a great deal more attention; those who have only seen the common T. aurea can have no idea, fine as that kind is, of the effect produced by an association of the varieties of different colours as they now exist—from white, orange, buff, salmon, to red and crimson. For cultivation in pots they need little different treatment from that usually given to Lilium speciosum, except that, being so much smaller growing, they require proportionately less room, and may be grown in larger numbers together in much smaller pots; but as to soil, potting, treatment from the time they appear above the soil in the spring through the summer up to the blooming period, and also when at rest in winter, the management that suits Lilies will do for them. They must be kept free from slugs and snails, as these pests have such a liking for the leaves that they riddle them completely, a mishap which has a very injurious effect upon the blooming and greatly impairs their appearance.

Gladioli.—These may be had in bloom in quantity in pots up to Christmas, but to come in at that time the planting should be delayed until June. If a small piece of reserve ground can be spared for them, well prepared and made moderately light, they may be lifted and potted when their bloom spikes are formed late in the autumn before sufficient frost has set in to destroy them. Doubtless this very late planting is not conducive to the well-being of the plants, and it might be urged on that account that the practice is not good; but effective varieties are now so cheap that they can be had for 2s. or 3s. a dozen or less; and even if after a single season's treatment such as this they are found useless, which is not likely to be the case, their culture would still be more economical than Hyacinth-growing; for, beautiful and indispensable as Hyacinths are, they are individually much less effective than the Gladiolus.

Genista fragrans.—This is one of the most useful free blooming and fragrant of the genus to which it belongs. Cuttings made of the young flowerless shoots put in now strike readily in a mild hotbed under a bell-glass. After being rooted, which will be in two or three weeks, they should be potted off singly into small pots, and returned to the frame whence they are taken, or placed on a shelf near the glass, where there is a genial temperature, so as to get them again into free growth; afterwards they had better be kept cool and airy. Attention must be given to watering and pinching, the latter requiring to be incessantly done, so as to lay the foundation of a bushy plant—treatment to which they submit more readily than any other plants with which I am acquainted. Before the small pots in which they are placed get full of roots, shift them into others a size larger, which will be sufficient for this year; avoid anything like what is called a liberal shift, as they do not require much root room, the aim being to get bushy little plants in as small pots as is consistent with their well-being. When well established and hardened they may be placed out-of-doors for the summer; but satisfactory results may be attained by keeping them in a cold frame to which air is freely admitted night and day, as thus protected they will be free from heavy drenching rains. They should be housed some time in the autumn before frosts occur, and be placed on a shelf as near the glass as possible; and if kept in a temperature of 40° or 50°, they will keep growing all winter, and by this time they will be throwing up their racemes of blossom, which ought, however, to be nipped off so as to encourage wood growth. In spring they will require another shift, which may be into 4-in., 5-in., or 6-in. pots, according to their size and strength. Treat them through the summer as just recorded, and by the autumn they will be fine bushy little plants, each shoot being laden with golden blossoms. With a little liquid manure given now and then at this stage they will bloom persistently throughout the winter and spring, answering well for almost any purpose for which flowering plants are required; and they can be placed even in draughty places with little or no disadvantage to their well-being. My plants of this Genista are just 2 ft. in diameter, and the same in height from the bottom of the pot, and full of bloom; shoots could be got off to form cuttings, which have to be taken from cut-back plants.—K.

Liquid Manure.—Having of late to find a remedy for sickly evergreens, as well as Rose trees, &c., and upon sandy soil, and knowing that urine is a very powerful manure, containing, as it does, the phosphates and sulphates of soda, potash, and ammonia, but that during the putrifying process much of this is lost by evaporation, I added a little sulphate of iron (copperas) to each gallon to fix the ammonia; it was thus soon ready for use, and its effect upon all weak plants is soon seen. If iron is not required, any other sulphate will suit: say sulphate of soda or magnesia; both are equally cheap.—A Public Analyst.

Cheap Roller for Grass Plots.—For many years I was at a loss for something to substitute for a garden roller (metal and stone being expensive); at last I hit upon one that answers admirably. I got an old iron oil-drum (damaged) at a druggist's—five gallon is a handy size. I took off the iron bands at the ends, and in the centre of each end I made a hole, run an axle of ⅝in. rod iron through, leaving 3 in. to project; had a blacksmith to make a handle of same thickness of iron, and the shape of an ordinary roller, for a trifle. I then filled it through the bung-hole with small stones, gravel, &c., mixed with Portland cement, which, as soon as it set, was fit for use.—Petros.

Beetles and Cockroaches.—These troublesome pests almost invariably congregate and increase rapidly in any heated structure to which they obtain access. They are often a great source of annoyance in forcing houses, where they attack fruit and also the leaves of various plants, especially those of young seedlings. I have lately tried several kinds of pastes and powders, but the most effectual remedy is strychnine mixed with barley meal, to which sufficient grease is added to make it into a paste. This, if set in saucers near their haunts, will be speedily cleared up, and the smallest portion will prove fatal to them.—J. G.

BIRDS IN SUBURBAN GARDENS.

If people would only take the trouble to watch birds closely for themselves, they would not form such wrong estimates of their injurious or beneficial operations in the garden. Although I live within a very short distance of the City, yet my garden, being old-fashioned and surrounded with plenty of trees, and close to two or three large commons, is frequented by a great variety of the feathered tribe; and I could spend many an interesting hour (if I had it to spare) in gaining information on the habits of our garden birds. This year I have been much surprised not to have heard the cuckoo; and I am almost afraid that the ever-increasing rows upon rows of bricks and mortar rapidly closing in around us on all sides has driven this bird further out. The willow-warblers are here in great force. The chiffchaff I heard on Good Friday for the first time, and the pretty song of the willow-wren about a fortnight ago from now (May 10); the reed warbler may also be heard all day long. These three tiny warblers are amongst our most useful birds, and may be seen actively engaged all day long clearing the tender foliage of minute aphides and blight, thus doing much good.

I have also seen a pair of bullfinches at work this morning, picking and devouring the apple buds as fast as they could. These handsome birds are, I am convinced, most injurious to fruit trees, as they may be seen to devour every bud indiscriminately; whereas the titmice, both greater tit, blue, and long-tailed tit, make an inspection of the bud first, and if they find it inhabited by a worm or maggot, will then pick it out. Thus, though both bullfinch and titmouse are devouring buds, the one is in all probability doing good, the other harm.

Swallows and martins are most useful birds, and deserve our protection and encouragement. All day long they are actively engaged in clearing the air of noxious flies and insects. The chimney or barn swallow is with us now, and has been for about a fortnight, but the house martin has not yet put in an appearance in this neighbourhood. It is curious how the swallows and martins seem to disappear again for a time, should the weather be very cold on their arrival. It is my belief that the disappearance is only seeming, for I have often seen numbers of these birds during bitter weather huddled together near mills and in sheltered places where they can find a few flies to subsist on; and as they take very short flights only, and sit together most of the time, they are, of course very little seen. We have a few swifts about during the summer, but I cannot find where they build about here, and I dare say they are only stragglers, as these birds fly very long distances and at enormous altitudes.

I have, as yet, seen nothing of the white-throat garden warbler, or fly catcher, all of which birds we have in summer. The black-cap is here, but the bitter east wind seems to take all the song out of him. He commences operations by clearing off all the Ivy berries he can find on his arrival, and will always first be seen where there is plenty of Ivy. We have plenty of chaffinches; they are well known for their partiality for pulling up seeds of all kinds as they appear above ground, but are also great insect eaters. We have great promise for Apples here. Pears show but little bloom; as is also the case with wall fruit. The dry weather seems to hold the slugs well in check. I suffered greatly from their ravages last year, but this spring I suppose they find it too dry and cold to venture out. In a dry spring, too, the birds do not find so many worms and insects ready to hand as in moist weather. and are therefore driven to hunt out the slugs and snails from their hiding places; and the blackbirds and thrushes will scratch away all the loose surface in their search, so that freshly-made seed beds should be protected from them. To those who possess gardens of moderate size I would say, Study your birds, and you will find much to interest you. Jardinier.

Peat Charcoal, House Slops, &c.—In reply to "Rustic," "Saxon Deyne," and several others in Gardening from April 1 to May 1, I would say there is no better fertiliser than peat charcoal; and soot and lime are nowhere as a preventive against insects where peat charcoal can be applied. Having used it for six years, I profess to know a little about it, as I not only use it in the garden, but in the farm to every crop, either alone or mixed with other manures. I have no wireworms at my Turnips or grey slugs at my Wheat, &c., and have very few diseased Potatoes where I use charcoal. Charcoal put into the tub of house slops prevents any bad smell. "Rustic" was highly favoured to get his charcoal for nothing; I pay 3s. per bag for mine.—T.

House and Window Gardening.

Mimuluses.—Improved strains of these have very large and finely marked flowers, and in most cases these are associated with a bold vigorous habit. Plants in pots grow and flower well in a half shady window, provided there is no fire in the room. If they be kept well supplied with water and occasionally syringed, they will keep effective for a considerable length of time. A pan of seedlings will give a succession of plants that will last all through the summer.

The Rock Strawberry as a Window Plant.—This little Strawberry, the botanical name of which is Fragaria indica, is an interesting little trailing plant, very suitable for growing in small wire baskets in windows. It bears an abundance of red berries, which, however, possess no flavour to warrant them being grown for eating. They are, nevertheless, very pretty in summer succeeding, the small yellow flowers, which are produced in abundance.

Rock Strawberry as a Basket Plant.

The plant may be easily increased by the runners which are plentifully produced. It will grow in any soil.

Annuals for Windows.—As a general rule the best soil for annuals grown in pots is a rich vegetable mould; about equal parts of good loam and leaf-soil will suit the greater part of them. It is necessary to be very watchful in regard to watering them, as, if allowed to become very dry when young, many annuals turn somewhat woody in character, or in other words get stunted; and when once they are allowed to get into that state, it is useless to attempt to put much further growth into them. Annuals in pots offer some advantages over permanent plants, for window decoration, as one does not regret throwing them away when done with, so quickly can they be replaced.—R.

Window Plants.—Windows filled with Scarlet Pelargoniums, Fuchsias, Saxifrages, and similar plants, always convey a sense of refreshing coolness to a room during hot weather, and it is indeed gratifying to witness the progress which this branch of cultivation has made of late years, and its beautifying effect upon both town and country dwellings. A plant should never be put into a dirty pot; on the contrary, all pots should be thoroughly washed, and not used until they are quite dry; otherwise in repotting, the ball sticks and the roots get mutilated. In the matter of drainage, the greatest care is necessary, as it is one of the chief points with respect to successful cultivation; and again, in watering window plants much care is likewise necessary, particularly in winter. When they are growing freely, however, they must be well supplied with water. On the other hand, to deluge them with water is equally a mistake. Enough should be given to throughly penetrate the soil, and no more.

ANSWERS TO QUERIES.

2141.—**Crown Imperials.**—Having regard to the fact that in suitable soil the Crown Imperial is usually as robust and blooms as freely as the hardier Lilies, it is just possible that bulbs heavily dressed with stable manure have been overdone with manure, and the excess of nutriment has induced rot. The finest blooms of these we have seen have come from bulbs left in the borders for many years, and the soil about them forked and manured in the ordinary way. On the other hand, it is an unfortunate fact that vast numbers of bulbous roots imported for sale seem to be bought only to die a lingering death—the check received in the importation proving a cause of decay that Nature cannot overcome. This is particularly the case with Liliums and Gladiolus bulbs. In any case, it were well to avoid all coarse stimulating manures.—D.

2136.—**Points of Good Pansies.**—Some information on this matter has been given at page 118, but in reference to seedling Pansies it is worthy of remark that first-class show flowers from these are so few and rare, even from the best strains, that, except where Pansies are grown as a speciality, it would be well to select the finest and most attractive flowers to stage if wanted for show. Good blooms of all kinds should be flat, well rounded, the edges of the petals even and smooth, and the entire flower stout and of good substance. Then, if of the fancy kind, work for size and fine heavy blotches, with rich deep colours. If of the old English or show strains, let the self flowers be pure and of the same hue throughout, excepting the blotch, which must be solid and black. The belted flowers should have the markings clearly defined, without any lines or streaks running out into the ground of white or yellow.—D.

2135.—**Stands for Exhibiting.**—Stands for the exhibition of cut flowers should be regulated in size chiefly by the size of the blooms to be shown. Thus Dahlias, Asters, and African Marigolds need larger stands than French Marigolds or Pansies; but in many exhibitions it is a rule to make the stands for all such flowers of the same size and height, to secure uniformity. For all practical purposes a useful size for standing twelve blooms of any of the above-named flowers may be 17 in. by 13 in., the holes for the blooms running crosswise in four threes This will give to each bloom a diameter space of about 4 in.; the proportions also are good. The depth of the stands must depend upon the way in which they are made. The kinds most in favour with our trade exhibitors of Pansies, Asters, &c., are made in the shape of shallow flat boxes about 2½ in. in depth, and regulated in size if for twelve blooms or for twenty-four blooms—a box for the latter number having six rows crosswise, seventy-four blooms each. These are about 16 in. wide, and 24 in. in length. These boxes are made of ½-in. deal, and all around the inside edge is a groove into which is made to fit a block-tin or zinc cover, having in it the required number of holes; and to these, on the under side, are soldered small tin tubes, which hold water. When this cover is placed into the box, and the whole painted green, a perfect stand is formed. Then lids, about 2 in. high, are made to drop over the stands, and are fastened with hooks. So secured, and kept on their bottoms, these stands may be carried with the blooms a long journey in safety. The boxes should be made quite flat, and when staged should be tilted behind with small wedges of wood, which the exhibitor should carry with him.—A. D.

2122.—**Origin of the Polyanthus.**—No less an authority than Mr. James Niven is of opinion that the Polyanthus is the progeny of the wild Cowslip (Primula veris), and florists invariably class all the section of garden Polyanthus under this botanical heading. It is a fact that the wild Primrose (Primula vulgaris) will, if fertilised with pollen of the Polyanthus tribe, produce a large proportion of Polyanthus flowers; but in its wild state, left to the operation of Nature, it never changes, and therefore there is little reason to suppose that it is the progenitor of the Polyanthus. In like way the Cowslip in a natural state does not change, but remains the Cowslip for ever. I very much incline to the opinion that all our garden forms of Polyanthus and Primrose have

come to us from the Continent, probably from Holland, and are the product of that incursion of the Dutch gardeners who came in with William of Orange and Queen Anne. How these originated the garden Polyanthus, and especially the beautiful gold-laced kinds, is one of the things history will fail to tell. In the same way the origin of the beautiful double Primroses is lost in oblivion; but it is noteworthy that the last member of this family, the new Platypetala plena, or Arthur Dumoulin, was raised in Belgium; and the charming bright fancy and duplex forms of Polyanthus seem to have originated there also. On the other hand, we see seedling progeny, of the very best forms especially, going back so far as to be even more worthless than the Cowslip; and this tendency to reversion shows a remote but exceedingly indifferent parentage. Whatever changes have been wrought in the Primrose and Polyanthus have have been the result of garden hybridisation. Nature fertilises, and so perpetuates her progeny, but does not hybridise; if she did, all original species would have disappeared long since.—A. D.

2147.—**Cowslips from Seed.**—Cowslips, under all conditions of place and growth, show flowers having both pin and thrum eyes. Pin-eyes are found in those where the pistil or stigma projects above the pollen, bearing anthers, the latter not being visible, but are far down the tube of the flower. Thrum-eyed flowers have the anthers well up in the throat, and the style or pistil is beneath. It is held by Darwin and other naturalists that in this section of floral vegetation the best progeny are obtained by inter-crossing the thrum-eyed blooms on to the pin-eyed flowers; and, as a matter of fact, florists find the best results from a cross of this nature. There is no assumption that these flowers are male and female, or sexual in any way; both are capable of self-fertilisation, and both produce seed. The real inference is that the united strength of two distinct plants, as found in the pollen of one and the stigma of the other, serve to produce the most robust progeny; and without doubt such seed is the most fertile. Probably it would be a good plan to lift from the wood a couple of plants of the wild Cowslip, one pin-eyed and one thrum-eyed, plant them in the garden, and, by means of a small camel's-hair brush, cross-fertilise as above described, and without doubt the seed will be fertile and produce good plants. Seed may be sown in a cool place as soon as well ripened, or in pans in a frame or cool house in the spring.—A. D.

2088.—**Treatment of Daphnes.**—Keep the plants in a greenhouse or frame until they have completed their growth. If the pots are very full of roots, the plants should be shifted into the next sized pot. Should, however, the ball of soil not be thoroughly filled with fibres, merely examine the drainage, and if defective, place the plant in a fresh clean pot of the same size. Many failures occur in the culture of this very fragrant greenhouse shrub through over-potting and defective drainage. A plant should never be shifted until the necessity for such an operation is seen to be imperative, as even root-bound specimens can be maintained in health and vigour by means of frequent waterings with soot-water during the growing season, or a top-dressing of some concentrated manure may be administered just as the plants start into growth. The best time for shifting is just as the growth commences—the soil to consist of equal parts of loam and fibrous peat, to be pressed in firmly round the old ball. Water carefully until the plants are fairly in growth, when a more free use of the watering-pot may be made. As soon as growth is completed, place the plants in the open air in a sheltered situation until the advent of cold, inclement weather. There is one item in the culture of this plant that must not be forgotten—*i. e.*, that it is extremely impatient of the knife: never cut away portions of the specimen, as the parts thus operated on often refuse to start again into growth.—J. C., *Byfleet.*

2139.—**Pot Roses to Bloom in August.**—The Hybrid Perpetual Roses will, if well attended to, flower twice in the season. The second time, however, the blooms will not be so fine, neither will they be produced in such abundance. As soon as the flowers fade, place the plants in a sheltered position in the open air until they have become thoroughly hardened. Then select a sunny situation and plunge the pots quite to the rims in the soil, leaving plenty of space between the plants, at the same time mulching them with some rich manure. In dry weather water freely, putting a pinch of soot in each can of water, and syringe the foliage every evening, or on hot, dry days. Keep a sharp look-out for mildew, dusting immediately with sulphur. By the middle of August a great crop of flowers should be formed, when if the weather is at all inclement, the plants may be placed where they can receive some protection. A cold frame is the best place, merely putting on the lights in stormy weather; or a framework may be made so that a piece of canvas can be drawn over when required.—J.

2081.—**Cinerarias after Flowering.**—In the case of unnamed seedlings, the best way is to save some seed from the best flowers and throw the old plants away. Free young seedling plants are as a rule preferable to the old stools, and, if grown along quickly, attain sufficiently large dimensions for decorative purposes generally. Named kinds should have the flower-stem cut off as soon as the flowers are faded, and the plants should be placed in a frame with a north aspect. Attend carefully to the watering, and sprinkle overhead in dry weather. By the month of August the offshoots from the crown may be taken off with a little piece of root attached. These should be potted separately in small pots, placed in a cool frame, kept close and watered carefully until they have struck root. Some of the pieces may not have roots, but if cut off with a sharp knife close to the stem they will soon emit some. As soon as it is perceived that the plants are making progress, give plenty of air by tilting the lights continually, withdrawing them completely in mild, overcast days and on still nights. Shift on as soon as the pots become filled with roots, pursuing the same treatment until it is time to place them in their winter quarters.—J. C. B.

2137.—**Roses on Seedling Briers.**—The Brier seed should be sown in March in deeply-stirred, well-manured ground. Strike out a bed some 4 ft. in width, make the soil level, sow the seed thereon, and cover with 1 in. of fine soil. Choose a fine dry day for sowing, and beat the surface down quite firm with a spade. During the growing season keep the young plants quite free from weeds, and water copiously should the state of the weather necessitate so doing. As soon as the early autumn days arrive, prepare a piece of ground in the same manner as already recommended, and about the latter end of September plant the young plants therein, in lines about 18 in. apart, placing the Briers some 6 in. from each other. If mulched with decayed manure, a strong healthy growth will be made, rendering them in good condition for budding when the proper season for this operation arrives. Bud in the ordinary manner, inserting the bud as near the ground as possible. The following season mulch well again with strong manure and water where required.—B.

2076.—**Annuals and Perennials for Rose Beds.**—Any of the hardy annuals, such as Nemophila, Clarkia, Collinsia, Leptosiphon, and Godetia, may be sown where they are to bloom in March and April. These will come into flower at an early period of the summer, to be succeeded by scarlet Linum, Mignonette, dwarf Tropæolums, and Convolvulus minor, seed of which may be sown from now onwards. The Honesty is a fine early-blooming subject, suitable for the centre of a bed. Seed sown now will furnish fine blooming plants next spring. Wallflowers may also be sown at the present time. In the way of hardy perennials, nothing is calculated to give more satisfaction than the many beautiful varieties of Viola cornuta and bedding Pansies. Seed of them may be sown now in a nice friable piece of ground, and the seedlings may be planted out when large enough to handle. Being of dwarf habit, they are suitable for placing in the front line, and if liberally dressed annually with good rotten manure and copiously watered in hot weather, will flower continuously throughout the summer. Lilies, such as the Tiger, Martagon, orange, and the old white, thrive, as a rule, much better when planted amongst other things. Their presence does not prevent carpeting the surface around them with other plants; on the contrary, they appear to thrive better when the scorching rays of the sun are thus hindered from playing upon the bare surface soil around them. They need, however, a good mulching to be applied in the autumn.—C.

2131.—**Plants for Winter Flowering.** One of the finest of winter-blooming plants is the Chinese Primula, of which many beautiful varieties now exist. A dozen or so plants of the white and red kinds, procured now and grown along, will alone suffice to render a greenhouse gay and cheerful throughout the winter. Then, again, there is the Cyclamen, undoubtedly the most useful of winter-flowering subjects, inasmuch as the same plants will last in bloom from October till May. Strong young plants potted now in a free light sandy soil will, if carefully attended to throughout the summer, produce a profusion of red, white, or pink flowers, according to the variety, during the dullest months of the year. Cineraria seed may be sown now; the plants, however, should be grown in a cool place, a frame on the north side of a wall being the best situation for them. Tropæolum Lobbi is an excellent winter flowering plant. Grow it on in the open air during the summer, picking off all bloom, stopping the shoots and tying them to a trellis. Allow the buds to form after the beginning of October. Sow Mignonette in pots in the middle of September: thin out to four plants in a pot. Grow along young Heliotropes, stopping them till the middle of September, then allowing them to go to bloom. Cuphea platycentra and Ageratum Cannell's Dwarf may also be managed in the same manner.—J. B.

2140.—**Cold Greenhouse.**—When Moss or green mould forms on the surface of the pots, it is a sign that the air in the structure is very stagnant, or that the soil in the pots is maintained in a too saturated condition. The very fact of the surface soil being thus covered would be enough to prevent the plants from thriving. Go over each plant and clean the Moss off, then allow each plant to quite dry out before watering again. A cold greenhouse should be provided with ventilation, both at the top and at the bottom, so that a free circulation of air can be maintained in favourable weather. If the structure is a north one, the plants will need to be frequently overlooked and cleaned, as where the sun comes so little, the air is more moist. If only ordinary care is exercised in the watering, no green mould of any kind should form from now on. Overhaul the plants, carefully examining the drainage. Where this appears at all defective, or earth has becomed mingled with it, take a clean pot of the same size (unless the pot is quite full of root, when it may be shifted), drain it well, and place the plant in it. This operation is often quite sufficient to restore a debilitated specimen to health.—J. Cornhill.

2083.—**Stand for Exhibition Flowers.**—Stands for exhibiting cut flowers are made in various ways. The simplest method is to make them much in the form of writing-desks, that is to say, gradually sloping towards the front. The dimensions have to be regulated by the nature of the subjects to be shown; thus a stand for Roses must necessarily be of larger proportions than that required for Pansies. The front board may be about 6 in. wide, and that forming the back portion should be about 10 in. in width. A case so constructed as to just enclose the stand without touching the blooms enables the exhibitor to arrange his blooms at home, and transport them in safety.—B.

2078.—**Non-flowering English Plants in India.**—I should imagine that in the case of the Wallflower the wood fails to become sufficiently hard and matured to admit of its forming flower-heads. The Wallflower never flowers so freely as when growing in rather poor soil, and subjected to the full force of the sun's rays during the growing season. It is a well-known fact that when treated too liberally, especially when the summer proves exceptionally moist, the Wallflower, even in its native country, is apt to run away too much to leaf, failing to produce bloom as it should do. I would therefore counsel your correspondent to imitate, as far as may be practicable, the natural conditions in which the plant thrives in a wild state. I would plant some on a raised mound in almost pure sand, and some I would keep in pots in a poor compost; at the same time I would ward off in some manner the heavy rains in the wet

season, thereby keeping the roots in a somewhat dry state, which treatment I am inclined to believe will have the effect of checking that rank succulent growth which appears to be the main cause of the plants not flowering. It is more difficult to assign a cause for the Sweet William not blooming, as this plant likes liberal culture; but I am inclined to think that if the plants were thoroughly established in an open position, not manuring them after the first year, they would in course of time flower. After the first year or so they would probably make a free succulent growth and would perhaps go to flower. The better plan would be to try some in pots and treat them in the manner recommended for Wallflowers, keeping them in a root-bound condition.—J. C., *Byfleet*.

2183.—**Gloire de Dijon Failing.**—Roses will suffer from mildew and curl if the roots are dry, and also from the opposite cause—excess of moisture. The one referred to is no doubt suffering from the first cause, and wanting water. Roses are gross feeders and will take up plenty of moisture, and during the blooming and growing season should have either manure-water or a thick top-dressing of short horse manure, the nutriment from which will wash into the soil with the waterings and feed the plants. Outer applications of sulphur may be of great service, but the great aim should be to prevent the disease rather than seek for its cure. —D.

2206.—**Outdoor Cultivation of Tomatoes.**—I have had good crops of the Currant Tomato in the open air; but, except for ornamental purposes, it is not so valuable as Criterion, or some of the large smooth kinds. Tomatoes should have a warm sunny aspect. The land should be in good condition, and be firmly adjusted round the roots of the plants. Plant against a wall, or fence if such can be had, setting the plants 15 in. apart, and training them to a single stem. If no wall or fence be available, then plant in the warmest spot at hand; a warm sunny bank sloping considerably to the sun would be an excellent situation. Plant in rows 2½ ft. apart, and 15 in. from plant to plant in the rows. Place a stake to each plant at once as soon as planted, and leave a little basin in the soil round the stem in case it should be necessary to water, which it most likely will. Keep all buds or shoots pinched or rubbed off from the main stems as soon as they show. Train up the leader regularly as it requires support. As soon as there is a cluster of flowers produced, pinch the leader one leaf beyond it, but take on the young shoot which breaks away until that also produces a cluster of flowers, when the leader should be pinched again, and so on until a good crop has been set, and the top of the stake has been reached. The latter should be strong enough to carry a good weight of fruit, and be about 1 yard high out of the ground. In hot seasons keep the plants well supplied with water. Mulching will tend to reduce the necessity for watering. —E. H.

2178.—**Growing Cucumbers.**—In a house of the size named, the best way to arrange the wires would be to fix permanently a stout iron rod at both ends of the house, about 16 in. from the glass, and strain wires from end to end horizontally, and to these tie the Cucumbers with soft Raffia or matting. Almost any kind of wire will do provided it be strong enough to bear the strain. Copper wire about the thickness of stout bell-wire will do; and it might be taken down when the Cucumber season was over and be stored away till the following year. The wires should be about 1 ft. apart; and should it be necessary to support a heavy crop of fruit they could be looped in the centre to the rafters. I am supposing the Cucumbers will be a temporary crop, and that at other seasons the wires would be in the way.—E. H.

2173.—**Road Sweepings as Manure.** —Road sweepings are excellent for all kinds of vegetables. For Celery, have it laid in a heap for a few weeks, and empty the house slops over it, turning it over once or twice. The best way to apply it is to dig it in; it also does well for mulching over the roots of all crops that require such assistance. It is not so rich as the manure from stall-fed cattle, as it is altogether minus the urine, which is the most valuable constituent. Use plenty of it, and the result will be satisfactory.—E. H.

2177.—**Pennyroyal.**—By the autumn Pennyroyal has become so dense and thick that the moisture lodges in it, and the wet and frost together often kill it. If a few roots are taken up in September, pulled to pieces and dibbled in thinly anywhere, but preferably in a dry border, such plants will sustain no injury. In very unfavourable situations some may be planted in a box, and be wintered in a frame or on the greenhouse shelf.—E. H.

2144.—**Rock Plants under Trees.**—We fear that little besides Ferns would thrive satisfactorily in the dense shade of a Beech tree. Many plants grow more freely in partial shade than when exposed to the full light, but the foliage of the Beech is so thick that flowering plants cannot live under it. You might try London Pride, the Wandering Jew Saxifrage, and the various kinds of Periwinkles. The situation is, however, suitable for most kinds of hardy Ferns, and we think that the best plan would be to devote it to their culture.—J. C. B.

2205.—**Diseased Peaches.**—This, as the trees are stated to be healthy, seems a difficult case to understand. Has there been any leaf-mould used in the border, and is the soil free from fungus? I should say either the wood was badly ripened, or that fungus had found a lodgment in the border, and that the trees were suffering from that cause and drought combined. When a border becomes infested with fungus, water seems to make no impression; it escapes away down a crack, or runs off the surface without moistening the disease-infecting portion where the white threads of spawn poison the soil and kills the roots. At any rate there must be a cause, and I should expect to find it in badly ripened wood, or fungus in the soil, or from a combination of the two causes.—H.

2165.—**Saving Wallflower Seeds.**—If the double varieties of Wallflowers mentioned are the old yellow or red perennial kinds, they will neither produce seed, or aid in the production of seed on other kinds. They are without fertile organs, and of course have no pollen. If the kinds alluded to, however, are of the German double and semi-double strains, then they may be trusted to produce seed that will again produce double flowers. None of the English garden single Wallflowers ever produce double or even semi-double kinds, and it is doubtful whether they would cross with the German doubles for any good purpose. A double Wallflower is usually a good flower spoiled. The fine red and yellow singles are both beautiful and rich in glorious perfume.

2184.—**Striking Cuttings of India-rubber Plants.**—Cuttings of the India-rubber plant when taken off should have all the leaves left on except those at the base, and should be allowed to lie, and dry the cut somewhat before insertion into the cutting bed or pit. The soil should be of fine loam, and a large admixture of sharp silver sand. A gentle bottom-heat is desirable, but at this time of the year the cuttings may root without, but of course less speedily. Keep the soil moist, but not too wet. A covering of a hand-light or a big bell-glass is desirable, as the leaves are then less affected by the surrounding dry atmosphere. —D.

2028.—**Celery Seed for Rheumatism.** —Celery syrup is said to be extensively used amongst German medical men with good results. The following recipe is translated from the German:—"Put 1 oz. of Celery seed into an earthenware jar with 1 pint of water; place in a moderate warm oven till reduced to ½ pint; strain it; take 1 lb. of white sugar, and put it into a clean saucepan with a cup of water; place on the fire till it boils, skim, and remove; add the decoction of Celery seed. A teaspoonful once a day." Perhaps this will suit "T. H." —R. K.

2181.—**Ants and Fruit Trees.**—Is "C. J. B." quite sure the destruction of his trees is due to black ants? I ask the question because some time ago my attention was called to what was thought to be a similar case, but which I found on investigation to be the work of the black aphides. The ants were present, but as an effect rather than a cause. The black aphides can be destroyed by dusting with Tobacco-powder; washing with a solution of Gishurst compound—3 oz. to the gallon. 2 oz. of soft soap and one quart of Tobacco-liquor to the gallon of water makes a good wash. Whichever is employed, perseverance in its use is necessary so long as a living insect remains. Traps and poison, as well as deterrents, may be employed for destroying the ants. They dislike tar, and a piece of rope dipped in tar and tied round the stem of the tree will prevent their ascending. A little may be smeared in the places where they travel; their nest should be found and destroyed by pouring in boiling water. To kill them, boil an ounce of powdered arsenic for half-an-hour in a quart of water, and thicken with sugar to form a syrup. Place it in their runs on shallow vessels, such as cheese plates, oyster shells, &c.; or any fragments of crockery will do. They may be trapped by laying bits of sponge about smeared with treacle. The pieces of sponge should be gathered with the ants on them, and thrown into boiling water.—E. H.

2202.—**Uses of a Hotbed Frame.**—A great many things may be obtained from such a frame, but, of course, not without labour. Rhubarb may be forced early, and so may Sea-kale; but when the produce has been gathered the roots should be taken out. Asparagus will force very well in such a frame. An early crop of French Beans may be had by planting in March; also Strawberries—either in pots, or the plants may be carefully lifted from the open ground with balls of earth, planted in the frame, and brought on gently at first. Tomatoes may be planted along the front of the frame inside, and trained over stakes or any kind of rough trellis, thinning and stopping the growths as required. In all cases success will depend upon the intelligence and perseverance brought to bear.—E.

2074.—**Aponogeton distachyon not Flowering.**—We should imagine that the plant in question does not get enough light and air. This water plant is of a hardy nature, and delights in full exposure to sun and air during the summer months. When accorded these conditions, it flowers freely.—C.

1965.—**Single White Camellias.**—The single white Camellia is not often seen in cultivation. It might be procured at some of the large London nurseries. It requires the same treatment as other kinds.—C.

2087.—**Raising Seeds.**—Bottom-heat is not absolutely needful for raising Cobæa scandens. The seed will come up in an ordinary greenhouse. Seedlings will bloom the same season, but the seed must be sown early in the year in a warm house, so that good, free, strong plants are ready for planting out in a cool greenhouse by the beginning of May. We suppose you refer to a cool house species of Loasa, which demands the same treatment.—C.

2032.—**Soil for Rhododendrons.**—Rhododendrons would thrive in soil of an alluvial nature, but they will do much better if a good portion of leaf-mould or some sound loam be mixed with it. The growth made in soil destitute of organic matter is generally rather weak, and the foliage does not attain such handsome proportions.—J. C.

2172.—**Watering Early Potatoes.**—Potatoes in which curl is seen in the leaves are probably suffering from drought, especially as the weather has been dry for so long. A thorough soaking of water would do good, but it should be given in the morning, so that the foliage might dry again before night, lest white frosts should injure it. A sprinkling of guano or other artificial manure, given before the watering, would have a beneficial result.—A. D.

2198.—**The Feather Grass** (Stipa pennata).—Seed of Stipa pennata that does not grow is probably old and worthless. Owing to the wet summer of last year there is a great scarcity of new seeds of many plants, and no doubt Grasses suffered amongst other things. Try and get fresh seed elsewhere, and sow again.—D.

2194.—**The Best Pansies.**—The following are six good English or show Pansies:—Elizabeth Thompson, white self; Beacon, dark self; Mrs. Horseburgh, white self; Leah, white ground; and Robert Burns and Mrs. Russell, yellow ground. Six good fancies are Miss Melville, Sir W. Scott, Mrs. R. B. Matthews, Mrs. Grainger, Von Moltke, and Marigold. What kinds are best must be more a matter of opinion than one of fact.—A. D.

2201.—**Propagating Sweet-scented Verbenas.**—The sweet-scented Verbena (Aloysia citriodora) or the Lemon plant, may be propagated from cuttings taken from the old wood in March, or the young shoots when firm in August; in either case, cover with a bell-glass and shade from bright sunshine. Let the soil be a mixture of loam, leaf soil, and sharp sand, and sprinkled well before the cuttings are inserted.—A. D.

2171.—**Blight on Apple Trees.**—Anoint all the patches of blight with paraffin oil, rubbing it in with a painter's brush, but keep it away from the young growth. Use the garden engine freely. I have no doubt this pest might be eradicated with a good supply of cold, clean water, applied forcibly through the garden engine once or twice a week in summer.—E. H.

2187.—**Growing the Bush Marrow.**—Train the main stem to a stout stake, and cut the fruit when large enough for use. Lay a mulching of half-decayed manure round the stem when the plant has made some growth, and give plenty of water in dry weather. There is no difficulty in their culture.—E.

2189.—**Manuring Parsnips, &c.**—Parsnips and Carrots are best grown without manure at planting, as it

tends to make the roots forked and deformed. If the land is very poor, liquid manure, after they are hoed and thinned out, will be beneficial; and also to Turnips. The latter may have a top-dressing of super-phosphate, about 5 lb. to the square rod.

2167.—**Grafting Plums on Apricot Stocks.**—If the roots of the stock on which the Apricot was originally budded are healthy, the top of the latter might be cut away down to the original Plum stock, and Plum grafts inserted therein. Coe's Golden Drop, and Transparent Gage are good varieties. The result will be successful or not, according to the state of the roots. It is too late to do it this season.—E. H.

2188.—**Wireworm in Gardens.**—Catch and kill them is the best advice I can offer; and to this end place pieces of Potatoes and Carrots just beneath the surface in various parts of the garden and examine them daily. This is a slow but a sure remedy, and the cheapest and best I know. Persevere.—E. H.

2145.—**Yellow Spots on Geranium Leaves.**—Allow the plant to dry out, then shake away as much of the old soil as is possible. Replace in a fresh pot of the same size, using some nice sandy soil. Place in a light well-ventilated situation, and water carefully. The roots are in a bad state; hence the unhealthy condition of the foliage.—B.

2151.—**Jasmines not Flowering.**—If the plant in question is the Jasminum fruticans or J. humile, shift it into a larger pot, and place it in a sheltered situation in the open air until settled warm weather, when it should be placed in a warm sunny position. Water freely, giving a little liquid manure. It should bloom during the summer or early autumn months.—J. C.

2176.—**Soot-water in Vinery.**—Soot-water will not cause rust on Grapes or otherwise injure them when sprinkled on the borders, &c., and the practice may be safely continued so long as moisture is required. Avoid wetting the pipes when they are hot.—E.

2174.—**Nitrate of Soda for Plants.**—Nitrate of soda is rich in nitrogen, and may be usefully given to growing crops at the rate of 1½ lb. to 2 lb. per square rod; it should be sprinkled between the rows of plants in spring. It is all used up in one season: nothing is left for a following crop. It is a valuable stimulant for the encouragement of rapid growth.—H.

2084.—**Gnats Stinging.**—Tobacco is one of the best preventives. A small piece of Caxillar bark burned is also a good thing.—R. K.

2208.—**Pelargoniums not Flowering.**—I have struck some Pelargoniums; they are very healthy plants, but have very few heads of bloom. Why?—K. C. [Place them in a sunny position, and they will flower more freely by-and-bye.]

2209.—**Questions on Vines.**—Is turfing-over of a Vine border injurious to the Vines? How often should the border have water applied, and what kind of manure water is the best to use? Should air be given to the house by the front sashes and at top? Is syringing or steaming the house good at this season? Is stripping off the bark from canes, when it is not loose, hurtful?—R. M. B. [If the border is a good one, and not likely to require any addition in the way of fresh soil, it might be turfed over without any serious injury to the Vines. The best manure water would be the drainage from a manure heap, but any kind of liquid manure will do for Vines if properly applied. As to when the border should be watered, that must depend upon the weather and the drainage of the border. If well drained, you are not likely to over-water it. Syringing the wall and wetting the floor is necessary at this season (except the Vines are in bloom), but steaming is not to be commended. Stripping the bark off Vines when not loose is bad practice.]

2210.—**Moving Roses.**—I have a fragrant white Rose which I wish to remove elsewhere. When can I do this so as not to injure the bush, or to prevent its producing flowers?—K. K. [Move it in autumn, or early in spring.]

2211.—**Vegetable Marrows on Walls.**—Would a Vegetable Marrow succeed trained against a wall where it would receive a considerable amount of sun during the day? Above the wall there are iron railings, which get very hot during the day; would it be advisable to carry it on to the railings? The ground is well manured. —DIZZY. [A Vegetable Marrow would grow in such a position, but the fruit would require some support to prevent them breaking down the plant.]

2212.—**Australian Cress for Bedding.**—Can this be used for carpet bedding?—J. K. [We should say not; the Cress only lasts a few weeks before it runs to seed.]

2213.—**Plants for Carpet Bedding.**—Will Alternantheras grow about Bradford; it is a very smoky place? Also, what would you recommend for carpet bedding to plant with Alternantheras? My garden has a north-eastern aspect, and I do not get much sun after mid-day. —G. H. [If planted in light rich soil, and kept well watered, Alternantheras would grow fairly well. To plant with them, you could have Lobelia pumila, Mesembryanthemum cordifolium, Golden Feather, Mentha Pulegium, Cerastium tomentosum, &c.

2214.—**Treatment of Camellias.**—Will it be advisable to plunge Camellias in the full sun, or put them the north side of a wall in the pots as they are?—CONSTANT READER. [An open airy place is the best; but the sun must not be allowed to shine fully on the plants. Behind a north wall would do well.]

E. M. M.—The yellow matter on the Rose is a fungus very common to the Rose. We know of no effectual remedy.

Gardener, Bridge House.—Apply to Messrs. Sutton & Sons, Reading, Berks.

Newspaper Shading.—*Press.*—Newspapers will do very well to shade plants from hot sunshine, but they should be movable.

How to get rid of Black Fly in Cucumber Frames.—*E. J. I.*—Fumigate them in the evening with Tobacco or Tobacco-paper. Do not fumigate too strong at a time; rather do it three or four successive evenings.

Arranging Flower Beds.—*G. Dawson.*—Much depends upon the plants you have at your disposal, and the nature and shape of the beds and borders you wish to plant. You should visit other gardens, and then form plans for yourself. It is difficult to advise you in print.

Planting Briers.—*R. K.*—These should be planted in autumn and budded the following summer. Any Roses may be budded on Briers. Your question as to naming red and white Roses is so wide.

Sphagnum Moss.—*Mrs. S.*—This is easily procured from the firms who advertise garden requisites in our columns weekly.

Peach Trees.—*I. H.*—Your trees are covered with brown scale. You should clean it off as much as possible with a small stiff brush and when the leaves have died off, paint the trees over several times during the winter with seal oil. The best book on cool house fruit we know of is River's "Orchard House."

Constant Contributor, Oldham.—We do not exactly understand the position in which you wish to grow plants in your bed-room, but there is no reason why you should not try. Your own experience will prove your best guide. Geraniums, Fuchsias, Musk, Mignonette, &c., might be tried. A dozen plants in a room would have no very injurious effect upon its inmates, we should say.

Spot on Geranium Leaves.—*J. A.*—The leaf sent is very thin, and has apparently had very little air given to it. Let the plant get thoroughly dry before you water it again, and give plenty of air.

Creeping Jenny.—*Dizzy.*—Lysimachia Nummularia.

Dracæna terminalis.—*J. H. B.*—This and other kinds of Dracænas can be got in plenty in Covent Garden, or at any good nursery, at a cheap rate.

Soil for Coleus.—*Victor.*—Light sandy loam, and leaf-mould in equal parts, will grow Coleus well.

Primroses.—*Victor.*—Apply to Mr. A. Dean, Bedfont, Hounslow.

W. W. I.—The back numbers you ask for would be 2s. 3d., post free.

Glazing without Putty.—Apply to T. W. Helliwell, Brighouse, Yorkshire; or 19, Parliament St., London.

"Hygeian Cook Book."—Apply to Trübner & Co., booksellers, Ludgate Hill.

Shaw's "London Market Gardens."—*F. T. S.*—The price of this book is 3s. 9d., post free.

QUERIES.

2215.—**Cropping a Kitchen Garden.**—I have enclosed about half an acre of good stiff ground, which I intend to devote to the growth of Cabbage, Cauliflowers, Broccoli, and Celery, and shall be glad to know which are best sorts to grow for succession. I have now plants nearly ready for planting out, consisting of Enfield and Nonpareil Cabbage, early Drumhead Savoy, and Veitch's Giant Cauliflower; also some Broccoli, but I do not know of what kind. What shall I sow to follow them for autumn and winter use? and what is the best sort of early spring vegetables and which is the best kind of Celery to grow. I intend to raise my own plants. —W. M.

2216.—**Roses not Flowering.**—I have a small unheated greenhouse in which I grow nothing but Roses in pots. I have a La France, Boule de Neige, Alfred Colomb, John Hopper, Marie Baumann, Jules Margottin, Louis Van Houtte, and Duke of Edinburgh. The first two flower well, but very small; the others do not flower. I give plenty of air and liquid manure. I think the soil they are in is good. I have also in the same house a Maréchal Niel and Gloire de Dijon; they do not flower, and the Maréchal grows very weakly. I live in a town, but not a large one. Why do not my Roses flower?—TOM TIT.

2217.—**Grubs in Potato Land.**—I have a piece of ground, that has for many years been in Grass, turned up this season and planted with Potatoes. I find the ground is infested with a kind of grub about 1 in. long, and of a dull leaden colour, called by some the turf grub. Can any reader tell me if the grub is likely to attack the Potatoes? and if so, the best way of guarding against its attacks?—N. K. J.

2218.—**Ammonia for Pot Plants.**—What quantity of strong liquid Ammonia is sufficient for, say, 1 gallon of water for pot plants, and how often should it be applied?—LAMBETH AMATEUR.

2219.—**Growing Dates.**—Having often found Date stones (thrown on garden with shop sweepings) germinate, I potted some, and put in greenhouse to winter, but in the spring they died. Last summer I put some stones in a pot in light soil; they produced a single blade about 6 in. long last autumn, but have made no further progress, and look unhealthy. Can any one inform me how to treat them, and if the Palm they produce will be at all desirable? The spike the stone throws up is exactly like that of a Gladiolus.—J. BUSSEY.

2220.—**Succession of Flowers for Window Boxes.**—I have some flower boxes in my windows that I wish to keep filled, as far as possible, with flowering plants all the year round, changing not oftener than three, or at most four times in the year. Would any one suggest a rotation for the different seasons? The flowers, being in pots and not loose in the earth, could be removed at any time.—J. A. E.

2221.—**Mushroom Growing in Meadows.**—I have got a meadow of nearly three quarters of an acre, the ground of which is moist but not wet. Is it possible to insert some Mushroom spawn, so as to grow Mushrooms during the coming season?—J. W. BATCHELOR.

2222.—**Growing the Cocoa-nut.**—Can any one tell me what temperature, &c., is required to start a Cocoa-nut into growth, and what the best time to try it? I have seen them grow in shop windows in Chicago, U.S.A., but never here.—J. BUSSEY.

2223.—**Apricots in Glass Sheds.**—In No. 3 of GARDENING ILLUSTRATED of last year, a brief description is given of Apricot culture under a glass shed in Nottingham. I would like to ask how the system has answered during the last two critical seasons we have passed through; and if a construction made in the lean-to style would answer the same purpose, with dwarf trees instead of standards; and if it would be safe to remove the glass from the trees—say from November till the trees wanted protection in spring. It would simply be a lean-to shed without a back, having wooden ends, the glass lights resting on 9-in. pillars at the bottom, and wood posts at the top; the situation cold—in the county of Durham.—S. B.

2224.—**Vine in Conservatory Not Doing Well.**—Can any one tell me the best way to proceed with my Vine? The year before last, when the Grapes were colouring, I unfortunately burnt some sulphur in the house to destroy mildew. The following morning the leaves were all curled, and ultimately dried up, and the fruit did not ripen. The following year the wood was very weak, and did not bear fruit; and this year, although there are a few bunches showing, the Vine altogether looks sickly and weak, and makes little wood. The Vine is about nine years old.—INQUIRER.

2225.—**Prickly Comfrey.**—I keep one horse and a pony, and should be glad to know how many plants of the above would supply them through the summer; also how far apart the roots should be planted.—DISPATCH.

2226.—**Books.**—Can any one inform me of the title, author, and publisher of practical books upon the undermentioned subjects, and for use in South Africa, viz.—1, agricultural chemistry; 2, diseases of vegetables and cereals, and their preventives; 3, cultivation of Maize, Tobacco, and Arrowroot?—S. V.

2227.—**Impregnating Flowers.**—Will any one explain to me how to impregnate the flowers of Calceolarias and Auriculas?—PRESS.

2228.—**Adiantum Farleyense.**—I should be much obliged for an account of the treatment and culture of this Fern, and the best way to grow it in a cool greenhouse in winter, or will it succeed better in a warm room at that time?—BLACKROCK.

POULTRY.

Feeding Hens when Sitting.—In reply to "Mabor," hens should always have free access to water; but neither food nor water should be given so that they can get it without coming off the nest; they should rather be encouraged to come off and run about, to stretch their legs, and air themselves and their nest every day. They should also always have free access to food, as you never can tell when they are coming off. A friend of mine used to lift his hens off the nest every day, and shut them away from their nest for an hour, covering the eggs with a blanket; but I do not think this a good plan, as the hens generally resent being lifted off, and in the struggle some of the eggs are likely to suffer. I find grain and Maize the best food for hens while sitting, and not soft food.—W. T. D.

Fowls Laying from Home.—We have no run for poultry except a farmyard and other grounds not in our own occupation. What kind of fowl (say half-a-dozen and a cock) would be most likely to lay in their own house: that is, not lay their eggs here and there in sheds, barns, &c., to which we have not convenient access? Also, where or how could we get the suitable kind? and, speaking roughly, about what would be the cost per head? All this refers to hardy fowls which would lay well. The house for them is roomy.—T. T. EWING.

Disease in Fowls.—Are your fowls kept on a run? If so, the run being stale would affect the fowls in the way you mention; or perhaps you have been giving them too much soft food and not enough solid. Cut the feathers off carefully with a pair of nail scissors, and give the chicks a dose of castor-oil, and feed them on solid food, such as good Barley or Maize; let them have as much liberty as possible, and if the run is stale, have it dug deeply all over.—W. T. D.

Eggs for Hatching.—Choose fair-sized eggs (the fresher the better), and look whether the air vessel at the round end of the egg is clear; this can be ascertained by holding the egg before a strong light; if the air vessel is clear the egg is productive. There is a saying that when the air vessel is at the top of the egg the chicken will prove to be a cock; when at the side, a hen; but this I do not believe.—G. W.

—— There is really no reliable means of telling whether an egg is fertile or not until it has been sat upon for four or five days. It should then be held up to the light, and if opaque, then it is fertile; but if transparent it is useless for sitting purposes, but may be used for cooking, as it will not have been injured in the least by the hen sitting on it for a few days.

Eggs not being Fertile.—I have six hens and one cock: two of the hens and cock are eleven months old, the rest are about two years and over; they are all in good health, and the cock very strong. I sat eggs from each hen, but they are not fertile. Will any one give me the reason?—A. P. K.

Prolific Fowls.—I have a hen which was hatched last March twelve months, and brought out a brood on Easter Sunday, and commenced laying again last Sunday. I think she may be called prolific, as I have kept fowls for the last nineteen years, and have never known one to lay again so soon. I do not know what breed she is, as I have no faith in what are called the fancy breeds.—THORBURN.

Nests for Sitting Hens.—Can any reader tell me what a nest ought to be composed of for a sitting hen? and which is the best way to make it?—H. E. B.

Poultry Breeding.—No matter what kind of hen may be used for hatching chickens, it does not affect the purity of any young chicks she may hatch.

Fowls with Diseased Legs.—We fancy the Brahma cock is either suffering from scaly legs—in which case the whole of the legs becomes covered with a hard scaly substance—or the hens peck the feathers off his legs. If the former, sulphur ointment well rubbed in will soon effect a cure; if the latter, the hens must be removed from the cock until the feathers are renewed

Purity in Crossing Breeds.—Will some experienced breeder kindly inform me the requisite time for removal of hens from present mate to the newly-intended cross?—W. N. G.

BEES.

A LONG spell of cold north-east winds and consequent drought has not been productive of good for the bees, as the insects are weak and suffer much from the cold. It is not probable that swarms will be early this year, as the stocks have been much emaciated by the severe winter, and, perhaps, far more by the very unfavourable state of the weather last year. We hear of lost stocks very frequently, and many small bee-keepers now find that in depending too much upon the natural food in the skeps they leant upon a broken reed. To this want of natural food, where not supplemented by feeding, is largely due the deficiency of early brood; and as a result, swarms will be later and weaker. A change to soft balmy winds and mild rains would be for the bees an immense boon, and little real work can be done until such change comes. Just now there is an ample store of food offered in the great bloom on the fruit trees, Apple trees especially; but the cold keen winds prevent that full action on the part of the insects that a more balmy air would encourage. One great danger is looming for the bees, and this is found in the multiplicity of wasps already. We have killed dozens of these pestilent insects during the past few weeks, and if every one represented a possible nest, then much good has been negatively performed. None the less large numbers are alive, and perhaps ere this depositing eggs in some secure place. Bee-keepers should keep a close watch for wasps now, and kill all they can find; if they do not, the progeny of these early birds may by-and-bye prove most destructive to their bee stocks. During hot dry weather keep water in shallow pans or troughs within reach of the bees, as just now, and always during hot weather, it is difficult otherwise for them to find the needful moisture.

A. D.

HINTS ON THE MANAGEMENT OF BEES.

MR. YATES, of Manchester, has sent us a catalogue of his beehives, &c., from which we extract the following hints:—

Aspect.—The situation of the hives as to aspect is not very material. A preference may be given to the south-east; but it is very important that they should stand in a place sheltered from the wind, and that they have an open space before them, so that the flight of the bees may not be impeded. If placed with the against a wall or fence, the stands should have a space of at least 3 ft. behind them, so that any operation the hives may require can be done from the back. The ground below, and immediately in front of the flight board, should be kept bare, so that bees returning heavily laden, if beaten down by a sudden storm, may not fall among long Grass, where they would get chilled and perish.

Bee Bench.—It is very desirable that hives have separate stands, and they would be better if placed not less than 3 yards or 4 yards apart, as any operation which may be required will be more easily performed when the bees only of one hive have to be contended with. The stocks will also escape several dangers they are liable to when a number of hives stand on the same bench. A post, with a flat square top, standing 9 in. to 12 in. out of the ground, with a board 15 in. to 18 in. square nailed on the top, will be all that is required. Let the board incline slightly to the front, that the water may run off the flight board instead of into the hive, and on this fixed table place the hive and board. It must be understood that the top of the stand just described is not intended to be the floor board of the hive: this must be a separate loose board, which must be lifted with the hive whenever required.

Covers for Hives.—It is necessary that straw hives should be well protected from the rain and sun and the more perfectly this is accomplished the greater the certainty of success; if the hives are wrapped with carpet or sacking, so as to prevent their being influenced by changes of temperature, so much the better, as they cannot be kept too dry and warm. Thatching with straw is an excellent plan; it may be done thus: Take a good-sized wisp of Wheat or Rye straw, and tie it very securely at the root end, then open and spread it evenly round the hive, the ear end hanging downwards; over this place a hoop of thick wire, which will hold the straw closely round the hive; and to secure it from high winds tie the wire hoop down to the stand, and trim the bottom of the straw neatly, a little lower than the floor-board, cutting it rather shorter over the entrance, which will then have quite a porch-like appearance. But perhaps the most durable and effective covering is made by placing a layer of Wheat or Rye straw, about ½ in. thick, between two sheets of poultry netting, and binding them neatly together; this placed round the hive will prove an excellent protection, and, with a galvanised milk-pail or an earthenware mug for a cover to keep off the rain, will prove everything which can be desired.

AQUARIA.

STICKLEBACKS IN AQUARIA.

ALTHOUGH numerous articles on aquaria have appeared in GARDENING ILLUSTRATED, I have not seen one in favour of sticklebacks; all that is said about them is that you had better keep clear of them in an aquarium. Now, I think them most interesting little fish—far more so than gold fish; and I think I cannot better undertake their defence than by giving an account of some kept by us. In the middle of our rockery nestled a tiny pond, about 3 ft. by 2½ ft., and about 15 in. deep. The rockery was carried down into the water at the back, and Creeping Jenny and Forget-me-not, planted in the crevices, grew down and floated on the water, the yellow and blue flowers looking very pretty. In the pond resided an eel, two or three leeches, shrimps, butterfish, little bright beetles which danced in the sun on the water, large flat beetles—beetles that come up for and carry down with them bubbles of air on the hind part of their body; red water spiders, water tigers, and last, not least, two male and ten female sticklebacks. About the middle of May, 1876, one of the male sticklebacks began to show signs of nesting by closely examining the whole pond—at which time his throat was a splendid crimson, and his eyes sparkled, and were the most lovely emerald green. Having settled on a spot, he began to bring pieces of weed, which he bit off the plants (Water Crowfoot), and buried the end, by bringing pieces of sand. At this time he was much annoyed by some spiders, who would persist in continually swimming about his nest. To get rid of them, he swallowed them, swam to a distance, and ejected them out of his mouth. The nest took four or five days to complete, and presented the appearance of an exquisitely-formed miniature bird's nest, so small that the top of the little finger would have covered it. It is said that he selects a lady fish, and drives her to the nest; if she approves of it she deposits her eggs there but we did not see this part of the performance. After the eggs were laid, he was sole guardian, and kept everybody at a distance; and as the other male fish had occupied the other corner of the pond, the rest had rather a hard time of it. In about ten or twelve days the nest was full of young fry, but so small as only to be perceptible on looking very closely. The fish hovered over and around them, and if any went out of bounds he brought them back in his mouth. He guarded them for about three weeks, when they became dispersed, and I think most of them were eaten by the other fish. If any one should take to keeping sticklebacks, be careful not to have too many males, as they fight desperately. Their mode of attack is to swim slowly under their antagonist, erect their spines, and rush violently backward, ripping him up. Our sticklebacks would, if you stirred the sand with a stick, range themselves round to seize the worms; and it was rather strange, if you put a finger in the water, to see them swim boldly up to it to see if there was any food. We fed ours on small worms and morsels of raw meat dried in the sun. PISCES.

White Matter in Aquarium.—Can any readers inform me what is the cause of the white film that forms on the gold fish in aquariums? We find that, however free they are at first, when they have been in for a week or so it begins to form, until it envelopes the whole fish, and then turns black. The fish grow weak, and at last die. Is there any remedy when it has once commenced?—UNA.

Gravel for Aquarium.—Should the top of an aquarium be covered in, or left open? Would fine gravel do for the bottom instead of shingle? and should the plants be put in the shingle or in pots?—MICK., *Cork*.

Caddis Worms.—I have a quantity of these interesting little creatures, newly collected, in my aquarium; and as I would like to watch their existence till the flies develop, I would feel obliged if some zoological reader would inform me what to feed them with, and give me any general information that may be useful.—W. C.

Water for Aquarium.—Would any one tell me if ordinary drinking water would do for an aquarium, and how often it should be changed?—J. T. M.

Gold Fish.—Has gas an injurious effect on a globe of gold fish in a small room? Also, is it necessary to feed the fish, or is water weed placed in the globe sufficient? PISCATOR.

Fish in Aquarium.—I have a small aquarium, 18 in. by 12 in. standing in a verandah out-of-doors with a fountain, which is playing for about two hours every day. I cannot get the fish to do at all; they seem very mopish, and are attacked with mildew. Can any one recommend a cure?—S. F.

Stocking an Aquarium.—Would your correspondent "W. B.," who gives such a clear and good explanation of "stocking an aquarium," in GARDENING of April 17, 1880, be so kind as to say whether sea or river shingle should be used, supposing each to be equally well washed; also, whether the water in bell-glass would require changing at intervals, and whether it would be necessary to cover glass to keep dust from the water?—T. K.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 3s to 6s; Azalea, 6s to 12s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 3s to 6s; Lily of the Valley, 6s to 18s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus, 4s to 9s; Pelargoniums (zonal), 3s to 6s.; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s; Violets (Neapolitan), 4s to 5s; Violets (French), 1s 6d to 4s 0d. —*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Camellias, 1s to 4s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 6s; Roses (forced), 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 3s to 6s.

Plants in Pots.—*Per doz.*—Arum Lilies, 6s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Cyclamen, 6s to 18s; Daphne indica, 12s to 24s; Deutzia gracilis, 9s to 18s; Dielytra, 9s to 12s; Dracæna (green-leaved kinds), 12s to 30s; Dracæna 18s to 60s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 12s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Azaleas, 10s to 20s; Maiden-hair Ferns (large), 4s to 7s; Cyclamen (large), 5s to 10s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 3s 6d to 7s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per 100.*—Asparagus, 1s 6d to 4s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips (outdoor), 3s to 4s; Radishes, 1s 6d to 3s; Herbs, 2d to 6d. *Per doz punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 5d to 9d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb, forced (per dozen bundles), 3s to 6s Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

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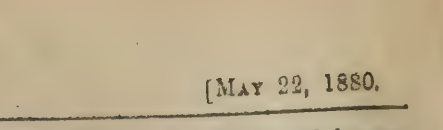

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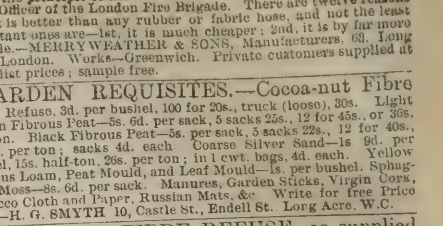

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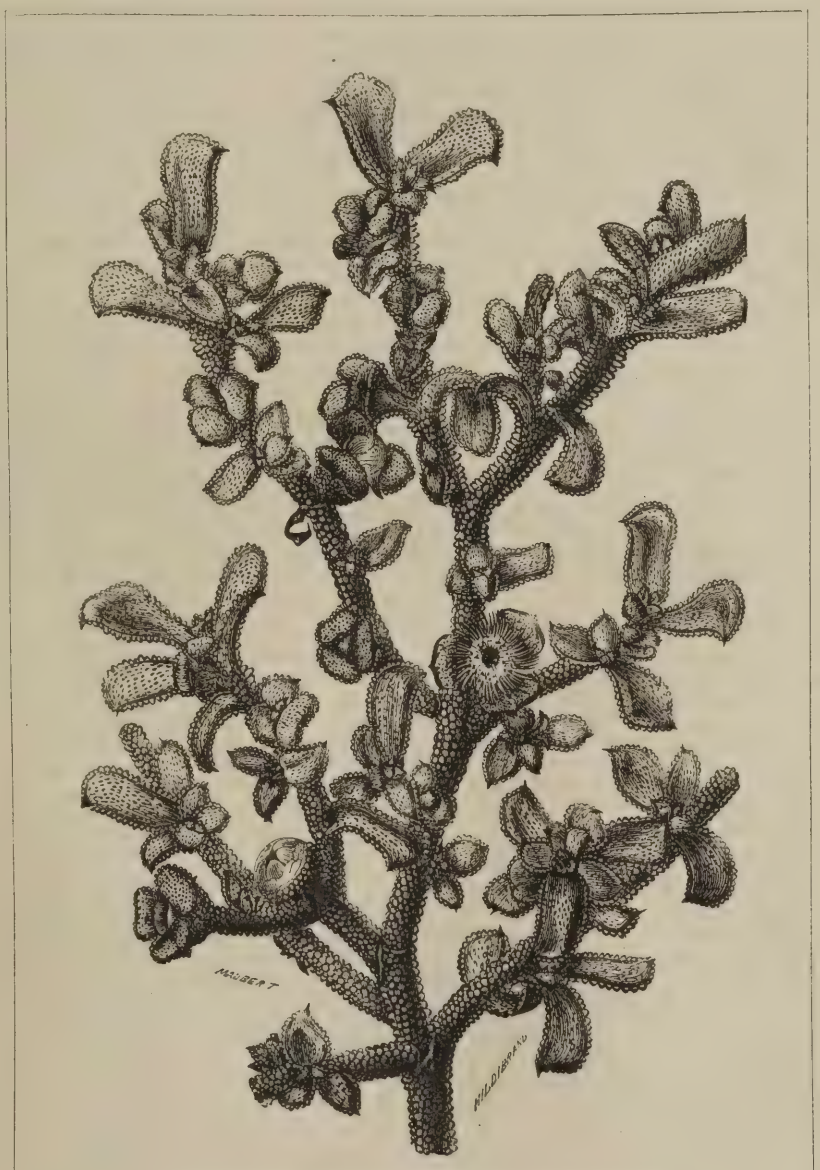
GARDENING ILLUSTRATED.

VOL. II.—No. 64 *SATURDAY, MAY 29, 1880.* PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

ICE-PLANTS.

SUCH a long-winded name as Mesembryanthemum for an annual almost alarms one, and that, too, belonging to our common Ice-plant (M. crystallinum), of which the annexed is a representation, a plant grown in most large gardens for garnishing purposes; it is also sometimes used as a pot plant, but it is most effective when planted out on rockwork, or better still, on some old terrace wall, if such exists, allowing it to fall over its face. It will, however, grow in any good soil in a sunny situation, and it might be used as a band to a sunny border. It will grow from 3 ft. to 4 ft. in a season, and on warm days has a cool and refreshing look. Its flowers are unimportant compared with the crystal-bespangled stems and foliage; and the richer the ground the greater the crystal development. Seeds of it should be sown in heat in March, but if sown now and planted from 6 in. to 8 in. apart, fairly good results may be had in late summer, or plants of it ready to plant out at once may be had at most nurseries at a cheap rate. There are two varieties of it—one with red, and the other with white flowers. This, it must be remembered, is not the Ice-plant of cottage windows: that is a perennial named M. cordifolium, the variegated form of which is largely used in carpet gardening. M. pomeridianum is a strong-growing species, with broad spathulate foliage and large purple and rose-coloured flowers. As its specific name indicates, it flowers in the afternoon. It is not so common a kind as the last, but it well deserves a place on a south border. M. tricolor is perhaps the most showy of the annual Mesembryanthemums; it is a neat plant, with cylindrical foliage, and is not a creeper; it grows 6 in. or 8 in. wide and 4 in. or 6 in. in height; of its flowers, which are abundant, some are purple and the others rose, the result being a good contrast; this species should be sown in a sandy soil in the open garden about the end of April, or even now; it dislikes transplantation, and it lasts longer in the ground than in a pot. M. pinnatifidum is a pretty little plant which has the habit of M. crystallinum, but is not so rampant a grower; the foliage is semi-pinnate, and the flowers small and red in colour. M. anatomicum is another kind, curious rather than showy; it is not generally grown as an annual, but it does best treated in that way; it creeps on the ground, and seems to get rid of its epidermis as quickly as possible, a circumstance which gives it the appearance of a skeleton. When grown in pots in windows Ice-plants require light, rich, sandy soil and a sunny position.



ICE-PLANT (MESEMBRYANTHEMUM CRYSTALLINUM).

FAIRY ROSES.

These are grown by thousands for the London markets. They are raised from the young tops of plants inserted in sharp sandy soil in May and June. They are placed in a warm close house or pit until rooted, when they are potted on in good sandy loam, until they are in 5-in. pots. They are then grown in airy houses and by the following spring they are loaded with buds and rosy-coloured blossoms, the dense masses of green leaves hiding the pots. Such plants as these find a ready sale in markets, great numbers of them being cut up and used in bouquets, the small green leaves and buds being very effective among light-coloured flowers. During the time in which the plants are coming into bloom they are arranged on stages, receive abundance of water, and are frequently fumigated to keep down insects. Many thousands of them can be placed in a comparatively small house, and when coming into bloom they present a most striking feature. In the centre of each pot is placed a stake, to which to tie the leading shoots and thus induce the plants to assume a pyramidal, though by no means a formal, shape. They grow about 9 in. high and about as much through at the

base, and they form ornamental objects for some time, even in a sitting-room.

Insects on Roses.—Those intending to exhibit Roses will require to pay every attention at this season, so as to protect the buds from the depredations of the various insects. May bugs are very destructive at this season of the year, the evening being the best time to destroy them ; aphides should be thoroughly cleared off by means of the garden engine, and by carefully washing the trees the fly can be dispersed. It is not safe to apply any insecticide for the destruction of fly at this season, as the foliage and flowers are too far advanced, and if Tobacco water or any other deterrent be used and not efficiently washed off with clean water, it will often stain and spoil the appearance of the foliage. Tea Roses will be found to be attacked by mildew, owing to the cold and changeable weather. The best way to prevent such a mishap is to sulphur them carefully, and then thoroughly to syringe the trees after three days. The caterpillar and Rose maggot should be picked off every day. The maggot will be found curled up in the foliage and in the centre of the buds, and by steadily examining the Roses every day these pests may be well kept under. Take off all lateral buds, leaving nothing but the centre flower, so as to throw the strength into the single bud ; by so doing the Rose is much larger and better formed. The buds selected for exhibition should be carefully staked and tied, so as to protect them from stormy weather, taking care not to injure the foliage in tying or supporting the young growth. Water the plants occasionally with a mixture of cow manure, sheep-droppings and soot water, mixing the whole in a large tub, which will be found to improve the growth as well as the colour and size of the flowers. Such Tea Roses as Maréchal Niel, &c., require a paper shade where much exposed to the sun's rays, in order to keep the outside petals from being discoloured ; by the use of paper shades Roses may be kept back a day or so, a delay which will be of great service to those who have but a limited stock to cut from. Roses when cut should be placed in tubes in water mixed with a small quantity of Condy's Fluid, to prevent them opening too quickly. Roses for exhibition should not be cut in full bloom, but should be about half expanded, the heat of the day very frequently being prejudicial to them.—G.

The Rose Maggot.—This maggot is very annoying to the Rose grower, boring into the best buds, and destroying many a cherished hope of fine flowers. There seems to be no possibility of escape from it ; every year it makes its appearance, and if not destroyed in the spring as it comes to life, scarcely a perfect flower will be obtained, especially early in the season. At the time of pruning, every bit of the prunings, with the pips, if any remain, should be carefully gathered up and burnt. As soon as the shoots begin to push, and the leaves expand, the larvæ will make their appearance ; they may easily be detected by the web they spin, coiling themselves up in the young leaves. It is here they must be looked for with care and destroyed, going over the trees once a week, crushing them with the fingers ; for, if allowed to remain, as soon as the buds make their appearance they will spoil them. In confined beds and over-sheltered Rose gardens, this insect is much more prevalent and destructive than in the extensive open grounds. The more exposed situations appear to be uncongenial to this and other insects that infest the Rose.

Standard Roses in Pots.—Where there is a demand for cut Roses early in the spring, and these have to be brought forward in Vineries or other fruit houses, standard plants will generally be found the most useful shape, as, owing to their heads standing out in the full light, both flowers and foliage during short days come stronger than on dwarfs. They are also most suitable for conservatory decoration, as they can be placed in positions in borders amongst permanent plants, where their naked stems can be hidden, and thus be rendered more effective than small dwarf plants. Standard Roses may be kept in health for many years in 8-in. or 10-in. pots by annually shaking them out in autumn, shortening their roots a little, and re-potting them in clean pots of the same size. Good loam, well enriched with thoroughly decomposed manure, is the most suitable compost in which to pot them ; and if the loam be very adhesive, a liberal addition of road sand will be a great improvement.

FRUIT.

Treatment of Hardy Fruit Trees.—At this season, when all kinds of hardy fruit trees are growing luxuriantly, it is well to bear in mind that next year's crop depends in no small degree on the treatment that the trees receive this year ; therefore they must be kept clean and healthy to bring about successful results. One of the most important operations connected with fruit culture now demands attention, viz.—the pinching, stopping, and regulating of shoots. Summer pinching of the new growth, to induce fruitfulness, is much preferable to winter pruning, for nearly all kinds of fruit ; and, if done properly and at the right time, the best results may be anticipated. Frequently, for the sake of appearance, the shoots are pinched in too closely, and growth thereby is too much repressed ; sometimes they are allowed to run wild, and then removed wholesale—a proceeding which is ruinous to the commonest fruit : extremes either way should be avoided. Apples, Pears, Plums, some kinds of Apricots, and all kinds of Cherries except Morellos, bear their fruit on side shoots or projecting spurs, and therefore the new growths of these, as a rule, should be stopped at the fourth or fifth leaf ; if pinched in closer than this, the buds "close home" break into new growth in lieu of forming fruit-buds, which is the object desired. Let it be granted, that by leaving them there the spurs in time become long and far removed from the wall, then, to a certain extent, the wall becomes useless as a protector ; but it is an easy matter to remove annually at the winter dressing a few of the longest spurs, and so by degrees renew those on the entire tree. Of course, when stopping has been once done at the distance named, any supplementary growths of this season may be stopped at the first joint, and repeated as often as growth makes the operation necessary. If, as sometimes happens, new growths have been left too long without having been removed or stopped, do not remove them all at once, as that would give the trees a severe check ; but take off a few shoots at intervals of three days till all be removed. It is always advisable, however, to obviate this by stopping as growth progresses. Peaches and Nectarines that were not sufficiently disbudded should have their new growth pinched in rather closely—this, in their case, being preferable to disbudding at this late period. If not already done, the fruit should be thinned at once, and the same remark applies to other kinds of fruit that have set thickly, particularly to Pears. Water Strawberries in the absence of rain, as they soon suffer if they lack moisture at their present stage.—W. H.

Watering Strawberries.—In treating upon Strawberry culture, it is generally assumed that they are planted in strong, heavy land, as that is the best adapted to this fruit ; but the soil of many gardens is of a light sandy nature, not calculated for the satisfactory growth of Strawberries without especial attention, and which will need a plentiful supply of water ; as now, whilst the fruit is swelling, the energies of the plants are taxed to the utmost, and if deficient in moisture at the roots, the produce will not be satisfactory. It should always be remembered that in applying water, especially to a crop like this, one good soaking is much more effectual than several insufficient applications.

The Morello Cherry.—This Cherry seems to be less affected by frost than other kinds, and its comparative immunity in this respect doubtless arises from the pendant or drooping character of its branches. As a standard it is singularly handsome, and on that account deserves a higher place than is commonly assigned to it amongst decorative trees. But, beautiful and floriferous as it is in spring, it is even more ornamental during summer, when laden with its rich red crop of fruit ; the latter, owing to its tartness, is not so much sought for by birds as that of the sweet kinds. Morello Cherries generally realise good prices in the market, where they are usually sold in baskets containing a dozen pounds.—A.

VEGETABLES.

GROWING CABBAGE.

Cabbage will grow anywhere and under any conditions, but, like most other vegetables, it delights in a deep rich soil ; it is desirable, however, to have it in a somewhat firm condition where early produce is desired. In some places young Cabbages are frequently cut off by severe weather in winter, especially if planted in autumn in loose freshly-worked land. The remedy in such a case would be to make the ground somewhat firm before planting, or to have it prepared a month or so before, in order to give time to settle. Planting any kind of green crop on loose soft land in autumn encourages an early luxuriant growth, which is liable to suffer during a severe winter. Of course, where the land is never dug more than one spit deep, the objection does not apply with so much force ; but every cottage gardener ought to arrange his cultivating operations and his crops in such a manner as to enable him to dig the whole of his land at least 2 ft. deep every four years ; and he will find in the long run that this, instead of adding to the cost of working his land, will in reality cheapen production, if the improvement in the quality and quantity of the crops be taken into consideration. It scarcely requires any argument to prove that anything that opens up new sources of plant food almost free of cost must be a great boon to the cottager, and will eventually become an increasing source of profit to him.

Sow from the middle to the end of July, according to the earliness of the situation. If the weather be dry, which is frequently the case in July, have the ground thoroughly soaked with water twelve hours before sowing the seeds, and afterwards shaded by laying a mat over the bed. Rhubarb leaves or branches with the leaves adhering can be used, only they must be removed and the earth between the young plants loosened up as soon as they appear. The seeds should be sown thinly in drills about 8 in. apart, and the ground for the main crop should be prepared and made ready for planting by the first or second week in September.

Planting.—Many cultivators usually plant Cabbages after the Onion crop, I have done so for years ; and the only labour necessary is to hoe the ground up deeply, draw drills 2 in. or 3 in. deep and 20 in. apart, and plant in the drills 18 in. apart. This plan answers well where the ground has been deeply worked and made very rich for the Onion crop, but must not, of course, be taken as applicable to every situation and under all circumstances. The small plants that are left in the seed-bed may be pricked out thickly in some vacant corner till spring ; they will come in useful to fill up vacancies and to make another small plantation for succession to those planted in autumn. If it be considered desirable, another sowing may be made in March or April to plant out in any spare land for autumn use, but, unless the demand for Cabbages be considerable, this will hardly be necessary, as if the stems from which the early Cabbage have been cut be allowed to remain, and the leaves carefully trimmed off, each stem will produce three or four small hearts quite equal to those planted late in spring in quality, though not quite so large ; in fact, the second crop on good land is superior to the first. The old stems should be cleared off in time to have the land ridged up roughly in winter for Potatoes the following season, as that crop will be found a very good rotation ; and, as other crops of Greens will be ready by that time, the Cabbages may be dispensed with. Three of the best kinds for garden culture are Atkins's Matchless, Wheeler's Cocoa-nut, and Enfield Market.

Cutting Asparagus.—Asparagus should not be cut till the second year after planting, and then only sparingly. By allowing the plants to get well and firmly established before making a very free use of the knife, and with judicious after-treatment, they will produce excellent crops for many years ; and at no time cut too severely, but bear in mind that the more copious and healthy the foliage during the summer, the stronger will be the produce next spring. As the strength of the roots depends on the quan-

tity of foliage, there must be shoots enough left to sustain them healthy and vigorous, and to replace and store up for the following season sufficient matter for the healthy action of the plants. It is not advisable, however, to cut away the strong shoots and leave the smaller ones; quite the reverse. Allow some of the finest shoots to grow after the first fortnight or three weeks' cutting is over, removing any small spray that may appear; for a few strong shoots to each plant, properly exposed to light and air, will be more beneficial than any quantity of small ones. In cutting, a little of the soil is removed from the necks of the shoots with the Asparagus knife, which is then pushed down, carefully avoiding injuring the crowns or other shoots that may be pushing up. When the knife is at the base of the shoot, give it a slight twist towards—at the same time pressing it close to—the shoot; then draw it gently upwards, by which process the shoot is separated from the plant. The knife generally used in this operation has a rough or saw-like edge, set to cut only one way, and that by pushing down. It should always be kept sharp at the three or four first teeth from the point. For those that are fond of natural unbleached "Grass," any kind of knife will do, and in kindly growing weather the heads may even be broken off without a knife. Asparagus for market is generally blanched by the earthing-up system, which is done by covering the crowns with a few inches of light soil, generally taken from the space between the rows, by which process we obtain the white bleached or blanched shoots daily seen during the season in the London market. When this method is adopted, the shoots must be cut below the surface just as they appear. The cutting season should cease about the middle of June, and in no case should it be continued after the end of that month. When green Peas can be had Asparagus is less required; therefore, it is desirable to discontinue cutting after the 10th or 15th of June.

The Turnip Fly.—There is not a farmer or gardener in England who at the present is not dreading the attacks of that pest the Turnip fly. If they will only drill in a small quantity of peat charcoal along with Turnip and Mangold seed, they will find that the young plant rushes up with the broad leaf so quickly that the crop will be secured. If the drought becomes exceptioually severe, a sprinkling of this charcoal on the little plant will also save it from being eaten up. I have seen the effects of it during the past three years, and I think that your readers should know of it.—A. W. E.

Dandelions for Salads.—This somewhat resembles the Endives, and is one of the earliest and most wholesome additions to the salad bowl. Sow in May and June, in drills about 6 in. apart, and thin out the young plants to 4 in. apart in the rows. These will be ready for use the following spring.—J. Burrows.

Cats in Gardens.—An old friend of mine who was much pestered by cats told me with much glee of the success of a plan he had hit upon. His cure was to first catch his cat in a trap, and then not to kill but cure the sinner. This he did by subjecting him to the water cure, in the shape of a slow discharge of some two gallons of water, and then as soon as possible after the operation to open the door of the trap and let the prisoner go free. "If," said he, "you kill a cat, his successor will soon visit you; I never see the same cat twice." He found it better to educate than destroy.—R. G.

Ants.—Some time since I was troubled with ants in my garden. Spending an evening there in the midst of summer, my little girl accidentally dropped a piece of loaf sugar near their chief resort; in the morning I found it literally covered with the pests. Both sugar and ants were quickly destroyed, and I have not been troubled with one since.—T. W. Carwarding.

Hares and Rabbits Barking Fruit Trees, &c.—Lately I have been troubled with hares, &c., barking my young fruit trees, and tried a remedy which proved most effectual to prevent the mischief—and that was by mixing petroleum with fresh cow-dung, and with a brush painting all the stems and branches within their reach; one application was sufficient. Some of your readers may be glad to know it.—Wm. Fisher.

The Purslanes (Portulacas). — These supply some of the most brilliant colours among flowers, and when the sun shines fully on the plants, and the expanded flowers are open to the eye, the effect of a line or large patch of plants is very fine. Portulacas can be had in both single and double forms. Some prefer the former and some the latter, but both make effective border flowers. Of the single flowers, the best are aurantiaca, golden-buff in colour, some of the flowers having more yellow in them, but both forms very pretty; occulata, having a yellow centre with a purple ring round it, and a broad margin of white, very good and distinct; splendens, a variety well named, the colour

Single-flowered Purslane (Portulaca).

rich purplish-crimson (this is one of the very finest varieties); Thellusoni, orange-crimson, very fine; and Thorburni, bright yellow and very distinct. At some time or the other these single Portulacas showed a tendency to become double, and this having been followed up, a race of double varieties has resulted. These are all, more or less, double forms of the single varieties, and by dint of selection they now produce very large and full double flowers. The yellow and buff are double forms of aurantiaca, and, being flushed with red on the interior of the petals, are highly effective. Rosea plena, bright rose, is very handsome, and some of the flowers take on a depth of colour which makes it appear to be a double form of splendens. One

Double-flowered Purslane.

of the most beautiful varieties is caryophylloides; its flowers are fully double, and are marked with purplish-crimson on a blush ground, and broadly flaked with the same. The Sulphur is a double form of Thornburni. There are other colours, but the selection given is one of the most distinct, but all are good. These are well worth cultivating, but should be grown well. It is a common practice to starve Portulacas, as if they did best when in this poor condition. I hold the opinion that, like many other plants, Portulacas should be planted in good soil, in which they can thoroughly establish themselves, covering the surface of the ground with a dense coating of foliage, and then when the hot bright midsummer sun falls on the plants, hundreds of splendid flowers leap up responsive to its influence. Portulacas are most effective when they are not unduly crowded. Individual plants should have ample space in which to grow, as they quickly cover a good space of ground. The soil being made good, the surface should be covered with ½ in. or so of mortar rubbish, and over this some fine soil should be sprinkled. On this let the seed be sown thinly, and all in danger of being crowded removed as soon as large enough. The roots grow quickly through the grit to the rich soil below, and the plants, becoming thoroughly established, bloom on till autumn dims their lustre. A packet of seed of the large flowered P. grandiflora will yield a variety of fine brilliant colours, suitable for masses or edgings to beds or borders. The seed may be sown in the open ground from April to June.—A.

THE RANUNCULUS.

(Continued from p. 136.)

Subsequent Treatment.—The plants will make their appearance in a month or five weeks; after which it will be advantageous to press the soil closely around them with the hands, stopping up the holes made by worms, frost, and the protrusion of the leaves through the surface. A slight treading between the rows will give a compact surface, and make room for the top-dressing. This should consist of rich compost, chiefly of decomposed manure (free from wireworms). It should be added first as a protection from cold drying winds, and subsequently as a source of nourishment to the roots, carried down by the agency of rain. Night soil that has been exposed and pulverised may be used in the top-dressing, but it must be used with caution, as it is a powerful stimulant. The uncertainty of our climate and our liability to the recurrence of frosts in April, and even May, is undoubtedly an obstacle to the easy and certain success in the culture of this flower; but then the same observations apply with equal force to the Tulip, and other floral gems of the open garden. It is proper, then, as far as possible to guard against this evil, by having a quantity of flake hurdles at hand to cover at least the best beds. Short stakes should be driven in the ground to support the hurdles just above the foliage. Other means of shelter may be useful, but as the object is the security of a nearly hardy plant, a close protection would be injurious, as it would weaken and draw both foliage and blooms, and thus render the plants more subject to injuries from being delicately brought up. Should the grower from any circumstance have neglected to cover his beds, the first step to take on rising in the morning on which the frost occurs is to put on the hurdles, and then cloths or mats, and not remove the covers until the plants and ground are thawed; after which the light should be admitted gradually, by propping up the hurdles on the north side, and the direct sunshine excluded some time after all remains of frost have disappeared. If large worms exist in the beds, they should be collected by hand at night, or destroyed by lime water, used in a clear state. The ascent and descent of worms is injurious to all choice plants, and especially to the Ranunculus, which, from its shallowness in the soil, is the more exposed to harm from such disturbances.

Watering.—Genial showers in April and May are essential to a vigorous and healthy growth. The Ranunculus delights in a moist soil, and if there be a deficiency of rain in May, water must be plentifully supplied, just at the time the flower buds are appearing. This is a critical period; and for lack of moisture many plants fail to bloom, and send up only an abortive flower stem. Water from a pond or brook is better than from a well; if such cannot be obtained, fill a large vessel with water from a pump and expose it to the sun and air before use. It should be applied (morning or evening, according to the state of the temperature) between the rows, from a tube pot, and not over the foliage, except in cloudy and showery weather. It may appear an anomalous direction to water in wet weather, but advantage should be taken of a shower falling to give a generous overhead watering, as the plants are then naturally in a better state to receive moisture than in dry weather, when their pores are contracted. As a general observation, it is better to water copiously three times a week than to administer a

small quantity every morning and evening. To obtain fine blooms for exhibition a little weak manure water may be occasionally given. I have tried numerous natural and artificial guanos, &c., in some instances without any perceptible benefit, and in others with positive injury. The most simple and useful agent is superphosphate of lime, reduced to fine powder and stirred in the water; or a small quantity of sheep manure used in the same way. I am aware that many connoisseurs have been at first delighted with the luxuriant foliage of their plants traceable to potent doses of liquid manures of varied name, but the apparent benefit has in almost all instances been realised at the future risk of the health of the tubers. I am not adverse to novelties because they are such, but to the experimentalis would speak the language of caution: try your hand on a small scale only; never apply a new nostrum on a larger portion of stock than you can afford to lose.

Shading.—To obtain perfect blooms, a shade of hurdles, netting, or white calico, or tiffany, should be used, when the blooms begin to expand. It should be so placed as to admit of abundance of air, be secured from disturbance by winds, and be removed in cloudy weather, and at night. This will not only prolong the period of flowering, but increase the size of the blooms. The varieties having light grounds will sustain the rays of the sun much better than those with dark grounds. Even gentle growing showers in the early stage of flowering are admissible with great advantage to the plants, and without damage to the blooms of the light kinds; but the dark coloured sorts are extremely susceptible of injury from sun and rain. This fact renders it expedient for the cultivator for exhibition to plant a separate bed of the dark selfs, which will enable him to make a more perfect provision against the evils here referred to; the covering used for this bed could not always with safety be removed at night. Many sorts will produce more flower-buds than should be permitted to mature; the lateral buds should therefore be pinched off when young, leaving two or three leaders to each root.

Flowering Season.—We are now advanced to that period of culture which is to remunerate the florist for his previous solicitude. Every expanding blossom of new variety, or the re-appearance of an old but esteemed face, will afford renewed pleasure to the ardent lover of Flora. This is the proper—indeed the only season at which an entry of the particular characteristics of each sort can be entered in the florist's catalogue. Memoranda are valuable, whether of the general points of culture and their results, or of the properties of individual flowers, and I conceive they will always be found worthy of the small time necessary to record them.

Taking up.—In wet seasons the roots may be lifted as soon as the foliage turns yellow, but if the weather be dry, they may remain till it becomes brown. The Ranunculus is apt to vegetate again immediately after it is brought to a state of rest; care is therefore required when the weather is moist at this season to select and take up the sorts as they ripen, and not to wait until the whole are fit. Some varieties are especially prone immediately to vegetate; such should be lifted with soil attaching, potted in dry earth, and kept in the seed-room or greenhouse until matured.

Sowing.—The compost for seed should be a moderately light loam, to which may be added a sixth part of leaf-mould or Willow earth; the soil should be carefully sorted over to free it from insects of any kind. If the soil can be exposed and frozen through, or put into an oven and baked, it will free it from worms and larvæ of insects. Sow in boxes or pots not less than 5 in. deep. Put some coarse siftings at the bottom of the boxes for drainage, and then fill up with your compost, which should be broken but not sifted. Make the surface quite level, and press it gently with a board; then sow the seeds about ½ in. apart, and water with a finely perforated rose water-pot to make them lie flat; then sprinkle with fine dry mould, just sufficient to cover the seeds, which should not be more than the thickness of a shilling below the surface.

Turban Ranunculuses.—These are a class somewhat hardier in constitution, as well as coarser in texture, than those of which we have been treating; there are five or six varieties only, but their large and bold blossoms of brilliant colours make them worthy of cultivation. They may be planted in a border in October or in January, and in winter covered with a stratum of decayed leaves. In other respects they may be treated as directed above.—Carey Tyso, Wallingford.

Fortune's Clematis (C. Fortunei).—This is one of the best of Clematis for training on walls, poles, or fences. It bears large double white blossoms, which emit an agreeable perfume. As the flowers get fully developed, they acquire a rosette-like form, whilst the petals become tinged with pink. To grow it well it requires deep, sandy, and well manured soil. During hot weather a mulching of half-rotted manure or leaves will be of great advantage. It requires no further pruning than merely removing weak shoots where they are too thick, and shortening back any branches which are unripened or soft at the extremities. This should be performed in early spring. During winter a few inches thick of coal ashes laid over the roots will be beneficial in keeping the roots warm. The plant may be had at most nurseries noted for trees and shrubs.

Fortune's Double Clematis (C. Fortunei); flowers white and sweetly scented.

Hardy Flower Roots—These meet with a ready sale all through the spring months, and amongst them none are more popular than double red and white Daisies. These are treated as follows:—In the month of May the old stock roots are taken up and divided into single crowns, which are immediately planted with a dibber about 6 in. or 8 in. apart, on light, well dug and manured land, and if the weather is dry one or two good soakings of water are given them. They soon strike root when they are kept well hoed and clear of weeds, all straggling blossoms that may appear being pinched off. In August they are again taken up and parted, and replanted as before in a warm, sunny situation; if a little sheltered from cold winds so much the better. In this position during February, March, and April, they will be in perfection, and are then taken up as required, with as much earth as possible adhering to their roots. They are then packed in single layers in fish boxes, which hold about three or four dozen roots each, and in this manner they are sold, the average wholesale price being from 4d. to 6d. per dozen roots. These seem small sums, but such plants can be grown so close together that the quantity to be produced on, say, an acre of land is enormous. There is a pretty variegated kind called by some the Aucuba-leaved Daisy, which makes a good edging for a border, and is well worth growing.

Mignonette in the Garden.—Mignonette is a most capricious plant, in some gardens growing like a weed, in others refusing to grow at all. "Mark" may succeed by sowing his seed in pots—soil rather poor and gravelly; and when the seedlings are a fair size, plunging the pots wherever he wishes a clump of Mignonette. Transplanting never answers.—A. B. C.

GLASSHOUSES & FRAMES.

PELARGONIUMS FOR WINTER.

Those of the Tom Thumb type are the best for forcing; for, though their trusses are not large they answer better for bouquets than larger ones. Christine, too, is useful, and of a favourite and showy colour. These, with a few white varieties, and one or two intermediate shades, will be found useful for furnishing blooms in winter. As a rule, those kinds which flower freely out-of-doors will be found to be best for forcing, and I always select a number of plants for the purpose when we have done bedding. Some of the new ones of Pearson and Denny have fine trusses, but all do not flower freely in winter, though excellent for autumn decoration. However, it is safe to have as good a stock of plants of different kinds as may be found convenient; but none will flower well in mid-winter if they have not been prepared for it. The plants may be selected and potted about this season. Six-inch pots are a proper size for them, and they should be well drained. Use a good loam, with a little leaf-mould, or peat and sand, and pot the plants moderately firm, particularly under the roots, and afterwards plunge them out-of-doors in ashes in a sunny situation. During the summer let them be liberally watered now and then with liquid manure, not too strong. Those shoots that are leading too much only need be stopped; but if the plants grow pretty regularly in shape, it will only be necessary to keep the flower buds picked off constantly till about the middle of October. By this time the pots will be filled with roots like a Strawberry pot, the wood well matured, and every shoot disposed to flower. No plants should now be transferred to the house; a dry, airy greenhouse or vinery is a good place, and they may be allowed to come into flower by the time flower buds are over, or to succeed the autumn-flowering stock. As winter advances, however, an ordinary greenhouse temperature of from 45° to 50° will be too low for them. The Pelargonium must have heat and light to bring the flowers out successfully. A back shelf of an early Vinery will suit them, and while they are kept freely watered at the root, syringing overhead must be avoided when damping the Vines. Forcing during the dead of winter is sluggish at the best, however, and the secret is to have plenty of plants in moderate-sized pots, and force as many as can be accommodated, according to the demand for flowers. For use in February, March, and April I have sometimes depended entirely on old plants lifted from the beds in November, or before they got frosted. Big plants of Christine and other compact-growing sorts produce an excellent display in spring, and afford plenty of cutting. When taken up in autumn, however, the branches must not be cut back. The plants, if very large, may be reduced in circumference, but no shortening of the shoots which are left should be allowed, or they will not flower so soon or so well. I lift them, and squeeze them into as small pots as possible—generally 5-inch or 6-inch—and put the plants into a smart heat to get rooted. This accomplished, they are stored in the cool, dry houses, where they get hardened a little, and we draw off the stock as required. Christine is particularly useful in this way; it is a variety that comes in rapidly when it does flower, and I can assure your readers there are few plants which light up a conservatory more effectively in spring, when a number of large plants are placed among the other specimens all over the house; and no kind of decoration is more easily kept up. J. S.

Bougainvill . glabra.—This, grown as a pot plant, is highly ornamental, and conforms readily to almost any kind of training, as it may be grown in the loose pyramidal form or on trellises. The former, however, suits its habit best, and shows off its rich mauve-coloured bracts to the greatest advantage; but to get them in this shape they must be grown from the first much in the same way as a well-managed Fuchsia, in order that they may be thoroughly furnished with side branches. Before starting them into growth these should be pruned back to a single bud, and those that are misplaced or superfluous should be thinned out, to allow plenty of room for the new growth. If placed where they can have plenty of light and full exposure to the sun, they make firm, short-jointed shoots from 1 ft. to 2 ft. long, laden with bloo

When in this condition, few plants are more valuable or effective for conservatory decoration, where, if properly hardened before being placed in a cool temperature, they will last at least two months in good condition, and their flowers will come much brighter coloured than if subjected to a closer and warmer atmosphere. Bougainvillea glabra flowers freely in a small state, and cuttings put in now will, if grown freely on during the summer, make useful plants for next season. Any of these that are planted out, or in large pots where they are making much growth, should have the weakest shoots thinned out, that the necessary light and air may be admitted to the others to induce plenty of bloom. As a pillar or roof plant in warm conservatories, it is most valuable, provided it can be planted in a light sunny position. To check the exuberant growth these plants invariably make unless their roots are confined to a very limited space, they should only be afforded sufficient water to keep them from flagging severely, a course of treatment that has a very beneficial effect on them.

Fuchsia Sunray.—This is among Fuchsias what Mrs. Pollock was among Geraniums when it first came out. It is a free-growing neat-habited Fuchsia, furnishing well as it grows, and naturally forming a pyramid if not pushed too much in heat. The leaves are broad, regularly and distinctly splashed with creamy-white and green, suffused with crimson, especially at the points of the young shoots, a circumstance which gives the plant a distinct and highly ornamental appearance. The variegation is constant, and the different shades are more distinctly produced when the plant is grown in the greenhouse, and well exposed to the light, than elsewhere. Generous treatment and a good soil increase the size of the leaves without affecting the variegation, and, as the flowers are unimportant, it is best to pick them off, as they only weaken the shoots. Cuttings of this variety strike freely in the usual way, and should be potted off singly; small plants, about 1 ft. high, look best, and are most useful.—C.

Violets in Pots.—The possession of such varieties of Violets as the Czar and the new Victoria Regina gives quite a new aspect to the culture of Violets in pots. The old Neapolitan, though likely to hold its own against all comers as regards sweetness and free flowering habit, was hardly adapted for pot culture; it thrives in a bed of good soil in a frame, but in pots it is apt to become somewhat shabby, being subject to red spider, and a weak grower, a great drawback to pot plants of any kind. With the varieties of the Czar type it is, however, different; they have robust, bold, and erect foliage, which fills and looks well in a pot, and they are sure bloomers, and throw their flowers up well above the leaves, stand forcing better, and bloom in great profusion. I have just lifted a quantity of last year's roots of the Czar and Victoria Regina, sub-divided them, using both the old crowns split up and rooted runners, and potted them in 5-in. pots in good light rich soil, and hope to have them in flower early in the winter without much forcing. I used to content myself with lifting the roots out of the ground and forcing them at once; but, like Strawberry plants, prepared ones succeed best. The plants should be plunged in ashes during the summer, or at least set thickly together—to keep each others' roots cool—in a rather shady situation. They should never be exposed to the full force of the mid-day sun, and should at all times receive plenty of water at the roots. Before the weather becomes so severe in autumn as to injure the foliage, the plants should be moved into a cool frame (fi[illegible]eat will hardly be needed), and from such quarters they can be introduced into the greenhouse or conservatory as required, when they will continue to produce flowers for a long period if they be properly attended to, and, above everything, kept near the light.—S.

Renovating Lawns.—It is astonishing how long a lawn will retain its verdure without assistance in the way of manure. But a starved sward is never a green one, and greenness and freshness are everything in a lawn; and upon the whole it is not difficult to keep it in that condition, for, however neglected it may have been, it quickly responds to stimulating treatment. The best and most convenient plan is to apply artificial manure of some kind in the form of a top-dressing. Guano is good, but it does not produce the greenest verdure; soot surpasses it in that respect, and it is cheaper. It is not needful to top-dress the lawn annually, and when necessary most gardens should provide the materials. If all combustible rubbish in the way of prunings of trees, rakings of shrubberies, &c., be collected into a heap, they will serve not only to consume themselves, if set fire to, and produce a good quantity of wood ashes, but will reduce to ashes all the short Grass that has come off the lawn, weeds, roots and other rubbish, and at the same time burn a considerable quantity of soil, which may with advantage be mixed with the ashes and the whole applied to the lawn as a top-dressing. There is hardly anything better than this for Grass, and its effects are more lasting than guano or soot alone, and it may be applied without fear of injury. Should the lawn be mossy, it should be well harrowed with a rake first, and then cleaned and dressed.—C.

American Senna (Cassia marilandica).—This is a showy hardy plant, and its distinctive characteristics render it suitable for the herbaceous border. It grows from 3 ft. to 4 ft. in height, and produces abundance of bright yellow flowers in clusters. It is an attractive plant, and has been apparently overlooked, as it is rarely seen in catalogues, and consequently would be very scarce in private gardens. The leaves are sometimes used as a substitute for the common Senna, but the true drug is procured from Cassia orientalis.—P.

The American Senna Plant (Cassia marilandica); a hardy plant, flowers yellow.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

May 31.—Sowing Snowball and American Red-top Turnips among Currant bushes; planting White Cape, Walcheren, Hammond's White, and Grange's Cauliflower; also Backhouse's White, Dilcock's Bride, Knight's Protecting, Reliance, and Cornish Broccoli; plunging pot Roses in the sun, in order to get their wood well ripened; mulching Strawberries and Raspberries; earthing-up Potatoes, Peas, and Cauliflowers; syringing Azaleas infested with Thrips with Gishurst compound; manuring and digging land for winter Greens; tying Bath Cos Lettuce; thinning Leeks; watering main crops of Strawberries, and afterwards netting them; also thinning Beetroot, and hoeing among Globe Artichokes; sowing Canadian Wonder French Beans; potting off seedling Petunias; planting out dwarf crimson Celery.

June 1.—Sowing Calceolarias, Cinerarias, and Primulas; potting on Balsams and Fuchsias; pricking off Cauliflower plants; turning over gravel walks to give them a fresh appearance; cutting turf for layering Strawberries; looking over Cucumbers and Melons, stopping them, and fertilising them when required; giving all inside Vine borders where the Grapes are swelling a good soaking of guano water; cutting dead branches out of Apricot trees, and spreading out those left to give them a better appearance; shifting established Petunias into their flowering pots; planting Scotch Kale, Cottager's Kale, Brussels Sprouts, Savoys, and Autumn Cabbages; also May-sown Lettuce; putting in cuttings of Anne Boleyn Pinks under hand-lights; top-dressing pot Roses with horse-manure and loam, mixed together in equal quantities; cutting Laurels, and edging and raking flower beds and borders; sticking Scarlet Runners and Peas, and hoeing between rows of Parsley.

June 2.—Sowing Giant White Cos and All the Year Round Lettuce; also early white Naples Onions for drawing young; planting Brussels Sprouts, Savoys, and Cauliflower plants; looking over Peach and Nectarine trees, picking off curled-leaved, and washing the trees with the garden engine; clearing off Spinach and getting the ground dug up and manured for winter Greens; weeding and hoeing amongst all growing crops; potting Caladiums, Panicums, and Alternantheras for dinner-table decoration; also potting Ten-week Stocks and Asters, and shifting standard Heliotropes into 12-in. pots for conservatory decoration during the autumn; sowing Broad Beans amongst Currant bushes; planting Black Hamburgh and Muscat of Alexandria Vines; pricking out Wall flowers; turning and watering manure for Melon and Cucumber beds; staking Carnations, Pinks, Dahlias, and annuals; watering early Peach house and exposing the fruits which are ripening to the full influence of the sun, leaving more air on the house night and day; plunging Tuberoses that are coming into flower in pits; raking round Rose trees and preparing more land for late Peas.

June 3.—Shifting large Cockscombs into their flowering-pots; planting vegetable Marrows and Tomatoes; layering Keen's Seedling and Garibaldi Strawberries in 4-in. pots; putting in cuttings of Kalosanthes, double Wallflowers, and Salvia splendens; staking Heliotropes; hoeing among Gooseberry and Currant trees; also between Raspberries; sticking more Peas, Beans, and Scarlet Runners; watering flower garden thoroughly where the soil has become dry; pegging down all plants that require it; thinning Plums, Peaches, and Nectarines where not already done, and nailing in the longest of the shoots; sowing Chervil, Radishes, and Mustard and Cress; potting off Tomatoes struck from cuttings; thinning out and transplanting Parsley; also Spinach and Turnips; commencing layering Vicomtesse Héricart de Thury Strawberries on pieces of turf 4 in. square; looking over Vineries, stopping the laterals, and thinning the berries where required; getting the netting put over late Strawberries; looking over Apricot trees for snails and grubs; gathering Gooseberries for bottling.

June 4.—Taking up Chrysanthemums from open ground and potting them for conservatory decoration, and shifting Globe Amarantus into 10-in. pots; sowing Radishes, Lettuces, and Mustard and Cress; planting Cauliflowers in heavily-manured trenches; putting in cuttings of Begonias and other fine-foliaged plants; thinning Onions and Turnips; earthing-up Cucumbers; clipping Yew trees, and weeding and hoeing old Asparagus-beds; washing Camellias, in order to free them from black fly; sowing Turnips and Spinach; planting out Sweet Basil on a south border; thinning out late-sown Beet and Salsafy; commencing clipping Box edgings; putting Camellias and other greenhouse plants out under north walls; nailing in the leading shoots of Plum and Cherry trees, and washing them well with Quassia water to kill green fly; earthing-up late-planted Potatoes.

June 5.—Tying down the leaders of Cordon Apple trees; getting out trenches for the late crops of Peas; also trenches for Celery, and getting the manure into them; commencing planting out tender carpet bedding plants; potting a few Roses into 12-in. pots, and shifting latest-struck Chrysanthemums into larger pots; sowing Neapolitan and Drumhead Cabbage Lettuces; also Paris Green and White Cos; planting April-sown Cabbages and Cauliflowers; also Ice-plants and gourds; pricking off seedling Primulas and placing them in a cool frame; dusting soot and lime on Onion beds, with a view to keep down the maggot and improve the health of the plants; thinning Apricots a second time; watering orchard-house trees, also Strawberry-bed; picking insects off wall fruit trees, and afterwards syringing them with soft water.

Glasshouses.

Cool Orchids.—For the next two months or so the advantages of having a house less fully exposed to the direct action of the sun than when facing the south, or a span-roofed erection standing in the usual position, will be apparent, as most of the plants thrive better with less heat than is all but unavoidably present in houses thus under the influence of the sun, on which latter it will frequently be requisite to use blinds somewhat thicker than would be otherwise advisable, but where this becomes a necessity they must never be drawn down when they can be dispensed with. Such species as Masdevallias will now require a maximum of water, whilst Odontoglossums and allied species will need the material in which their roots are placed kept fairly moist. The plants will be better for air, more or less, being admitted to the house night and day.

Pelargoniums and Fuchsias.—Those large-flowered Pelargoniums that were some time ago recommended to have the points of their shoots pinched out, so as to induce their flowering after the earlier bloomers were over, should now have weak manure water given them twice a week; if neglected in this respect the lower leaves will assume a sickly yellow condition, and the flowering be proportionately deficient. Fuchsias struck from cuttings in the spring, and required to bloom late in the summer,

should again have the points of their shoots pinched out, and any flower-buds they may have formed picked off; neither must they have their roots confined in too small pots, as this, more than any other cause, will stop their growth and induce them to form flowers sooner than they are required. The earlier plants that are now blooming should have all seed-pods picked off as soon as the flowers have dropped, as the production of seeds is more exhausting to Fuchsias than flower-bearing. Give them liquid manure every other time they are watered, but it must be in a highly-diluted state, as if given them so strong as many plants will bear it causes the flower-buds to drop off. A free use of the syringe two or three times a week will keep red spider in check.

Flower Garden.

The principal operation connected with this department, viz., that of planting the various beds, borders, baskets, and vases with their summer occupants, should now in most cases be finished; and it is more than ever necessary that order and neatness should be maintained. Lawns at this season are often much disfigured by Daisies; and during dry weather, when Grass does not grow very rapidly, the Daisy rake will be found very useful. Plantains and other broad-leaved weeds should now be eradicated, if possible; and this may be done by cutting their heads off with a sharp knife, just under the surface of the soil, when they may be drawn out, and the space they occupied will be taken possession of by the finer Grasses of which the lawn should consist. Box edgings should now be cut. It is seldom advisable to do this sooner than about the present time, as the slightest frost occurring soon after the operation has been performed will inflict so much injury upon them as to make them look unsightly for some time afterwards. Bulbs of Hyacinths and Tulips may now be taken up and stored away. Peg down the shoots and regulate the development of such plants as Verbenas and Petunias, in order to get the surface of the beds covered as speedily as possible, when less water will be necessary than at present. Regulate also the growth of climbing Roses, Honeysuckles, the new and beautiful Clematises, all of which are worthy of a place in every flower garden. Where a stock of the various kinds of spring bedding plants was not divided or otherwise increased when taken from the beds, that may be done now, or as soon after this time as possible. Such kinds as the following may be divided, if desirable, to an almost unlimited extent, viz., Viola cornuta and lutea, Aubrietia deltoidea, deltoidea variegata, Campbelli, greca, &c.; Myosotis dissitiflora, Omphalodes verna, Phlox verna, Gentians, Hepaticas, hardy Primroses, Oxlips, &c. The two last-named will now be out of flower; but the best varieties should have been marked, and should now be increased accordingly. All these, together with the various double and single Wallflowers, should have what little attention they may require in the reserve garden, which is also the proper place to test, during the first season, the numerous novelties in the way of bedding plants which are annually introduced, and which are generally sent out in the form of very small plants in May. As soon as they are received they should be re-potted, and have every necessary attention; and, where they have been well treated, such plants will now be sufficiently established to be planted out in this department, in order that they may furnish cuttings at as early a period as possible.

Auriculas.—It is now too late to save seed, but those who have any should sow it at once, and thus a season may be gained. Sow it in pots or pans, and in either case drain well, placing some Moss or fibre over the drainage, to prevent the compost from mixing with it. This is quite necessary, as the seeds will not all vegetate for a whole year. The soil should consist of sandy loam and leaf-mould, with sand added if necessary. Make the compost quite level on the surface, and sow thinly, just covering the seeds with fine soil. The pots should be plunged in a very gentle bottom-heat and be covered with a Cucumber frame or hand-light. With the warmer weather which we are now experiencing, considerable attention must be paid to watering and keeping green fly in check, for if it increases it will seriously cripple the plants.

Carnations and Picotees.—Plants of these in pots are now all out in the open air, and, for the present they require no more attention than seeing that they are freely supplied with water at the roots, that is, those plants that show by strong growth that there there is also a corresponding root action. A few varieties make but little growth; and unless water be very judiciously supplied to them they will speedily cease to exist. If the weather be very hot, let the plants be syringed freely at 5 p.m. The surface of the beds planted with Carnations &c., should now be stirred, and a little fresh dressing applied; equal parts of loam and rotten manure answer well for this purpose.

Phloxes.—Amongst all tall-growing hardy herbaceons plants, none are so effective as decorative objects in pots as these. They now require a good deal of attention. See that the stems are secured to sticks, and if the pots are well filled with roots, some rich dressing must be placed on the surface of the soil. Give plenty of water, never allowing the pots to become quite dry. Fully expose the plants to the sun, and if the pots are plunged in Cocoanut fibre refuse, or some similar material, less water will be required.

Pentstemons, Pyrethrums, Aquilegias, and several other hardy herbaceous plants do remarkably well in pots, and are all useful when in flower as decorative plants for the greenhouse. The treatment which they require is much the same as that described above for Phloxes.

Polyanthuses.—Those who have their plants still in pots would do well to place them out-of-doors in the open border. Turn them carefully out of their pots, and plant them without breaking the ball of earth. Ours are already well-established, and are making an excellent growth, showing that they have laid hold of the rich new loam provided for them. Examine the leaves, and if they are infested with red spider this pest must be destroyed, or else it will ruin the plants. Wash the leaves with soapy water. Green fly is also fond of the Polyanthus, and must be removed in the same way.

Outdoor Roses.—Those possessing even small collections of outdoor Roses, if they have through the spring taken means to destroy aphides and the Rose maggot, will reap the benefit of the comparatively little labour required by a good display of early flowers; whereas in the absence of such attention, the whole of the growth, both leaves, shoots, and flowers, is so smothered with these insects as to prevent the possibility of well-developed bloom. Where Roses have been neglected, unless immediate means are taken to destroy the aphides now existing, and also the broods of those that will come successionally into life, it is futile to expect a satisfactory autumn bloom. In the cultivation of Roses, more than most plants, those who give the requisite attention to even a moderate number realise very much more pleasure from the results of their labour than where a greater quantity are grown, yet do not receive sufficient attention at the critical time when the young growth is beset by these pests, which are inseparable from the cultivation of Roses.

Fruit.

Vines.—The thinning of late Grapes should not be deferred a moment after they are ready, as growth goes on so rapidly that they soon get too large to admit of expeditious or neat thinning. The lateral growths on Lady Downes are now produced so rapidly, that unless repressed by stopping once a week, they become a complete thicket, and when cut off a check to the Vines must necessarily be the result, and as a matter of course the crop is more or less injured. Houses in which the Grapes are commencing their second swelling should be shut up very early with an atmosphere well charged with moisture, and if the borders are inside, well soak them with manure water, and as this should be the last application of manure, it may be applied rather stronger than heretofore. Houses containing ripe fruit should be kept as cool as possible compatible with the preservation and health of the foliage. All lateral growth should be persistently stopped, but the leading shoot on each Vine should be allowed to ramble at will.

Kitchen Garden.

Parsnips, Early Carrots, Turnips, Leeks, and Onions are some of the seedlings that now need thinning, after which, deeply stir the soil between the rows to induce a quicker and more vigorous growth. Peas suffer from overseeding as much as anything. When the haulms are 2 in. or 3 in. apart they bear pods to the very bottom, which obviously would not be the case were they clustered together. Earth up and stake such as need support, and sow for succession such kinds as British Queen, Veitch's Perfection, and Champion of England. If sown in shallow trenches, waterings and mulchings (both requisite in warm dry weather) will be the more effectual. The principal crop of Runner Beans should now be sown; 6 in. apart in the row will be quite near enough for these, and if the points be pinched out when 2 ft. high, that will ensure the production of pods from the very bottom of the haulm. Earth up Potatoes. If high culture be aimed at, strew between the rows guano or soot; stir deeply with a fork, and, after a good rain, earth up. The haulm should be thinned out to single or, at most, double shoots, and then, though the tubers may not be quite so numerous, they will be finer and of a more equable size. Top Broad Beans, in order to induce earlier formation of pods, and to prevent an attack of black aphis, which invariably takes possession of the tops of these whenever the season is favourable to their development. Unless Broad Beans be in special request, no more should be sown, as at the time when they would be ready there will be abundance of better vegetables. As ground becomes vacant, prepare and re-crop it with Coleworts, Cauliflowers, Early Broccoli, Brussels Sprouts, and Savoys; the two latter will stand the severest winter, and should therefore be planted in quantity. Early Broccoli and Cauliflowers continue in use a limited time only, so these should be planted successionally, and only in such numbers as will meet the demand. Established plantations of Horseradish, Seakale, and Rhubarb that are throwing up flower stems should have them cut off, and the ground receive its summer mulching of manure. Weeds may be kept down on Asparagus plots, and at the same time the roots benefited by an occasional light sprinkling of salt. Sow Lettuce where it is to stand, and thin out the plants to 9 in. apart. Tomatoes, ridge Cucumbers, and plants of similar hardiness may now be planted. During favourable weather keep the hoes going, in order to keep down weeds, which, now that rain has come, will grow apace.

IMPROVED FLOWER GARDENING.

THERE has been some discussion on this subject in *The Garden*, which, as it is fairly summarised in the following letter, with rejoinder in italics, we reproduce. Mr. Grieve is the advocate of bedding-out; while "Justicia" holds that all the beautiful hardy plants should be represented, not necessarily in the way bedding plants generally are, in parterres in front of the house, but in groups, beds, and positions suited to them; in fact, growing them where they would look and do best, and without striving to conform them to any pattern of beds. He also holds that the result obtained already in the parterres is as inartistic as it is geometrical. He objects to the annual planting of a number of tender plants, as being very expensive and leading to all the force and means of the garden being given to produce a temporary result. He holds that, as a system, all good gardening must be managed in an entirely different way—the main efforts and the skill being spent on forming permanent and well-considered arrangements of hardy subjects, and that what is called "bedding-out" is, in proportion to this aim, deserving of minor attention:—

Your correspondent speaks "of the little bits of feeble spring bedding which one sees here and there." In various parts of the country, however, such as at Belvoir Castle, Heckfield, and various other places which could be named, such attempts, according to all accounts, are far from being feeble. [*Spring bedding, as usually carried out, is more refined in colour than summer bedding, and good, as being carried out with hardy subjects. But it gives nothing equal to the beautiful effects that may be secured by grouping hardy flowers in natural and artistic ways. It, moreover, involves the costly, yearly or twice-a-year labour which I have often shown is a huge waste in summer bedding. Spring bedding is also geo-*

metrical; the best spring gardening need never be so.—J.] But neither spring nor summer bedding need in any degree be considered as antagonistic to the planting of permanent and artistic groups of hardy flowering plants in suitable situations; while much may, no doubt, be done in the way of supplementing such groups by the annual addition of bulbs in spring and tender plants during the summer months. [*Every kind of bedding-out is antagonistic in all ways to true gardening, because its insatiable maw absorbs year after year fruitlessly the means (often most ample) that ought to be devoted to adding to the beauty, the riches, and the lasting embellishment of the garden.—J.*]

It will in no degree increase the popularity of any other system of decoration to merely condemn its rival—if rival indeed it be, which I am inclined to deny, as, generally speaking, there is room enough in most establishments for all systems should they be desired. [*That other things than bedding-stuff should find a place is what I have asked for all along. But can any one seriously say that the planting of, say,* 70,000 *tender plants in May to perish in October does not interfere with the planting on a scale befitting the merits of the hundreds of lovely hardy flowers, bulbs, flowering-shrubs, &c., that do not perish in October, but live for many years?—J.*] "Justicia" further says that I "will not admit, or do not know, that many lovely hardy plants bloom in the prime of summer." Now, the first part of this sentence I have never refused to admit; and as to the latter, I know perfectly well that such is the case; and I also know that the loveliest of them retain their beauty for only a very short time; and this is precisely the reason which compels those who practise summer bedding to reluctantly decline their use. "Justicia" also says "that if I go to any good collection of herbaceous plants round London in the warmest summer I would find as many as I could enjoy in one day." This I do not in the least doubt; and I might not unlikely be so enamoured of their beauty as to be induced to repeat my visit to them in the course of a week or so, when I would probably in too many instances find the beauty of many of my favourites sadly on the wane. [*Daffodils bloom over a period of ten to twelve weeks; Lilies of different kinds for four months or more; Irises are lovely for nearly two months, without counting the very early ones; Delphiniums bloom for a long time, and give a good second bloom if treated properly, as do Pyrethrums, Globe-flowers, and other plants. Numbers of hardy plants bloom for a considerable time, and are beautiful in the bud stage as well. And what to Mr. Grieve is a demerit—not flowering in a stereotyped manner throughout the summer—is to other lovers of Nature one of the greatest charms belonging to flowers. As the Cuckoo-flower succeeds the Wood Anemone, so is it delightful to see the garden flowers pass one after another in their seasons.—J.*] I am perfectly aware of the great wealth and beauty of the hardy flora of temperate regions; and the gardens of this country are still being enriched by valuable introductions, possibly not more rapidly than is desirable. Extensive, although not always very select, collections of these plants existed, however, in this country long before the advent of the bedding-out system. As has been said, this collection of plants was more comprehensive than select, and contained many plants which might possibly have been interesting to a botanist, but which the most enthusiastic admirer of the flora of temperate regions would hardly have ventured to pronounce decorative or at all ornamental; and these were the plants, viz., coarse and terribly tall Asters, Epilobiums, 5-ft. Solidagos, &c., which the bedding-out system has driven from the garden. And I think most of your readers who may have known them will say that it served them right, as they had no business to be there; and "Selection, not collection," is now, and ought to be, the motto of the flower gardener. [*Mr. Grieve does not say a word here of the hundreds of lovely plants which were driven out and kept out by the same system. To many of these his best bedding plants were as showy weeds—devoid of associations, form, or fragrance. The hardy Lilies alone are worth the whole lot, not to speak of catalogues of other beautiful flowers, too long excluded by a system false to Nature and art, and opposed to every true interest of the garden.—J.*] In a former communication upon this subject, I think I disapproved of attempting to carry out two distinct systems of bedding—viz., that of spring and summer in the same set of beds; although this is done, and well done too, in some establishments, but it demands much labour, and is seldom satisfactory, the one system seriously interfering with the other. There is nothing, however, to prevent the site of the summer flower garden assuming during winter the character of an arboreal garden, the beds being furnished with hardy trees and shrubs with ornamental foliage and graceful habit of growth, which is all that can be reasonably expected or desired as an out-of-doors winter garden in this country. In many establishments this system is to some extent practised, and will no doubt ere long become general. An excellent example, which ought to prove a powerful stimulus to the same, was exhibited at South Kensington, on the 14th of last October, by Messrs. Lee, of Hammersmith. This consisted of a beautifully arranged geometric garden, the beds of which were furnished with small hardy plants of distinctively coloured leafage, and margined with dwarf Box or the green-leaved Euonymus microphyllus, the whole being relieved by pyramidal plants of Cupressus Lawsoniana argentea, Taxus fastigiata aurea, &c., together with standard variegated Ivies, standard Aucubas (bearing bright red ripe berries), and many other beautiful and interesting plants, well suited to the purpose in view. [*Here again we have geometry and endless labour. Who that has the true spirit of the gardener within him, and has eyes to see the many gardens beautiful at all seasons without such complications, can contemplate without dread this twice-a-year transferring of a number of hardy young trees and shrubs, and providing a place for them in the meantime? Just imagine what could be done for permanent good in beautiful planting with the means necessary to carry out such costly "arboreal gardening" as this! And, granting that people are rich enough to do it, what then? Why, probably in a neighbouring rectory garden, where no such nursery-like moving about of the poor shrubs was ever thought of, we should find a real "arboreal garden" on the turf, far beyond the highest triumphs of the bedder-out of shrubs.—J.*]

A few words more and I have done with the subject of summer bedding, which, with all its shortcomings, I believe to have had very much to do with the fostering of a love for flowers among all classes of the community to an extent which certainly did not previously exist. The humblest cottager now carefully preserves his zonal Pelargoniums, Fuchsias, &c., as window plants during winter, with the view of their decorating his little front garden when summer again returns. And this preservation is often accomplished at the expense of considerable trouble, such as their nightly removal from the windows to places of greater safety. With a view of securing their vitality, I have even heard of their being placed upon the warm hob, an act of mistaken kindness which would doubtless prove too much for them. Many people, too, of limited means have been induced to erect a greenhouse or glass structure of some kind, which even the repeal of the duty on glass would hardly have tempted them to do, had it not been the desire for the means of preserving their bedding plants during winter.

P. Grieve.

[*Of all Mr. Grieve's reasons for bedding, the last is the most amusing, if not the strongest. Imagine the unhappy descendant of the owners of our once lovely cottage gardens—bright with Daffodils, Roses, Pansies, Pinks, and double Primroses, and other plants that, like himself, did not much regard the cold breeze—being obliged to carry a miserable bedding plant to a "warm hob" with the view of "securing its vitality"! I remember once speaking to the late Mr. Mowbray Morris, for a long time the able manager of the "Times" newspaper, about this very subject, and, in the course of conversation, he said to me, "With all the expense and skill bestowed upon your modern flower garden, you have produced nothing half so pretty as an old-fashioned cottage garden." This is the simple truth. But he did not refer to the cottage garden planted by sticking scarlet Pelargoniums, &c., into the raw earth three months after the real cottage garden begins to be bright with blossoms.—Justicia.*]

Method of packing cuttings.

Cuttings by Post.—What are known as soft-wooded cuttings—that is, cuttings of such plants as Fuchsias, Verbenas, Pelargoniums, Dahlias, and other popular florists' flowers—are often sent through the post in spring at a few hours notice, and the best mode of packing for such journeys may be worth attention, in order that the cuttings may arrive fresh and ready for inserting in sandy soil, or in a bed or pot of moist heated sawdust surfaced with sand, at once, with a sure knowledge that they will strike root and grow. There are several ways of packing cuttings for carriage by post, but that here represented has much to recommend it. In this case the newly-cut slips or branches are laid on a bit of fresh living Moss, moistened in water, and squeezed partially dry; the whole is then encased neatly in a piece of sheet lead or tinfoil, which retains its position without tying, and prevents the Moss from becoming dry through evaporation. For packing in large boxes only the lower half of the cuttings need be enveloped, as shown in our engraving; but, if only one little bundle is to be sent, use more Moss and envelope the cuttings entirely, both in that and in the tinfoil. A small tin or lightly made wooden box is admirably adapted for "mailing" cuttings. Such boxes are generally sufficiently strong to resist crushing or jamming on the journey. Bundles of cuttings packed in damp Moss, enveloped in sheet india-rubber, and finally wrapped in two or three folds of stout brown paper, also travel safely. In cases where a few cuttings have to be carried home in the hand, nothing beats Moss and brown paper as packing material.—B.

To Destroy Slugs.—On a damp evening lay heaps of brewers' grains, a handful in each, where the slugs resort, and visit them after 9 p.m. with a flour-dredger full of fresh dry slaked lime, and dust a little over the slugs found. From twenty to fifty have been killed on one heap in this way among Broccoli plants this year.—W. H. G.

Slugs in Frames.—If those who have Melon or Cucumber frames infested with vermin would procure a couple of toads and place in each frame they would find all vermin quickly destroyed. The toads are quite harmless, both to man and plants, and only require something to shelter them from the fierce sun of summer. They can stand any amount of heat, and are ever on the watch for worms and insects.—Geo. Came.

House and Window Gardening.

Palms in Rooms.—To preserve these in health, strict attention to cleanliness and careful watering is necessary. Every leaf should be sponged twice a weak with tepid water, well washing both the upper and under surfaces of the leaves. Water only when dry, and then give enough to thoroughly moisten the soil. The Thrinax is not such a vigorous-rooted subject as many Palms. If it receives an overdose of water, the fibres will certainly die. When once a Palm loses its leaf beauty, it is a difficult matter to restore it. We would prefer to replace it with another healthy specimen. —J. C. B.

Variegated Abutilons as Window Plants.—Among these the somewhat common A. Thompsoni is still one of the best for culture in windows. The slender and erect habit of the plant necessitates its culture in small pots, and frequent stopping of the shoots, so as to have plants about 6 in. or 1 ft. in height, furnished with leaves to the bottom. For side plants for table decoration these small Abutilons are admirably adapted, and the variegation is of a striking kind under artificial light. Still neater in habit, and more profusely and constantly variegated, is the narrow, angular-leaved A. vexillarium, which also grows slower and retains its leaves better. It is an excellent edging plant for large vases, and associates well with Maiden-hair and other Ferns in such positions. Cuttings made of the tops strike readily, and if a slender stake is put to the shoot—for it keeps to one shoot as a rule—it forms one of the neatest little plants that could be desired, and a quantity of it sprinkled throughout the greenhouse gives quite a lively aspect at any season, for it can be had all the year round. I keep all my plants in 3-in. pots, chiefly in order that they may fit into small vases; but it—and, indeed, the other kinds as well—belongs to that class of plants which will bear turning out of their pots for a few days when required without much injury. Among other ornamental-leaved Abutilons may be mentioned A. tessellatum and A. variegatum. They all strike easily from cuttings, and thrive in a compost of loam, leaf-mould, and sand.—C.

Myrtles as Window Plants.—Perhaps Myrtles have become old-fashioned; at any rate, I do not think they are so commonly grown as they were years ago. To my mind they are—whether in flower or not—always beautiful, and the aromatic perfume given off by their foliage is at all times grateful and refreshing. Under even the most ordinary management they rarely get out of health, and they may be grown for years in the same-sized pots. The Myrtle is pre-eminently a cottager's plant, and when it gains a footing in a village or neighbourhood it travels from house to house in the shape of slips, until nearly every cottage window is furnished with a Myrtle. I have occasionally come across quiet back streets, mostly inhabited by working men and small shop-keepers, where Myrtle Grove or Myrtle Place would be an appropriate title, so numerous were they. I have one such neighbourhood in my mind's eye at this moment; for two years I generally passed through it several times a day, and I made the acquaintance of every Myrtle in the place, from the small stripling that was growing in the same pot with its parent to the giant, 6 ft. high, that had to be placed in the back yard all the summer, and which cost almost as much care and anxiety in keeping through the winter as if it were really a member of the family; and I never now see a Myrtle in a cottage window without looking upon it as an index to the comfort and cleanliness within. Myrtles are very easily propagated; pieces of half-ripened wood, firm at the base, taken off at the heel and inserted in a pot of firm sandy soil, will root almost anywhere in a shady place. There is, of course, a certain degree of fitness in connection with everything, and plants that have made their growth in a low temperature are best propagated in a structure without much artificial heat. However, getting up a stock of Myrtles is so easy a matter that one need not refer to it at greater length. There are several varieties of the common or broad-leaved Myrtle, and I think two varieties of the narrow or small-leaved kind. There is also a variegated form that might be grown where variety is sought. In Ireland, and some of the milder parts of England, they will stand the winter in the open air, but, should the season be more than usually severe they are likely to suffer to a great extent, unless placed in a very sheltered position.—H. E.

Thrift on a London Window-sill.—I bought a very small tuft of wild Thrift from a mountain in the Snowdon region in North Wales about four years ago, and planted it on my return to London in a Mignonette box at a bedroom window in a north aspect, where it gets neither its bright mountain light nor its pure air, nor a single gleam of sunshine at any time of the day; and yet it has survived four London winters, with their smoke and smuts, without injury—the Grass-like leaves shining healthily in their bright dark green, and each year throwing up flowers in profusion. It has become a fine large tuft, and has twenty-three flowers in full beauty at the present moment. I know of no other plant that would defy London smoke and a dark north aspect with anything like the same degree of hardihood.—H. N.

COLUMBINES.

The Aquilegias, or Columbines, as they are called, constitute a very interesting and beautiful genus of hardy herbaceous plants. They are easily cultivated, and their graceful foliage and handsome flowers amply repay any attention that may be bestowed on them. Aquilegia vulgaris, the best known species, or some of its many varieties, is that universally cultivated in cottage gardens. There are single and double forms of it in many colours; but most frequently they are purple, reddish-purple, and rose coloured. The pure white variety of it, with large flowers and elegant pale green glaucous foliage is the best. Columbines are very easily raised from seeds, and any particular variety may be increased by dividing the roots. They all succeed perfectly in any ordinary garden soil. The annexed woodcut represents a hybrid kind, called by Messrs. Veitch & Sons A. cœrulea hybrida, obtained by crossing A. cœrulea and A. chrysantha. The result of the cross has been the production of a variety of a more robust habit than that of A. cœrulea, with sepals of a delicate pale blue and petals yellow or primrose coloured. All of the above are hardy, but they do not succeed so well in open borders as they do in pots. For culture in pots they are usually raised from seeds, and in order that good flowering plants may be obtained the following season the seed should be sown in April, and as soon as the young plants are large enough to handle they should be pricked out, about a dozen together, in a 5-in. or 6-in. pot. When these have made some growth let them be potted off singly into small pots, re-potting as the plants require it. It is not desirable to use large pots, as Columbines do not succeed so well in large pots as in those of moderate size; a 5-in. pot is quite large enough for A. cœrulea, while strong plants of A. chrysantha and A. cœrulea hybrida succeed best in 6-in. or 7-in. pots. While making their growth they may be kept in a cold frame, or they may be placed out-of-doors in an open position. If they are in frames the glass lights must be removed whenever it is possible to do so. The insect pests that chiefly attack the Aquilegia are red spider and green fly, but neither of these does much injury, and indeed they seldom appear at all if the plants receive no check, and are syringed daily with clean rain-water. The plants may be wintered in cold frames, and during the dull months they should not receive much water, merely enough to keep the soil moist. Allowing them to become rather dry and then giving them a good soaking of water is better than giving driblets and often. Permit the plants to remain in the frame until the first flowers open, when they may be transferred to the greenhouse. The rising flower-stems come in contact with the glass, and when that happens it is necessary to raise the lights a little. The soil best adapted for them is rather clayey loam, to which should be added a fourth part of leaf-mould and nearly as much rotten-manure and some sand. All the species and varieties of Aquilegia succeed under this treatment.

A. glandulosa is a very handsome species, but it does not succeed well everywhere. It succeeds well north of Aberdeen; but probably the south of England is too dry and hot for it, as it has been introduced from the mountainous districts of Central Siberia. A. alpina is rather like it in its manner of growth under cultivation; it is also from a high mountainous district in Central Europe. The plant is dwarf and the flowers very pretty.

A. Skinneri is a very distinct species, that should be grown in a select collection. It succeeds better in the open border than any other, except the common garden Columbine (A. vulgaris). It is almost as robust as A. chrysantha when grown in pots. The sepals are orange-scarlet, and the petals yellow. It flowers the earliest of all that have been named. A californica resembles the last in colour; the flowers are, however, not quite so large, and the plant is taller and of a more straggling habit.

A. pyrenaica is another free-growing handsome species, with purple sepals and bluish-purple petals. Its flowers are drooping and produced very freely. Whether for the herbaceous border or for pot culture all the above may be freely recommended. Cut flowers of them are also very beautiful in vases.

ANSWERS TO QUERIES.

2078.—**Non-flowering English Plants in India.**—Wallflowers will sometimes bloom very sparingly in wet sunless springs in India. The following treatment may make them flower:—Plant, either on a rockery or on a pile of stones sunk in the ground, and let the earth the plants root in be well mixed with old mortar, pounded shells, or carbonate of lime in some shape or form. Water very sparingly when the plants are wanted to set their bloom buds. Wallflowers will grow in pure chalk. I remember noticing some in a railway cutting in Kent growing from the vertical north side of the cut, exposed to the hottest sunshine; they were only single shoots, 6 in. long, but each bearing two or three finely coloured blossoms 1½ in. in diameter. It is difficult to account for the Sweet Williams not blooming, as, in a soil which suits Pinks and Carnations here, the difficulty is to keep them from blooming—unless they are established the previous autumn. One or all of the following treatments may succeed:—1. When the plants have reached a size at which they ought to rise for bloom, carefully lift and transplant them along with as much as possible of the soil the roots penetrate; the slight check given may have the desired effect. 2. In a poor light soil dig holes 1 ft. deep and the same in diameter; mix the soil dug out with leaf-mould and return it, and prick the seedlings out, one in the centre of each station, when they have made six leaves. Vary the quantity of leaf-mould used from a sixth in some holes to half in others, taking note of the quantity used in each, the object being to give the plants a soil which they exhaust by a certain period when they may show for bloom; when the bloom-buds show, liquid manure may be given. 3. Shade the plants from the hottest sunshine while they are making leaves, and expose them to it when they are wanted to bloom. 4. Water very sparingly when the plants have made sufficient leaves. When plants refuse to bloom, it is always necessary to bear in mind that a plant only blooms when its vital energy gets ahead of its capability of forming leaves, and act accordingly.—J. D.

2201.—**Propagating Sweet-scented Verbenas.**—Take a 4-in. pot and fill with soil, using equal parts of loam, leaf-mould and sand; than place it level inside of a 6-in. pot, filling up with soil between. Take cuttings of the freshest shoots that are not flowering, and fill the 4-in. pot; then give a good watering, using a fine rose. Cover with a bell-glass about 5 in. diameter and shade from the sun. Keep close until they show signs of taking with the soil, when a little air may be gradually admitted. Watch that they do not get too much, as they are very liable to flag. In giving water, apply it outside the centre pot.—M. Cuthbertson.

2147.—**Cowslips from Seed.**—The Cowslip is most commonly met with in damp, level, alluvial meadows; but it never grows so well or flowers so profusely there as it does in a light well-drained soil, where the plant is seldom met with. This would seem to indicate that, like others of the family, any drying up of the seed is fatal to its germination, as, other

things being equal, a plant which produced ten or twelve large trusses of flowers would have a better chance of seeding than one with one or two small trusses; whereas, in a dry soil the Cowslip does not spread but remains scarce. Treat them the same way as Auriculas. Sow in pans of loam and leaf-mould, cover with ½ in. of chopped Moss, and have patience. Like some others of the family, the seed may be a long time in germinating. The seeds of the common Primrose and of Primula japonica will remain in the ground nearly a year before they germinate, although a few seeds will generally germinate at once.—J. D.

2191.—**Plants in Rooms.**—Plants growing in rooms would certainly thrive much better could they be removed as soon as the gas is lit. It is just that dry vitiated state of the atmosphere which gas and fire heat produce in an apartment that causes the grower so much trouble, rendering it a matter of considerable difficulty to preserve plants in health when subjected to its influence. The idea of constructing a window conservatory is excellent. We have often felt considerable surprise that more should not be attempted in this way. Even where no verandah exists, it is no difficult matter to build something of that description, wherein plants may be treated more in accordance with their requirements than it is possible to do in a room. A glass roof is by no means indispensable, although if a kind of skylight could be let into the roof, so arranged as to form a ventilator, to be opened more or less wide, according to the weather, plant culture in such a structure would be thereby much facilitated. In the winter a lamp or small stove would keep out frost; and many kinds of spring-flowering plants could be brought into bloom at an early period.—J. C., *Byfleet.*

Columbines (Aquilegias).

2194.—**The Best Pansies.**—"X. Y. Z." should have distinguished between show and fancy varieties. Opinions differ as to the best; but the following six of each kind will be found good:—Fancies: Mrs. Wood, crimson, the largest Pansy out; Lady Middleton, rose and purple, white edge; Robert Goodwin, crimson, edged with white, dark-brown blotch; John Currie, bronzy crimson; Mrs. McTaggart, straw colour; Mrs. Crawley, purple, edged white. Show: Capt. Knowles, dark self; Sir P. Coats, purple self; Princess Beatrice, white self; Alex. Adam, yellow self; Rob. Burns, yellow ground; Jeanie Grieve, white ground.—M. Cuthbertson.

2181.—**Ants and Fruit Trees.**—Is "C. J. B." sure his ants' eggs are not the black aphis? A Morello Cherry on a north-west wall is almost yearly infested thus; and black ants are at that time always very busy among their sweet excretion. Our plan has always been to cut the young shoots, when they are from 6 in. to 8 in. long, off to the third or fourth bud; if there be any not infected, leave them. The lower portion of the tree is attacked soonest, and likewise it frequently receives its summary pruning earliest. This rather violent measure has apparently never hurt the tree, as it is seldom but what an excellent crop is produced. Care should be had that too much leaf is not taken off, or the crop will be a failure. Our Apricot and other fruits have never been infested with the same black aphis—V.

2175.—**Flowers and Gas.**—The only kinds of plants that are really calculated to give satisfaction in an apartment where gas is constantly burnt are those which have foliage of a somewhat thick leathery nature, such as Aspidistra lurida variegata, Ficus elastica, Dracænas congesta and rubra, and Grevillea robusta. The more vitiated the atmosphere the more frequently must the leaves be sponged with clean tepid water. Wash both the upper and under surfaces at least twice a week. Flowering plants do not thrive well in a close impure atmosphere; but they, too, may be kept in good condition for some time if thus attended to.—J. C. B.

2179 and 2196.—**Leaf Impressions.**—I take pleasure in telling my fellow readers respectively that the oil-sheets are those commonly used in copying letters, and which keep the wet part of the letter book from damping the dry part. The carbonic paper is that used for manifold writing, principally for telegrams. To my querist S. A. Bird, I may add that if my *modus operandi* is adhered to, the leaf would be found so black that it would not be known from a crow. I should be most happy to send either or both writers a sample of carbonic paper and oil sheet, so that they will know what to order, and, if they like, an impression to prove my case. Any office stationer will supply the materials named.—Jas. J. Hodson.

2227.—**Impregnating Flowers.**—If the object is simply to produce seeds, going over the flowers indiscriminately with a camel's-hair pencil will suffice. If there is a scarcity of pollen in the case of the Calceolarias, it may be obtained from any of the well-shaped flowers of the shrubby kinds. This will induce a dwarf sturdy habit. The camel's-hair brush will also do for Auriculas; but, to effect any particular cross, emasculation must be done early.—E. H.

2215.—**Cropping a Kitchen Garden.**—The sorts of Cabbage, Broccoli, &c., already in hand are good, and will give a supply of green stuff for a long time. These should be supplemented by getting as early as possible Brussels Sprouts, Scotch Kale, purple sprouting Broccoli, and in the autumn some summer-sown Cabbage for spring cutting. Winter Spinach should be sown early in August, and white Turnips through that month also. Celery, if not sown, should be sown at once in heat, as it is late; the best sorts are dwarf white, Incomparable, Fulham Prize, pink, and Leicester Red, all firm, hardy, and of good flavour. For summer use it is good time yet for runner and dwarf or French Beans, and for a few late Peas. A sowing of dwarf Erfurt or Snowball Cauliflowers now will give good heads early in the autumn before Veitch's is ready for cutting. Vegetable Marrow plants may be put out at once, as also may be ridge Cucumbers. A sowing of Short Horn Carrot made at midsummer will give some delicious roots for the early winter, and winter Onions should be sown in August for the following spring use. It is often cheaper te buy Cabbage and other winter plants than to raise from seed, as there are many risks which are always greater the less the quantity of seed sown.—A. D.

2221.—**Mushroom Growing in Meadows.**—There is not the least reason why it should not be done, although it cannot be assured that the result looked for will follow; all will probably depend upon the season, as if very dry the spawn may not run, or if wet it may perish. It will have to be entirely dependent upon the temperature of the earth, and, of course, would be in just the same position as naturally-formed spawn. The spawn should be broken up into pieces about the size of hens' eggs, and be buried about 1 in. in depth in holes that should be re-covered with fine soil; on the other hand, the same amount of spawn may be made to produce perhaps a far larger crop of Mushrooms if put into a properly-prepared bed

made up of loose horse droppings that have been frequently turned and moistened so as to secure a sweet mild warmth. This may be built up in any warm corner of the garden to a depth of about 12 in., and the pieces of spawn put in almost directly; then the bed should be surfaced to 1 in. in depth with fine soil gently patted down with a spade, and well watered; then cover up with straw and leave it, protecting only from heavy rains, and watering occasionally with tepid water if the weather is hot and dry. Such a bed will give plenty of good Mushrooms after a few weeks, but, of course, could only be available in the open air either in summer or autumn.

2224.—**Vine in Conservatory Not Doing Well.**—There is too much reason to fear that a Vine which almost refuses to break or make growth is hopelessly gone beyond recovery, and the most practical remedy would be to root it out, re-make the border in which it grows, introducing as much fresh soil as possible, and planting a new Vine. A good start at the first lays the foundation of a good Vine later on, as if the first growth is weak and puny that of later years will rarely ever be fruitful. It may be of some use to cut back the Vine hard, and, sacrificing the prospect of getting fruit one year, strive to induce fresh vigorous shoots; if these could be had, and be well ripened, then the foundation of a fruitful Vine might again be laid. There is too much reason to fear that the fault lies at the roots, which no doubt are in soil too poor, or perhaps too sour, to suit them. —A. D.

2180.—**Sowing Begonias.**—There should be no difficulty experienced in raising Begonias from seed if the following instructions are carried out. It is, however, imperative that the seed be new, otherwise but little reliance can be placed upon its germination. The beginning of February is the best time for sowing, as the plants then get a long season of growth; and if pushed along quickly will make good flowering specimens by the early autumn. Until the beginning of May a warm house is necessary, after which time a close frame or a hand-light will suffice. Well drain a 6-in. pot or a pan; then fill the same with a compost of two-thirds leaf-mould and one-third loam, adding thereto a goodly portion of silver-sand. Make the surface quite firm, water the soil, and, having allowed superfluous moisture to drain away, sow the seed thinly, covering very slightly with fine sandy soil. Place a piece of glass on the pot, and shade continually with a piece of paper until the seedlings appear. The main point is to place the pot where the soil cannot dry, but so that little or no watering is needed until germination takes place.—J. C. B.

2195.—**Best Six Roses.**—Out of the hundreds of first-class Roses in cultivation, it would be a difficult task to name the best six. A good six for garden decoration as standards would be—Victor Verdier, Souvenir de la Malmaison, Aïmée Vibert, Cheshunt Hybrid, Gloire de Dijon, and Belle Lyonnaise. For garden decoration as bushes—General Jacqueminot, Anna Alexieff, Glory of Cheshunt, Glory of Waltham, Perfection de Blanches, and Madame Devert. A good six fine show Roses, which have been out some years without being superseded by newer introductions—Jules Margottin, Alfred Colomb, Charles Lefebvre, John Hopper, Sénateur Vaisse, and Maurice Bernardin. A very high-class six exhibition Roses—Captain Christy, Marie Baumann, Duke of Edinburgh, Prince Camille de Rohan, Madame Victor Verdier, and La France.—D. J.

—— The six best H. P.'s are—John Hopper, carmine-rose; Comtesse de Chabrillant, pink; Alfred Colomb, crimson; General Jacqueminot, velvety-crimson; Marie Baumann, carmine-crimson; and Charles Lefebvre, deep crimson. The fourth is faulty in form, but makes up in other points. If other kinds are to be included, Maréchal Niel is the best yellow, and Gloire de Dijon the most useful yellow Tea-scented.—M. CUTHBERTSON.

—— Six of the very best Roses in cultivation are Souvenir de la Malmaison, Gloire de Dijon, La France, Paul Néron, General Jacqueminot, and John Hopper.—C.

2172.—**Watering Early Potatoes.**—If they are very dry, a good watering will be beneficial. Do it in the morning. I would advise you not to cover them at night unless it is very like frost. I have them on an 8-ft. border over 1 ft. high, and they have never had any covering.—M. CUTHBERTSON, *Bute*.

2193.—**The Feather Grass** (Stipa pinnata).—Your seed has been bad or you have mismanaged it. Two years ago I sowed some outside, as I would an ordinary hardy annual. Almost every seed seemed to come up, and now I have fine clumps.—M. CUTHBERTSON.

2076.—**Annuals and Perennials for Rose beds.**—See GARDENING for April 10, 1880, p. 67, and add to the list of perennials there recommended Phloxes in variety and the taller Delphiniums, and to the annuals the single and double Clarkias. Godetia The Bride would look well amongst dark Roses: so also would White Rockets and Auricula-eyed Sweet Williams amongst biennials. Convolvulus minor would look well, but does not last long.—J. D.

2165.—**Wallflowers with Double Blossoms.**—Double Wallflower or Stock seed can only be ensured from flowers with more than the normal four petals. Seed bought as single seldom produces such flowers, but among the doubles there are usually a few singles with five, six, or even more petals. All other flowers should be picked off, and seed saved only from those with the extra petals, which will be almost certain to produce double flowers.—H.

2192.—**Disease in Gooseberry Trees.**—If "John Hopkinson" examines the red spots under a microscope, he will find them to consist of minute red insects like the cochineal. The best plan (as far as I know) is to pick off the leaves and destroy them.—H. H. L.

2037.—**Window Boxes.**—Read ½-in. deal board instead of 2½ in., as mentioned p. 129, May 15. A window box made with such a thickness would be exceedingly cumbersome.—NEWT.

2204.—**Summer Flowering Bulbs.**—Scilla montana alba, Anemone appenina, A. fulgens, Summer Snowflake (Leucojum æstivum), Adonis vernalis, Sanguinaria, hardy Cyclamen, Triteleia uniflora, Grape Hyacinths. All these would succeed your spring bulbs, and be of about the same size for your Wardian case.—WESTON.

2185.—**Rose Maggots.**—There is but one effectual remedy, viz., hand-picking. Make a point of going over the trees at least every other day, examining them closely. The crumpled state of the young leaf betrays the presence of the insect.—B.

2190.—**Flowering Shrubs for Borders.**—Berberis Darwini, a handsome evergreen, bearing a profusion of bright orange-yellow flowers, and the Laurustinus would be suitable subjects for the purpose. Deutzia crenata fl.-pl. and the Japanese Privet are both very pretty; the latter is of medium growth, is evergreen, and flowers freely in the summer.—J. C. B.

2193.—**Trailing Azaleas.**—The plant alluded to is Azalea procumbens, and is to be found on many of the Highland mountains, where it is indigenous. It is a small shrub, growing in tufts, and procumbent on dry heathy ground, and has rose-coloured flowers, which appear in July. It is found nowhere in the United Kingdom except Scotland. Some of our nurserymen may have it, but I think it is very unlikely.—J. W., *Tottenham*.

2200.—**Caterpillars on Cherry and Rose Trees.**—We know of nothing so effectual as Hellebore powder, enclosing the same in a muslin bag and dusting the trees with it, choosing a still morning for the operation.—C.

2199.—**Insects in Seed Pans.**—Put a spadeful of lime in a tub of water, allowing the latter to become quite clear. Use the same for watering the pans, and the insects will either die or make their escape. There is no danger of using the water too strong, as it will only hold a certain quantity of lime in solution.—C.

2229.—**Raising Seeds.**—I want to raise some Carnation, Calceolaria, Primula, and Cineraria seeds. Am I likely to do so in an unheated conservatory? and what soil and treatment would be best?—NANCY. [Well drain some pots or pans by filling them half-full of broken flower pots; over this place some Moss or half-rotted leaf-mould or turf, then fill up with light sandy soil, press it down firmly and evenly, then well water it, and sow the seed evenly on the surface. Slightly cover with very fine soil and place in a shady corner of your conservatory, placing a pane of glass over each pan till the young plants are up.]

2230.—**Leaf Mould.**—Is there any way of reducing leaves to mould quicker than by the natural process of decay?—DERBY DILLY. [Keep them well watered and frequently turned; tread them down firmly each time after turning.]

2231.—**Window Plants not Blooming.**—I have three Geraniums which look very healthy and green in the leaf, but most of the buds when they have begun to show themselves turn yellow and fade away, and the others which have come forward have opened before they have reached their natural size.—W. L. [Give them more air and light and sun, if possible.]

2232.—**Watering Liliums.**—In growing the Lilium auratum and L. rubrum is it necessary to give much water? and about what quantity daily to single bulbs in pots? also if liquid manure would be beneficial?—AURATUM. [When the plants are growing freely, abundance of water is necessary. We could not state the quantity that should be applied, but if your pots are well drained you may give as much as you like in reason—that is, when the plants require it; and the time they require it is when the soil is dry; surely you can tell when the soil in a pot is dry. Weak liquid manure may be given occasionally.]

2233.—**Grape Vine Bleeding.**—I have a Grape Vine having three thick branches proceeding from the main stem, similar to the prongs of a fork. One of these branches has been sawn off, and the cut branch continues to bleed clear water. Will this injure the Vine if not stopped? and what is the remedy to cure it?—BLEEDING VINE. [Dry up the stem with a hot iron, and then apply a thick coat of sealing-wax over the cut. As the Vine makes leaves and wood the bleeding will stop.]

2234.—**Management of Seakale.**—What am I to do with Seakale plants that have done bearing some time? I do not know what treatment they require to ensure a good and early crop next year.—G. A. [Dig in a little manure between the rows, and keep the surface frequently hoed during summer.]

2235.—**Fumigating Roses.**—In fumigating Roses in frames is it better to syringe before or after?—H. B. [Syringe them the next day if you do it at all. The leaves of plants should always be dry when they are fumigated.]

2236.—**Wireworms in Cutting Pots.**—How can wireworms in pots, which eat away the roots and prevent cuttings striking, be got rid of?—WIREWORM. [By taking out the cuttings and putting them in soil in which wireworms do not exist.]

2237.—**Pelargonium and Geranium.**—Are these one and the same thing? or what is the difference?—W. HEINES. [They are different, but the distinction is such that none but a botanist would discover it. We use the two words often, because many of our readers would not understand what a Pelargonium is, it having always been known by the name Geranium.]

2238.—**Fruit of Cucumber Dying Off.**—My plants are healthy and grow fast, but when the fruit appears 2 in. long, they fall on the bed. Can you please give the reason? The heat is 65° by night and 70° by day. —F. M. [Imperfect fertilisation, we should say. Fertilise the blossoms at the end of the embryo fruits with the male blossoms which have no fruit attached to them.]

2239.—**Schizostylis coccinea.**—I have not succeeded in making this blossom, either by keeping it in the pot, in a frame, or planting in the garden. Please say whether it should be divided when planted out, and when this should be done, and in what soil.—M. W. M. OLIVE. [If you plant it out now in any good garden soil it should flower in autumn. You may divide it or not, according to the size of your plants. They may be lifted and potted previous to flowering if desired.]

2240.—**Pruning Rose Trees.**—I pruned all dead wood from my Rose trees in February; since then the ends of the living shoots have died down; the leaves seem dried up. What is the cause of this? and should the withered wood be cut off again?—THANKFUL. [The ends of the shoots have probably been injured by frost. Cut them back to good healthy buds.]

2241.—**Lime Water for Roses.**—What strength do you make lime water for syringing Rose trees to kill aphides?—THANKFUL AMATEUR. [Lime water is not the best thing for this purpose. Try Quassia, at the rate of 4 oz. to the gallon of water; boil them for ten minutes, strain, and add 4 oz. of soft soap. Syringe the trees when the liquor is nearly cold, and half an hour after syringe with clean soft water.]

2242.—**Lavender Hedge.**—My Lavender hedge was growing very straggling and I layered it down; the frost has killed many, both bushes and layers, and the appearance is unsightly. Is it possible to keep such a hedge trim?—SCHOLASTICUS. [We would advise you to put in a lot of cuttings, and when they have struck, cut down the hedge close to the ground and put a layer of manure on the roots, and keep it watered in dry weather. It may break up from the bottom and form a good hedge again; if it does not, dig it up and well manure the ground and plant your newly-struck cuttings.]

2243.—**Cucumbers Turning Yellow.**—What is the reason my Cucumber plants turn yellow at the edge of the leaf? Is it too much water? And please inform me the best time to water, and whether the foliage should be wetted. Should the plants be syringed? if so, should they be shaded afterwards?—TELEGRAPH. [If the frame is in a sunny position, it will need a little shade during the day. About 4 o'clock in the afternoon well syringe the plants, and also all round the frame: remove the shading and close the ventilators. Cucumbers require abundance of water during the summer, and this should be performed at least once a week; twice will be better. Give a good soaking when you do water. The water should be exposed to the sun all the morning, and used in the afternoon when you close the frame.]

2244.—**Pruning Currant Trees.**—I have a Currant tree planted against the south wall in my garden, and the young branches have grown so much that they cover the most of the tree, thereby keeping the sun off the fruit. Can I now strike cuttings?—P. L. R. [Cut off all shoots but the leading ones to within 2 in. or 3 in. of the old stems. The cuttings might strike now, but autumn or early spring are the times to insert them.]

Fumigator.—*W. W.*—If you use a fumigator similar to the one advertised in our columns weekly, you can smoke the house without being obliged to stay in it. Tobacco smoke would have an injurious effect upon green frogs.

Herbaceous Plants.—*F. W. P.*—These are plants which partake of the nature of a herb, and the stems and leaves of which die down after a few months vegetation.

Spiræa japonica after Blooming.—*Florence.*—Divide the roots and plant them out in a warm situation in deep rich sandy soil; lift and pot in autumn.

Training Cucumbers in Frame.—*A Novice.*—When the plant has made two pairs of leaves besides the smooth seed leaves which come first, pinch out the top. This will cause the plant to send out at least two shoots, which should be trained across the frame. As soon as young fruit show themselves pinch off the top of the shoot which bears them, leaving one leaf beyond the fruit; so keep on throughout the season.

Creepers for Shallow Basket.—*P. L. R.*—You do not say what size your basket is, nor whether it is indoors or outdoors.

"Hygeian Cook Book."—*T. Heath.*—We know nothing of the book further than that it was sent to us for review. We have already given the address of the publishers.

Pansies.—*Nancy.*—The blossoms were too much shrivelled for us to be able to judge of their merits. We cannot undertake to name florists' flowers, which can only be done by specialists who have the means of comparison.

Six Palms for a Cool House.—*C. B.*—Amongst the most suitable Palms for growing in an ordinary greenhouse are the followiug:—Areca Baurei, A. monostachya, Cocos chilensis, C. Procopeana, C. coronata, Chamærops Fortunei, C. humilis, C. robusta, C. tomentosa, Seaforthia

elegans, Thrinax parviflora, Kentia australis, K. Belmoreana, K. Fosteriana, K. Canterburyana, and Corypha australis. See them all at a nursery, and choose which you like best.

Ericas after Flowering.—*G. W. W.*—Cut out the weak shoots, and shorten back the strong ones to at least half their length. Place them in a cold frame and syringe them overhead occasionally, and be attentive to watering. When new growth commences, inure the plants to air and sun; and then in autumn, when the new growth has got a little firm, you may put in cuttings 1 in. in length in a pot of sandy soil in a close frame with a bell-glass over it. If the pots are now full of roots, the plants should have a shift into a size larger pots when new growth has fairly commenced, using tough peat and silver sand.

Worms in Plant Tub.—*Mole.*—Get a handful or two of slaked lime and put into a can of water; well stir it, and water the plant with it; or, what would be better still, place the tub in a large vessel, then pour into the vessel lime water till it reaches the rim of the tub; the worms will then come to the surface and can be destroyed.

Soil for India-rubber Plant.—*Experienced Wife.*—Any good soil will do for this plant, but the best is three parts turfy loam, one part leaf-mould or rotten cow manure, and plenty of silver-sand or river-sand.

Green Fly on Roses.—*E. J. J.*—Get some Quassia chips from the chemist, and boil them for a quarter of an hour, putting at the rate of 4 oz. of Quassia chips to 1 gallon of water. Strain off the chips, and whilst the liquor is cooling add 4 oz. of soft soap to the gallon. Syringe the trees with this; and half an hour afterwards syringe them with clean soft water. Several applications may be necessary.

Planting out Camellias.—*C. Andrews.*—Unless the plants are small, it would be better to plunge the pots in ashes in the open air than to turn the plants out of the pots.

Propagating the Lemon-scented Verbena.—Take off young shoots from plants that have been well exposed to sun and air, about 4 in. or 6 in. long, and insert them in sandy soil under a bell-glass in a moist frame, or in a shady window.

Saving Cyclamen Seed.—This should be gathered when the pods are ripe, but just before they burst open. It may be sown when gathered, or be kept till August. Sow in a pan of light friable sandy soil, and place in a warm greenhouse or frame under a bell-glass, or with a sheet of glass placed over the pan.

Yellow Grapes.—*Perplexed.*—We can assign no reason for the Grapes turning yellow from the description you give of the Vines.

Gardenia Leaves Turning Yellow.—*M. L.*—The leaves sent look as though the plant was starved for want of some stimulant. Apply a little weak soot water occasionally, and a little liquid manure or guano water when the buds are opening; also keep the plant well syringed.

Culture of Salsafy.—*Annita.*—Full details are given in GARDENING, June 28th, of last year.

Stagnant Water for Plants.—*Boz.*—Water that has been in a butt for a month or two may be safely used for watering plants or vegetables.

Scale on Maiden-hair Fern.—*E. Percy.*—Your only course is to cut the fronds all off close.

Cork for Growing Plants on.—*W. W. J.*—Consult our advertising columns.

A. J. J.—We know nothing of the manure to which you allude.

J. H., Stockport.—The leaves of the Cucumbers appear to be dried up, as if they had been covered with red spider. Remove the leaves a few at a time, and induce new growth to start.

Books.—*Scotia.*—We know of no good book on the subject you mention. There are some, but there are chiefly of a botanical character.

Names of Plants.—*Flora.*—Generally called the Artillery Plant (Pilea muscosa).——*Subscriber.*—The Fern alluded to must be Microlepia exserta.——*G. R. W.*—Pulmonaria officinalis.——*R. P. E.*—The drawing sent is of a Turk's-cap Cactus (Echinocactus) of some kind, but we cannot say which from a simple sketch. It will grow in sandy well-drained soil in a cool house.——*W. R. S.*—Bougainvillea glabra.——*A Novice.*—2, The Greater Stitchwort (Stellaria holostea); 3, The perennial Mercury (Mercurialis perennis).——*R. B.*—1, The Snake's Head (Fritillaria meleagris); 2, Kerria japonica.—*W. R.*—Berberis Empetrifolia, a hardy shrub.——*E. G.*—Cantua dependens.—*Dinder.*—Habrothamnus fasciculatus; other next week.——*E. G. B.*—Prunus padus, the Bird Cherry.——*Mrs. J. P.*—Varieties of Narcissus, Tazetta variety.——*E. M. M.*—A fungus peculiar to the Rose.——*S. W.*—The Corn-flower (Centaurea cyanus), a hardy herbaceous plant.——*H. H. H. H.*—Amelanchier Botryapium.——*L. G. B.*—Blue, Aubrietia deltoides; white, Arabis albida.——*J. B.*—Saxifraga cæspitosa——*Fred. Cockerell.*—We received your letter, but no Ferns.——*D. D.*—Phlox subulata.

QUERIES.

2245.—**Wall Climbers.**—Will some one kindly give the names of two or three best suited for back wall of lean-to greenhouse? The wall is a warm one, the kitchen fire being on one side of it; aspect, south-east.—J. M.

2246.—**Rhododendrons not Flowering.**—I take care to buy only those Rhododendrons that show a good promise of blossoms. They flower well the first season, and then, as a rule, afterwards throw out leaf buds only. I wish specially to know if they can be pruned with benefit, both as regards form and flowering; and if so, when and how?—W. E. CARR.

2247.—**Araucaria Losing its Branches.**—I have a fine Araucaria growing in a very sheltered garden and seemingly in good health; but all the lower branches on one side turn brown and many have fallen off. It is a very fine specimen, fully forty years old, and I should be much obliged for some advice on the subject; the decay seems spreading upward among the branches, but the stem is perfectly healthy and it grows freely. Would fresh top-dressing with good soil be likely to be of use?—AUNT FORTUNE.

2248.—**Pansies Deteriorating.**—Will a show Pansy deteriorate so long as all the blooms are picked off before opening? If the top be cut off a deteriorated Pansy, will the young shoots produce flowers perfect as at first? If roots of deteriorated Pansies be divided, will the divisions produce good flowers? Will cuttings of a deteriorated Pansy, or of a Pink which has lost its lacing, produce perfect blooms?—J. W. L.

2249.—**Manure for Plants.**—Is pig manure good for plants in pots? and, if so, ought it to be well rotted?—NANCY.

2250.—**Asparagus Beds.**—Could any reader of GARDENING tell me what it would cost to make an Asparagus bed large enough to supply five or six persons during the season? also, how soon the Asparagus would be fit to cut?—NANCY.

2251.—**Plants for Sunless Windows.**—What plants or flowers will succeed in my back windows, which look north? They have plenty of light, but no sun; one is a well-warmed kitchen. Geraniums are useless, as they will not flower. Situation: Glamorganshire, and very cold in winter.—RED ZYONITE.

2252.—**Hardy Perennials.**—Can any one give me a list of a few choice hardy Perennials of easy culture and showy appearance, for sowing in July or August, of compact growth?—RUSTIC.

2253.—**Fern Cases.**—Will some one tell me how to construct a Fern case, and how to provide proper drainage? and is a flat or slanting roof the best?—G. C. G.

2254.—**Plants for Window Boxes.**—I should be glad to know what plants would be most suitable to put in window boxes in a fortnight's time. The aspect is a north one, and dusty from the street. I want something that will last till the frost comes; foliage plants I like, and last year I had Pyrethrum (yellow), and it looked well, as the boxes are peacock blue.—BROWN-EYES.

2255.—**Hollyhock Leaves with Red Spots.**—My seedling Hollyhocks are not thriving; they were sown last spring, and put in their places a month ago. As the leaves attain maturity they become spotted with small red protuberant spots on the underside (like Radish seed), flag, and gradually decay. I have manured with soot and liquid manure. What is the disease, and the remedy?—R. H. P.

2256.—**Fennel-root as a Substitute for Celery.**—I am told that in Italy, especially in the large cities, the smell of Fennel pervades the streets just after noon, arising from the preparation of the root for use after dinner as we use Celery, and that it is relished by high and low. The roots are grown there of immense size. Can any correspondent who has travelled and dined in that country give an opinion as to whether this root would be admissible at an English table, how it is served up, and with what eaten, and any hint as to the growth of luxuriant roots?—R. H. P.

2257.—**Orinthogalum arabicum.**—I planted half-a-dozen bulbs of this plant in 5-in. pots last autumn, and every one started into vigorous growth, but not one of them shows any signs of sending up its flowering stem. This same failure to make this lovely plant to bloom has happened to me before; and I would feel obliged if any of your numerous readers who may have been more successful can suggest the cause? I must add they were planted at the same time, and treated in every respect in the same way, as a Hyacinth bulb.—LEWIS W.

2258.—**Planting a Rockery.**—I read with much interest the article on rock gardens a few weeks back. As my space was limited, I made up my mind to make a miniature one. The only situation was at the bottom of my strip of garden, which is shaded from the sun till the middle of the day this time of the year by a neighbour's house. With a few barrowloads of loam and leaf-mould I made a bank 7 ft. long, 2 ft. high, and 3 ft. wide at base, and in it partly buried some rough pieces of broken millstone. As the space is small, I should like to grow only the best; and as easterly winds blow along it in spring, I should be glad if some reader would give me the names of the most beautiful Alpine plants sufficient and suitable for the size and situation of the rockery.—ALPINE.

2259.—**Narcissi Failing.**—We have a nice lot of double white Narcissus, but out of the seven or eight years we have had them they have only borne a few flowers twice. I got them all up and divided them several years ago, but that did not do them any good. They grow in light sandy soil in different positions. One under a south wall bore two or three flowers last year. This year the same root put up about a dozen buds, but within this last week they have all withered off in the same way that they have done other years. Will some one kindly suggest a remedy?—FLORA.

2260.—**Wallflowers not Blooming.**—Last July I sowed some seeds of Wallflowers. When the young plants were large enough, I transplanted them to a cold frame, where they remained during the winter. About two months ago I planted them out in the open, and, although they have grown considerably, they have not yet bloomed, nor are there any signs of their doing so.—H. BROADWAY.

2261.—**Watercresses.**—I have a small stream at one end of my land, which might be made to cover half an acre of ground. Can any of your readers tell me what profit per year might be reasonably expected by the culture of Watercresses; also, if I can employ any simple method of throwing the water back to its highest point, in order to extend the beds?—QUIVER.

2262.—**Uses of a Cellar.**—What profitable use might I make of a good cellar other than for Mushroom growing?—QUIVER.

2263.—**Jonquils and Tulips.**—I planted a number of Tulips and Jonquils last autumn, and only a few of the Tulips have bloomed; so I have removed them from the ground, well dried them, and intend storing them away till next planting time. All Tulip bulbs appear sound; but the Jonquils, without one exception, have long tap-roots, and appear to have been growing downwards. Will some one inform me if this is usual; also the best thing to do with them to secure blooms next year?—AMATEUR B.

2264.—**Cleaning Stone Vases.**—In the garden we have two vases (Maltese stone). Would some reader kindly inform as to the best means of cleaning them?—H. H. L.

2265.—**Tacsonia Van Volxemi.**—Will some one tell me how to treat this creeper when growing in a greenhouse? Ought young plants to be cut back after blooming?—D. T.

2266.—**Fowls' Manure.**—I have a quantity of fowls manure, and should be obliged if some one would tell me what is the relative strength of such material, and how to apply it to various crops. Is it good for watering Onions and flowers?—A. N.

2267.—**Do Ferns require Sunshine?**—Finding there is a great diversity of opinion concerning the treatment of Ferns in this respect, I shall feel obliged if some of your many readers will give their experience; also the names of those Ferns (if any) which thrive best in the sunshine.—W. HEWES.

2268.—**Sawdust for Blanching Celery.**—Would sawdust answer for the purpose named?—J. D.

2269.—**Pruning Fruit Trees and Shrubs.**—Will some one kindly inform me the best time to prune Apple and Pear trees (pyramids), Laurustinus, Euonymus, Holly, Laurels, Rhododendrons, &c., and how to do so?—E. J. H. C.

2270.—**Bottom Heat for Frames.**—Would "Petros" be so kind as to tell another reader what quantity of oil his lamp would burn in a week? He advises "F. H. W." a tin lamp to hold 2 quarts; if it burns that in twenty-four hours it would come rather expensive for a labouring man. It is Paraffin he burns, I suppose; and that is 4d. per quart where I live. If the lamp burns 2 quarts per day it would make 14 quarts per week. I shall make one myself after I have got a right understanding.—W. S. J. D.

2271.—**Oleanders not Blooming.**—We have a large Oleander of considerable age, kept in bay window; aspect south-east; in winter the room is heated with fire. The plant grows vigorously, and forms a continuous succession of buds, which fall almost before commencing to swell. Only one year in four or five will we get half-a-dozen blooms. Young plants struck from it will flower strongly one season, perhaps two. Could any of your correspondents say whether we should have a better chance of bloom if its growth was stopped during the winter? It has good soil; do they require it very rich?—V.

2272.—**Gooseberry Trees with Rank Growth.**—My gardener has cut my Gooseberry and Currant bushes so that they have made, especially the former, the most luxuriant shoots; so that they are fine specimens of rank growth. What should be done? Of course, there is little fruit The main branches are a mass of succulent lateral shoots.—H. A. W.

2273.—**Shrubs for Cold Locality.**—I have a large garden bordered by shrubs of all except flowering kinds. I am wishful in the autumn to replace some of the worst of those remaining by some very good ones of the flowering and ornamental kinds, and think it best to see them in bloom or foliage at one of the nurseries before I purchase them. Will some one favour me with a list of such shrubs suitable for a cold elevated position facing south, but yet on the side most open to the east wind? I want about twenty. The soil is light on gravel.—H. P., *Edgbaston.*

2274.—**Rose Tree not Growing.**—I have a white Rose tree which bloomed beautifully last summer in a sitting-room window with south-east aspect. About six weeks ago I cut it back and repotted it in a size larger pot. I shook out old stuff from its roots, and put loam and leaf-mould; but I find the wood turns yellow and the leaves have a sickly look. Will some reader kindly tell me whether I have taken a right or wrong course in the treatment?—BERT.

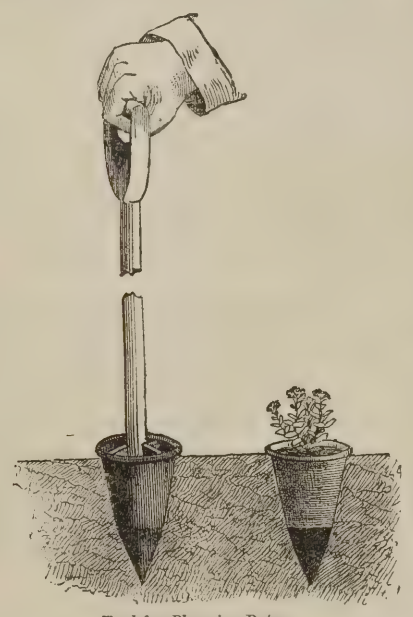
2275.—**Insects in the Fern Case.**—I have a Fern case which is infested with a small white insect. I should be glad to know it this insect injures the Ferns in any way; and if so, how can I get rid of it?—F. THOMAS.

THE HOUSEHOLD.

Unwholesome Preparation of Food.—From the numerous dishes recommended in almost every newspaper, one would be led to suppose that the genuine old-fashioned system of cooking is imperfect. In days gone by we were satisfied with a variety of good food, well cooked. Now our system is changed entirely, and not the true cooks, but the ladies of leisure, seem to be vyeing with each other how to invent the most costly, unhealthy, indigestible food, with which to torture our poor stomachs and deplete the purses of the brain-working dyspeptics. If the majority of the persons who thus sin knew how much they sin, I feel quite sure they world be cautious how they recommend a compound which is alike costly and fearfully destructive to the health of all who partake habitually. I sincerely hope our good wives will cease to exhibit so much folly as they do by their constantly flooding the papers with imaginative delicacies, which in their effect upon the persons who indulge in them are little, if anything, less

than slow poison. This is especially so with regard to our cakes, pastry, and similar things. Any man or woman who invents anything which helps us to live better and more happily, is in the truest sense a philanthropist and a blessing to mankind. Any man or woman who invents anything for the use of mankind which is injurious, or in any way deleterious, is guilty of a great wrong, and should stop and think. Many persons, of course, recommend things through ignorance, not knowing the chemical poison contained in the food recommended. Out of seventy-four different ridiculous fashionable foods recommended, I found only four which were free from saleratus, and any one who constantly uses saleratus pays a fearful penalty. The stomach becomes eroded, and the nervous system is completely broken down.—WM. HORNE, V. S. in *Country Gentleman*.

Implement for Plunging Pots.—This is a useful garden tool. Its handle, as will be seen, is like that of an ordinary spade, and the base consists of a heavy cast-iron dibber, shaped to make a hole to hold a pot, leaving a vacuum below for drainage purposes, and to prevent worms from entering the pots. This implement is only made to suit 4½-in. and 3-in. pots; but it could be made to suit any sized pot, and the handle might be of any required length. In



Tool for Plunging Pots.

using it, it should be plunged into the ground up to the rim, giving it a slight turn round so as to throw off any earth adhering to it; then withdraw it, and insert the pot as shown in our illustration. The weight of the implement soon makes the desired hole with but little exertion on the part of the operator, if the ground is at all pliable, and the expedition with which the work is preformed soon repays the cost of the instrument. For plunging Tomatoes, Vegetable Marrows, and Cucumbers in frames in market gardens, before they are finally planted out, this tool would be very serviceable; and in nurseries, where greenhouse plants in general, herbaceous and alpine plants, &c., are so extensively plunged out-of-doors in summer, it will be found to be indispensable.

POULTRY.

Disease in Fowls.—I am experiencing the same kind of bad luck in my poultry yard as recorded by "Violet" in GARDENING, May 8th. A few days ago one of my best laying Houdan hens was observed to be a little giddy, refusing its food, but thirsty, and avoiding its companions. The next morning it was found dead, with its feet and legs spasmodically and firmly contracted, and drawn up against its body. On examining it, I found it was extremely fat and heavy, but there was no appearance of vermin among the feathers, nor did it appear to have been egg-bound; but the skin generally had a dark congested appearance, as if it had died in spasms. My own impression is that death was caused by a general spasm of the system ending in a kind of apoplexy, but how produced I am at a loss to understand. If any one can afford me any information which may tend to lessen the chances of the entire destruction of my flock—which at present, like "Violet," I have too much reason to apprehend—I shall be glad. I should mention that my fowls have been largely fed upon fat kitchen refuse and waste Potatoes. I have ordered the quantity of this kind of food to be diminished, and, with a view to relieve the vascular condition of the system, have ordered them to have a mixture of barley-meal warmed with Cayenne pepper, which I trust will be followed by good effects.—AMATEUR.

Fowls Eating Eggs.—I have some game hens that were constantly eating their eggs. I cured them in the following manner:—I got two or three of the eggs and "blew" them (that is, cleared out the shells), and filled them with mustard mixed in the ordinary way, making up the ends with plaster. I left them in the nests, and they partly disappeared, but it entirely cured the hens of the bad habit.—H. B. L.

Vermin on Fowls.—"Viola" should at once construct a small covered dusting-place for her fowls, and fill it with ashes and cinders, so arranged that the fowls get a depth of 6 in. or 8 in., at least, to dust in. They soon become infested with vermin without this. I should also add to the Oats a little Maize and Tail Wheat, and give occasionally a little boiled liver or chandlers' greaves, and some roughly-pounded bones. Sick fowls must be removed from the others, and overcrowding at night guarded against; it is a fertile source of disease.—C. H.

Fowls with Dark Combs.—I have some silver-spangled Hamburgh fowls whose combs are quite dark, almost black in fact. Can any one tell me whether this is a disease or not? The birds appear remarkably healthy and lay well.—F. F.

Featherless Fowls.—My hens have all more or less lost their feathers under their tails; in some cases the tail, half of the back, and body are quite without feathers except the few tail feathers. The hens are laying, so I shall also be glad to know if the eggs will be unwholesome in consequence.—F. R. C.

Swellings on Fowls.—I have a Brahma cock that has no wattles, but in place of same it has in the throat a red bladder the size of an egg. Can any reader inform me whether this is natural, or whether it is a disease, and if contagious? I have only noticed the swelling quite recently.—AMATEUR.

Hatching Turkey Eggs.—Is it safe to hatch turkey eggs under a hen? if so, is it too late in the season?—S. LEE.

BEES.

Supers.—The time for putting on supers is in May and June, when the combs are filled with brood and honey; also four or five weeks after swarming if the weather is favourable and the honey harvest abundant. Bees seldom store honey in supers before the hive is filled with comb, or so long as there are empty cells in the hive; should the hive swarm when supers are being filled upon it, the supers should be taken off at once, or the bees will quickly transfer the honey stored in them to the cells then being rapidly emptied of brood, through not having a pregnant queen to keep up the supply of eggs.—SAMUEL YATES, *Manchester*.

Are Bees Profitable? Is there any profit to be derived from keeping bees in the neighbourhood of London? I should like a practical apiarian to give a few hints on this subject.—W. B.

HOME PETS.

Acclimatised Canaries.—It may be interesting to some of your readers to know that canaries are not such delicate birds as is often supposed. True, many die from catching cold; cages are hung up in a room, and when the little songsters are exposed to draughts from the door or window they die, and are thought to be very tender. Well, mine have been out-of-doors all this winter, exposed as they were to a frost which on two or three occasions has registered from 12° to 20° below zero. The aviary is about 9 ft. high, 12 ft. long, and 6 ft. wide, covered with a zinc roof, and has a wall on the north, east, and west sides; the front, facing the south has no protection whatever during the most intense frost, except a quarter-inch wire netting. Night and day, sunshine and shade, some have been there year after year, and never yet have I found that cold or frost has been the destruction of one. Some young and some old, it makes no difference as far as the thermometer is concerned: they roost on the dried stumps or branches inside, and never sing more sweetly than during the winter snowstorms. Like children, they seem to derive amusement from the falling snow. The birds like eating snow too. When the frost is so severe that the water freezes almost as soon as it is given to them, which has been the case this winter, I take care to shovel some snow into the cage, and so long as they have snow to pick, or water to drink, they do not mind the cold. They enjoy a cold bath, however, as long as the frost does not prevent them having a dip, which, by having a little water only on the top of the ice, they were long able to do, till at last the ice in the pan was one frozen mass and they had to satisfy themselves with the snow. Turn your canaries out-of-doors in the warm air of July or August, and as the cold of winter comes on gradually they will month by month get accustomed to it. My experience for years has proved that if they are protected from a draught or current of air through the aviary, you may fearlessly expose them to any amount of cold such as can get to them from a southerly aspect, protected (only to prevent them flying away) by a wire netting.—W. BUDDEN, *Ipswich*, in *Science Gossip*.

Rabbits.—What are the most hardy and profitable rabbits to keep? Is groundsel injurious to them?—F. A.

Rearing Hares.—Feed it frequently with milk from a spoon. Later on it will eat Lettuce leaves and other green stuff. A friend of mine has one brought up in this way. It is particularly fond of Primroses; it eats bread also, and is quite tame.—T. H.

Budgerigars.—The birds are both males. The nose of the female is a light buff or fawn colour. The breeding season commences in December, and continues until the moulting season, about August. They will not breed until they have been two years in confinement.—H. D. F. D.

—"M. F.'s" birds are both males. The hen is distinguished from her mate by the absence of the blue on the beak, otherwise the plumage is identical in both sexes. When they are acclimatised they begin nesting arrangements about the same time as canaries; but newly imported specimens are very irregular; they may begin at any time of the year. When they are about to do so the cock continually feeds the hen. It is very important to keep them well supplied at this time with green food.—A. D'A.

Lice on Canaries.—I have an excellent canary whose cage has lately become infested with small insects, which, I am afraid, will worry the bird. Will "A. D'A.," or some other correspondent inform me of a remedy?—L. R. F.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 3s to 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus, 4s to 9s; Pelargoniums (zonal), 3s to 6s.; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Camellias, 1s to 4s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses (forced), 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Deutzia gracilis, 9s to 18s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 3s 6d to 7s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 6d.

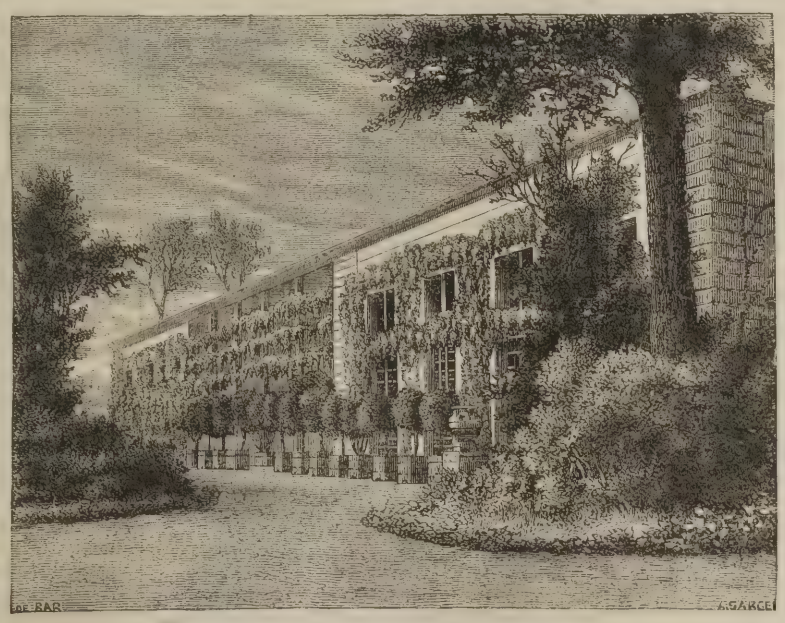
Vegetables.—*Per 100.*—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 9d to 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 3d to 5d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Saveys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING ILLUSTRATED.

VOL. II.—No. 65. *SATURDAY, JUNE 5,* 1880. PRICE ONE PENNY. REGISTERED FOR TRANSMISSION ABROAD.

THE WISTARIA.

As this grand hardy climber is now coming into bloom, it seems an opportune time to say something of its culture. It is well known to be one of the finest hardy plants for covering walls, cottages, trunks of trees and other bare spaces, whilst when grown in pots in the form of standards for the decoration of large conservatories in early spring it is an excellent plant. When the Wistaria is used for covering the side of a house or to form a summer-house, or afford shade to a balcony, some definite system of training should be adopted in so far as to decide what piers or columns are to be covered, and whether the plant is to be trained along the cornice or to be carried yet farther upward to screen a window. When this is done and the necessary rods or wires have been provided, the proper shoots for the use required should be selected, and thereafter all others that may interfere with the design to be carried out should be rigorously cut away. A system of pruning nearly similar to that of the spur system in Grape Vine pruning should then be adopted—or rather a system combining that with the system generally adopted for fruit trees which bear their flowers and fruit on old spurs.



HOUSE COVERED WITH WISTARIAS.

The Wistaria, though a climbing plant like the Grape Vine, produces its flowers from old spurs like a Cherry, a Plum, a Pear, or an Apple tree. In July or August all shoots or eyes on the main or leading stems that may be reserved should be pinched back to within 1 ft. of the main stem, in order to check the rampant growth. These shoots will again break into growth from the buds just behind where the shoot was stopped off; and after they have grown a few inches in length they should also be stopped in the same way. The result will be the formation of flower spurs at the foot of the shoot first shortened. Early in the succeeding spring these shoots are to be cut back to within five or six eyes of the main stem, and the young shoots from these eyes are then to be treated in the same way as those of the previous year—and so on, year after year. By following this course of treatment, long continuous wreaths of flowers will be produced. When the leading stem or stems have reached the length it is intended they should attain, they should also be stopped, and the final effect will be an orderly and trim appearance of the plant, which yet will not appear formal and stiff. Treated thus, the Wistaria may also be grown on the lawn, or as a specimen plant in the shrubbery—either on single stems or as ordinary shrubs with several stems. The Wistaria will thrive in any ordinary garden soil, providing it is well drained. Like all other climbing flowering plants it well repays any little extra pains that may be bestowed on the planting. The soil should be taken out to a depth of 18 in. or 2 ft., and should be turned over several times at intervals of a week, so that it may become thoroughly sweet and mellow. At the same time some well-rooted manure may be added to it, and if the soil is naturally of a light description, an admixture of sandy loam would also prove beneficial. If, on the contrary, the soil is of a stiff, tenacious character, mix with it some leaf-mould or wood ashes, and if possible a little mortar rubbish, or small pieces of brick. In such a compost the Wistaria will grow amazingly. The width and length of the border thus made must be left to the discretion of the operator—who should, however, bear in mind that all plants are benefited by an extended root room in congenial soil.

CAMELLIAS OUT-OF-DOORS.

I HAVE been much interested in the articles of late upon the hardiness and culture of the Camellia. It is a matter of surprise that growers of this very beautiful evergreen do not exercise a little more courage than they have hitherto done, and follow the example of a gentleman residing here, who owns a property near the sea, and who has made the cultivation of the Camellia a speciality. In conversation with him he tells me he has the finest collection of Camellias in Europe, numbering something over 260 varieties. These I have had the pleasure of seeing on several occasions when in full bloom. Some of these Camellia trees—for I can call them nothing else—average from 25 ft. to 30 ft. high, and, during the spring months, are literally covered with splendid bloom. One in particular during my visit claimed my attention: it was the fine old C. alba plena. The worthy proprietor told me that he had attempted to count the blooms on this one tree that morning, and having got as far as 1500 he gave it up, feeling convinced that the tree had considerably over 3000 blooms upon it. Many of the trees in this lovely garden have boles 12 in. to 15 in. in circumference. I regretted much to see a fine row sawn down to make room—the roots and about 2 ft. of the stem being left, each of which measured 12 in. in circumference. The trees when growing averaged from 18 ft. to 20 ft. high. The bill-hook and saw are frequently in requisition, the trees making such free growth. I asked the owner about

the growth these Camellias made annually. He replied that it depended upon the sort; some were rather slow, but many made shoots 12 in. or more per annum. Being fond of the Camellia he has them trained against the walls; and here it is a sight once seen never to be forgotten. Some hundreds of yards of wall 12 ft. high are covered with every beautiful variety a refined taste can select, nothing inferior being allowed anywhere. Hundreds of visitors call, and are abundantly supplied with baskets full of perfect blooms, the esteemed owner being prodigal in his gifts of the Camellia. It is "cut and come again if you want more;" and yet with all this liberality no blanks or empty space is made. The soil of which this garden consists is a black loam, resting on a clay bed. The garden is well sheltered by various evergreen and deciduous trees, but withal the proprietor tells me that in some winters he has lost many evergreens, such as Laurels, Laurustinus, and Escallonias by frost, but never a Camellia, which has been equally exposed. This I can endorse, having seen several evergreens killed to the ground this severe winter; but in no case have I seen a Camellia suffer even so much as burnt foliage. There is no secret about the cultivation of the Camellia; it is simply planted out like any other shrub in the ordinary garden soil. For the first year the plant makes but little growth, owing to its having been grown under glass before purchasing. The second year the shrub moves a little faster; and by the third season it is fully established, and then grows as fast as a Laurel. These outdoor Camellias are more prolific of bloom, and for quality and shape are not to be equalled by any grown under glass. This may be due to increased vigour, but one drawback is their coming out when hoar-frost or heavy rains are frequent. Even with this disadvantage the Camellia, as an evergreen shrub or tree, in beauty of foliage, symmetrical growth, and hardiness, holds second place to no other; and though the expanded blooms may be injured by frost or rain, such is the abundance of buds that it is only for a day or two and the trees are beautiful again. I say to all readers of GARDENING ILLUSTRATED, try outdoor cultivation, and do not expect much for the first two or three years—it is not thought much to wait that time for many other trees to become established—then plant and have patience, and in due time you will reap your harvest of lovely Camellia blooms. OMEGA.

A Hardy Edging Plant.—As a permanent edging, from 1 ft. to 2 ft. in width, to beds or borders of shrubs, either in place of a Grass verge or margin, or just inside the turf when turf is used, Mahonia repens may be effectively employed. Two or three year seedlings, planted in two or more lines 6 in. apart, will, with a little attention and management, make an edging superior to Ivy and most other materials commonly employed. Although not at all particular as to soil, it, like everything else, does best when well treated; therefore the ground shonld be trenched up and well-prepared some time before planting. The plants may be planted deeper than is desirable with most hard-wooded plants, as it will soon strike root from the buried portions of the stems. It will bear trimming in with the shears, but it is far better to do the necessary pruning with the knife, as the leaves that remain are left intact, and will not present a ragged appearance as when the shears are used. It may be kept for years in a dwarf compact condition, by cutting well back every spring after flowering, and pinching out the point of a shoot occasionally during the summer. Of course, this close cutting back would prevent its fruiting; but, although this might in one respect be a loss, in others it would be a gain, as a heavy crop of fruit has a tendency to exhaust the plants, and might cause them ultimately to assume a ragged outline, which, in the case of a verge or edging of this kind, would not be desirable. Although I have only spoken of this plant as useful for verges or edgings to shrubberies, it might also, now that advantages of introducing more variety of a less ephemeral nature into the flower garden is beginning to be recognised, be used as edgings next the Grass, in either a straight or any other outline. If this and other plants of a kindred character were more used, there would not be such a dreary blank when the frost came; and with a few additions from the reserve garden of spiral-growing plants, with bulbs and annuals, a very respectable winter display might be got together with little expense. But when nothing but tender plants are used for bedding, and these have to be entirely replaced, any attempt at winter or spring gardening becomes expensive.—H.

Privet Hedges.—As a division between compartments in kitchen gardens or allotments there are few more serviceable hedges than those made of Privet kept cut down tolerably low, say so 3 ft. or 4 ft. If clipped early, say in the first or second week in June and again in August, they become densely furnished with young spray-like growth, and remain quite covered with green leaves the whole season; but if left uncut until the end of the summer the whole of the undermost leaves are lost, and after cutting, a bare stubby aspect is the result, altogether spoiling the general appearance of the hedge.—J.

VEGETABLES.

HOW TO GROW COLEWORTS.

IN mid-winter, when fresh green stuff is more or less scarce, the Colewort, owing to its tender juicy nature, proves a most delicious dish, and amply recompenses anyone for the little care that is necessary to procure it in good condition. Great exactitude is required as to the time of sowing; in this particular point lies the mainspring of success, and a little divergence in this respect either one way or the other will suffice to entail disappointment. In Colewort culture there is always a danger of running to extremes: either the plants may not have time to heart sufficiently, or they may run too much to head, in which case they are more susceptible of injury in inclement weather. Now, as the sowing time falls just in the height of summer, when the attention is apt to be distracted therefrom by press of work, it often happens that the proper moment passes unawares. Then, again, the weather being often very hot and parching, the seed, in the ordinary way of sowing, does not germinate quickly, thereby creating such a loss of time as cannot possibly be recovered. The seed should be sown not later than the first week in July, and it is not advisable to be much earlier in so doing, as if the sowing and planting be done then, there will be just the proper time to bring the heads to the desired substance.

The seed should be soaked for forty-eight hours before sowing; in the meantime, let a piece of good mellow soil be prepared, and draw some drills therein about 9 in. apart. If the weather be very dry, water the drills well before sowing the seed in them, which it is not well to do very thickly, as, if the seed be good, nearly every grain will come up. When sown, the bed should be covered with a few boughs, which will exclude birds and help the soil to retain its moisture. In a few days the seed will be coming through, when the shading must be removed. By this manner of sowing success is ensured, even in the most trying weather; in fact, owing to the heat of the soil, germination takes place more rapidly in a dry time. As soon as the plants have acquired sufficient strength, they should be planted out upon a piece of moderately rich ground, in rows about 1 ft. apart and 9 in. from plant to plant. It is as well to make two plantings, drawing out the strongest plants first, and leaving the remainder for a week to gain strength. It sometimes happens, too, that it is hardly possible to attend to them all, but if a portion be thinned out the rest may stand without injury until it is convenient to plant them.

A good watering now and then in the earlier stages of growth will be found beneficial, and the soil should be well stirred amongst them, keeping them free from weeds. They are liable to the attacks of a brown grub, which eats them off at the collar. When this is perceived they must be looked over now and then and the maggot destroyed; it will generally be found concealed just under the soil close to the stem. A dressing of soot is of great service in keeping them away. A few plants should always be kept in hand to fill up the blanks thus created. In mild and ordinary winters the Colewort will stand uninjured, and may be cut fresh and tender the whole winter through. There sometimes comes a season, however, when they get entirely destroyed. Those who would like to save their crops which they have been at the pains to grow should endeavour to secure a little protection for them. This is best effected by taking them up and laying them in a sheltered place where they may be covered in very severe weather by a few shutters or some Fern. This really delicious vegetable is worth taking some pains to secure, and it is no small satisfaction in a severe winter, when green vegetables generally are scarce and of poor quality, to be enabled to keep up a supply of tender Cabbages.

Radish Roots and Pods.—Although these are commonly used in mixed pickles, it is rare that they enter into the ordinary pickling conserves of the domestic household. They are, however, singularly pleasant eating even in a raw state, and might be well mistaken for crisp young Radishes, as they have the flavour and gentle stimulating heat of that root when in its young state. The seed pods of the long white Californian kind are peculiarly good, and would make, if served up when young, a useful adjunct to the breakfast or tea table. To have these in abundance at this time of the year seed of this Radish should be sown in a drill about the middle of September, and the plants will get large enough to stand the winter well. In good ground the produce of pods in the spring will be so considerable that it may with frequent gatherings be extended over several weeks, whilst the plants will need Pea sticks or cords for their support. In pickling, nothing further is necessary than to strip off the points of the pods, and then treat them as Gherkins, Onions, or other subjects, are prepared. To get good roots of the white Californian Radish, seed should be sown at midsummer, as it will then be found that large fleshy roots for winter consumption can be had in abundance. Grown quickly, it is very crisp and pleasant, and makes a capital winter salad.—A.

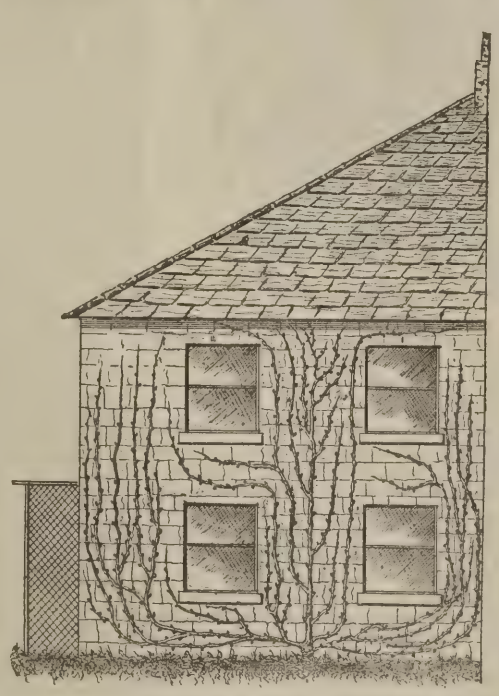
Vegetable Marrows.—These are plants the culture of which might be profitably extended in small gardens, not only for use as vegetables in summer, but also when fully grown and ripe to form a preserve for tarts and puddings during the winter. Where land is scarce they may be planted near to and trained over the faggot-heap, or up the sides and over the roof of any low building with a favourable aspect. Open holes for them from 6 ft. to 8 ft. apart, and 3 ft. in diameter by 2 ft. deep; fill up with anything that will ferment, and furnish a slight bottom-heat in which to start them; and that will be sufficiently decomposed when the plants commence bearing and require support to supply them with food. There is nothing better than the manure from a pig-stye or cow-house, and this may be eked out with weeds, short Grass, or trimmings of any kind that can usually be met with in every garden. When the holes are filled in level with the surface and made firm, the earth should be formed into a hill with a hollow in the centre, into which the plants or seeds should be set. If there be a frame or pit, the seeds may be sown in small pots about the middle of April, and planted out about the middle of May. It is hardly advisable to sow them in heat, the probable effect of which treatment being to draw the plants up weakly, unless they are removed to a cool frame as soon as they

are up. There is a far better prospect of a crop from strong vigorous young plants raised in a cold frame than from larger plants raised in heat. Where there is no convenience in the way of glass the seeds may be sown on the hills—three seeds to each hill—in May, and an inverted flower-pot placed over them; or plants can generally be purchased for a few pence. When the young plants break through, the flower-pots must be removed in the daytime and replaced over them at night until all danger from frost is over, until they become too large to be so covered. There are other simple contrivances that may easily be improvised to shelter in spring not only Vegetable Marrows, but many other subjects requiring protection. When the plants begin to run they should be pegged out, and the strongest shoots occasionally stopped, so as to fill up all vacant spaces. It is an excellent plan to mulch the ground occupied by the Marrows with long littery manure, or anything that will keep the earth cool and moist—which treatment will save labour and materially benefit the crop. In dry weather copious waterings, with occasional supplies of liquid manure, will be very serviceable to the plants; they will add much to their productiveness and discourage the attacks of mildew. But there will be less necessity for this if the ground can be heavily mulched. The Long White Vegetable Marrow is the best and most profitable kind to grow. When used as a vegetable it is best cut before it gets too large. Later on in the season two or three may be left for preserving for winter use, but the large ones rob the plants more than the same weight of small ones do; therefore they should not be allowed to attain a large size till the plants are very strong and well able to support them.

FRUIT.

VINES ON OPEN WALLS.

In reply to your request to explain Hoare's (long rod) system of growing the Grape Vine on open walls, I propose to commence with the accompanying sketch, showing how Vines are usually trained on small suburban or country houses. One entire side of a house is thus commonly given up to a single plant, and it is not uncommon to see two and sometimes three sides covered in like manner, the greater part of the growth being beyond the reach of a person standing on the ground. By training as in this sketch ("How not to do it") the cultivator has the maximum of trouble and labour and the minimum of fruit; as with such an array of old wood on the walls, all of which has to be annually nourished, the young canes upon which the fruit is borne are too much sheltered to be properly ripened, and the most of the small quantity of fruit that is grown is borne upon the canes farthest removed from the root, and the most inaccessible to the cultivator for the purpose of thinning, bagging, &c.



How *not* to do it. Fig. 1.

The instances of large crops of Grapes taken from Vines covering a large extent of walling are very rare. I know several Vines reputed to have yielded a hundredweight of Grapes in one year, but have never seen one that could be estimated at more than a third of that quantity. Moreover, instead of being an annually increasing crop, as it must be by Hoare's system, it is known that a good return ought only to be expected occasionally, when the Vine has had a few years' rest, and when an exceptionally hot summer occurs. In the above sketch the pruning by the spur method would take about 400 cuts with the pruning knife unless the operator had the sense to substitute a few of the best young canes for some of the old wood, leaving from fifteen to twenty eyes in each, instead of shortening them like the smaller twig-like growths to two or three eyes. But it must be remembered that whether 300 or 400 wounds are thus made the effect on the constitution of the plant is very serious, and this cannot be shown to be necessary.

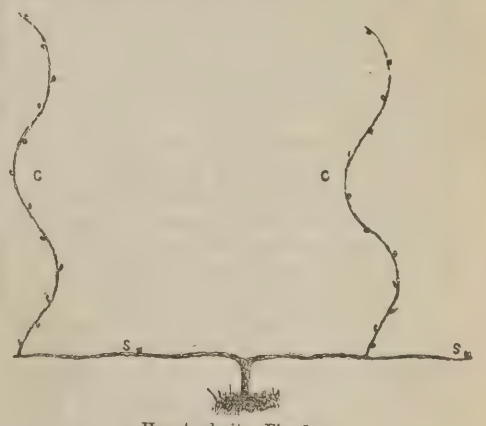
Let me suppose that your readers have planted some young Vines last October. By Hoare's system they should then have been pruned to two eyes only. The cut is to be made from the opposite side from the second bud, and 1 in. beyond it, in an upward direction, with a very sharp knife. One of the two shoots that push from these buds is to be retained after July 1 next, and the other then cut out. Any other shoots which may appear are to be rubbed off. On Nov. 1 the Vine is to be again cut down to two eyes. The roots should be covered with manure from November 1 till March 1. The next year is the third year of the Vine's age, and the same management has to be pursued as the previous year on July 1, choosing the best of the two canes, and sacrificing the other. If any fruit shows pinch it off immediately. On Nov. 1, the Vine being 2 in. in circumference at the ground, it is to be pruned to three eyes, as two shoots are to be permanently retained for next year. The roots require again to be covered with manure till March 1. The fourth year the young shoots must be very carefully trained to the wall, and on July 1 the weakest of the three is to be cut out. On September 1, pinch off the tops of the shoots. This will cause the buds remaining to gain strength until November 1. when the shoots are to be pruned to seven eyes. The Vine now consists of stem and two canes, and requires no more old or parent wood until it is nearly twenty years old. The girth of its stem is now 3 in., and in the next year it may be permitted to bear fruit not exceeding 5 lb. weight.

As encouragement to adopt this system, I may mention that an annual increase of girth amounting to ½ in. may be expected, and that every such ½ in. means another 5 lbs. of Grapes; so that at 16 years of age the Vine should be 8½ in. in circumference, and mature 60 lb. weight; and this leads me to point out that Mr. Hoare claims that the Vine is the only fruit tree that will in this climate in the open air, south of 54° latitude, produce its annually increasing crop without fail.

The young Vine may now be said to enter on its fifth year, and consists of a short stem of old wood and two young canes each containing seven buds. On February 1, or as soon as the weather is open, remove these canes carefully from the wall, and cut out the first, second, fourth, fifth, and sixth buds; then bend these shoots down to a horizontal position and securely nail them to the wall, as shown in figure 2. On May 1 train the two shoots that push from the buds 3 and 7, as the dotted lines 1, 2, 3, 4. On September 1 pinch off the tops of the shoots to let the sap accumulate in the buds below. Take your 5 lb. of fruit from the shoots Nos. 2 and 4; I recommend this as in

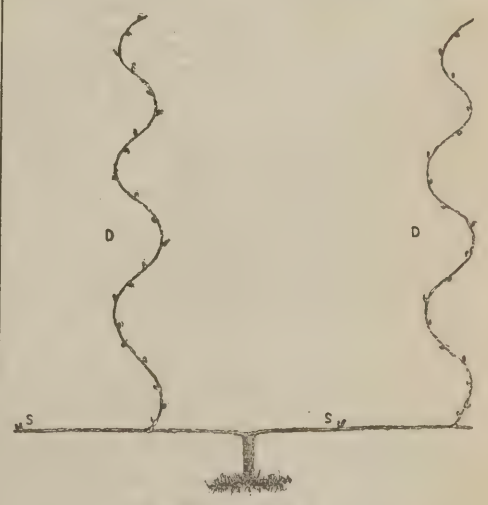
Fig. 2.

harmony with Hoare's teaching, although he does not give this instruction. These shoots have to be cut out, all but the lowest bud, as soon after October 1 as the fruit is ripe. Nos.



How to do it. Fig. 3.

1 and 3 are to remain on the wall all the winter, and be the fruit bearers of the following year; and what is necessary is to have their wood and buds well ripened; therefore I recommend that



How to do it. Fig. 4.

they be not allowed to bear fruit the first fruit-bearing year, but that function assigned on Nos. 2 and 4 exclusively.

Liquid manure may be applied every second or third day during hot weather; blood is very valuable, but it must be quite fresh, and I think on one day in the year—say about June 1—quite enough. The best manure is bones—uncooked ones for choice—placed liberally along

with brickbats and old lime and mortar under the Vine when planting. Some time between October 1 and November 1, you cut out Nos. 2 and 4, leaving only the lowest bud on each; and you shorten Nos. 1 and 3 to, say twelve buds each. Ten would represent the proper number, as I shall try and show in my next, but say twelve in case of accidents. This makes twenty-four buds on these two canes, which, having been trained close to the wall during their growth, and only shaded by their own foliage, are thoroughly ripe, and can be depended upon for their 10 lb. of Grapes in the next (the sixth) year. On March, 1 the sixth year, the shoots or canes Nos. 1 and 3 are to be trained as in figure 3, where they are serpentined on the wall, as marked cc—to prevent the sap flowing too quickly to the furthest buds, and to ensure the lower ones their full share of nourishment.

I have always trained mine after the fourth year in this serpentine fashion while green and tender, and find the result such as to warrant my recommending it. It is difficult to bend and secure canes on the wall in a different shape from that in which they are grown; and few amateur gardeners would possess the skill and patience necessary to do so without injuring the precious buds.

But here we have arrived, as in figure 3, "How to do it," at the proper permanent shape of the Vine in full bearing. This sixth year the young canes are carefully trained which push from the spurs ss, occupying a clear space on the wall, not interfering with the fruiting shoots of last year's canes, cc, and not interfered with by them, and are carefully trained at full length until September 1st, when their tips must be pinched off to stop their growth, and prepare for the pruning or shortening in the following month.

During the same period from the time in May when the young shoots are put out by the twenty-four buds on the two canes cc, these shoots have to be most carefully nailed to the wall right and left of the parent wood; and when the flowers are all set the shoots are to have their ends pinched off 1 in. beyond the leaf following the last flower or bunch of Grapes. Laterals or false shoots which push from bases of buds must not be torn off, but shortened with the thumb nail, same as the fruit-bearing shoots, leaving one leaf on, which will do its share of the year's work in ripening the proper juices of the Vine essential to the healthy growth of the wood and roots below. The reader will thus see plainly that the fruiting shoots of the canes cc do not come near each other, but leave plenty of room between for the young canes coming up, which will now give evidence that we are on the right road by their vigour and promise, most of their leaves being 6 in. or 8 in. and some of them 10 in. broad. When the pruning season after the vintage is reached, we prune the Vine very easily by four cuts as follows:—

The spurs of the cane which have borne this year's fruit, with one bud left on each, are in figure 4, "How to do it," shown by ss. Two cuts account for these, and two cut mores serve to prune the young canes DD, leaving on each fifteen or sixteen buds, together thirty or thirty-two, to produce the 15 lbs. of Grapes we confidently expect in the following year. Sometimes we get two bunches out of one bud, and sometimgs a bud fails altogether, but, one with another, we calculate ½ lb. of Grapes to each bud when Clement Hoare's rules are observed. H. M.

May and Late Duke Cherries.—By having trees of each of these varieties on walls on the warmest and coolest aspects, a succession of excellent dessert fruit may be obtained as long as Cherries can be said to be in season. These kinds, too, have another advantage, and that is, they require scarcely any pruning in order to induce fruitfulness, as they form naturally fruit-buds and spurs on the current year's wood, and with a little pinching in summer the winter pruning may be almost entirely dispensed with. As a succession to the supply from walls, these varieties are extremely useful trained as dwarf bush trees, and if well pinched in they may be grown as close together as Currant bushes, and be quite as fruitful. Grown in this way they can be readily protected from spring frosts or the attacks of birds by means of fish nets, which should be securely fixed before the fruit changes colour. The Late Duke is exceptionally late in flowering; some trees of it on a north wall are only just expanding their bloom, while Morellos and other late varieties are in full flower. The black fly is a great drawback to successful Cherry culture; therefore, as soon as it is observed, the points should be dipped in Tobacco water, and in a short time afterwards the whole tree should be well washed with the syringe or garden engine. When grown as a wall tree, the fan system of training Cherries is decidedly the best.—J. H.

House and Window Gardening.

A Graceful Table Plant (Sonchus elegantissimus).—This plant is remarkable for its soft green finely-cut foliage, and extremely graceful habit of growth. As a table plant it is peculiarly interesting, the leaves appearing semi-translucent under artificial light. It is easily cultivated in any warm plant-house or pit, in a compost consisting of turfy loam and leaf-mould in nearly equal proportions, with the addition of a little coarse sandstone grit to keep the whole porous. Several other varieties of Sonchus form very graceful decorative plants, and deserve a place in most gardens where slender-growing foliage plants are desired for dinner-

Sonchus elegantissimus.

table decoration or small vases in the dwelling-room. The plant here figured was sent out a few years ago by Messrs. Henderson & Sons, of the Pine Apple Nursery.

Window Plants.—Those who attempt the culture of plants in windows must bear in mind that success can only be attained by means of patience and perseverance, and that many failures will occur before the necessary amount of experience is gained. Strict attention to cleanliness, care in watering, varying the amount of water given according to the season, the nature and requirements of the subjects grown, and growing only such plants as are suitable to the situation, are the principal points to be kept in view. As a rule, soft-wooded flowering plants do not succeed in the close atmosphere of a constantly heated apartment; they become too much drawn, and consequently fail to attain sufficient vigour of constitution to develop their flowers satisfactorily. Where gas is burnt and a more or less vitiated atmosphere prevails, only plants having foliage of such a character as will allow of its being easily cleansed should be grown. The India-rubber plant, Dracæna congesta, D. rubra, D. Cooperi, D. terminalis, Grevillea robusta, Aspidistra lurida variegata, and such Palms as Corypha australis, Chamærops excelsa, Rhapis flabelliformis, may be maintained in health for a long time if they are carefully sponged with tepid water twice a week. Ferns, such as the Maiden-hair, Asplenium bulbiferum, Platyloma rotundifolia and the Elk's Horn Fern will also thrive if the fronds are well sprinkled now and then. There are also some of the varieties of Selaginellas, such as the Kraussiana and Apoda, which, if covered with a bell-glass, so as to maintain a moist atmosphere around them, will thrive perfectly well, and by their freshness and verdure will be a continued source of pleasure to their owner. In rooms which are kept cool, or where a fire is only occasionally lighted, Geraniums, Fuchsias, Lobelias, and such like free-growing subjects, may be maintained in perfect health. Many hard-wooded plants, such as Cytisus, Coronillas, Azaleas, Camellias, Acacias, &c., will make good growth and flower freely in such situations, provided that due attention be paid to ventilation, and that, after growth is completed, the plants are placed for a time in the open air. Care must, however, at all times be taken not to expose the plants to cutting winds or chilling draughts; neither should they be placed in the open air unless very mild weather prevails. With respect to watering, wait until the soil is dry, and then give enough water to moisten it through. Acacia lopantha, Grevillea robusta, Ficus elastica, and Dracæna conferva, are all of free growth, and would be suitable for the situation mentioned. Keep the Musk in a light situation; admit as much air as possible, placing it in the open air on mild nights.—J. C.

Houseleeks.—I do not think anything has been said about the beauty or utility of our Houseleeks. I have a variety of them planted on a low roof abutting on my garden; they are evergreen and very pretty at any time, but the flowers are most beautiful, and they have the advantage of adorning a place which would be otherwise bare and unsightly. They only need planting in a mixture of cow manure and sandy soil, and will then take care of themselves.—HARTSIDE.

ROSES.

Removal of Suckers.—Constant attention should now be paid to the removal of suckers from Rose stocks. Where the plants have been allowed to remain for a considerable time without removal, these suckers are usually a source of continual annoyance, especially in such stocks as support the weakest-growing varieties of Roses, as in their case the heads of the plants are not sufficient to draw the full quantity of sap which the roots provide; hence the disposition to break out into this underground growth. In the case of stronger-growing varieties, where the heads have been let to attain a large size, there is generally a less inclination to throw up suckers. Even where standard Roses are grown by the sides of walks with their roots under the turf, and where the suckers run underground for a considerable distance before appearing above the surface, it is always the best to trace them right to the base from where they proceed, removing the soil with a planting-trowel or similar inplement, so as to admit of this being done, in which case the operation will be effectual until fresh suckers are formed; whereas, if the shoots are simply broken off at the point where they appear above ground, they keep on repeatedly making fresh growth, which, so far as diverting the strength of the plant from its legitimate course the support of the head, involves a loss little less than if the suckers were not removed at all.

Thinning of the Buds and Removal of Decayed Flowers.—Large Rose flowers, for filling vases, baskets, and the like, are now held in very much greater estimation than they used to be, consequent upon a taste acquired through the large perfect individual blooms that are seen at the exhibitions of Roses; but these large flowers can only be obtained by thinning the buds on the strong shoots, which alone are able to produce such; and where there is a disposition to sacrifice to some extent quantity to quality, the strong shoots should have the buds thinned, particularly where the plants are grown on their own roots and pegged down, under which system the later growths made from the base of the plants are generally very strong and calculated to produce large, fully-developed bloom. To assist the formation of young wood that will give a succession of flowers through the summer and autumn, the first blooms, immediately they decay, should have the seed vessels removed, which will greatly promote second growth.

Manure Water.—In soil where there is any deficiency of enriching elements in the shape of solid manure, either incorporated with it or laid on the surface in the shape of mulching, the ability to produce flowers later on will be very much increased by the application of manure water, which in the case of Roses, as other plants, is much quicker in its effects than through any other means by which manure can be applied. There is no time through the whole spring or summer when it can be used with so much advantage as the present, when there is a conjoint vigorous extension of both roots to absorb and shoots to assimilate it. To Roses on walls it will be especially beneficial, and in their case it can hardly be given in too large quantities. Roses in all positions will bear manure water applied stronger than most plants.

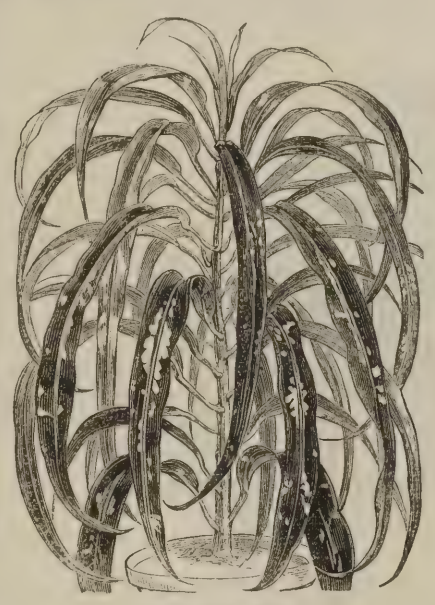
A Prolific Rose.—I have a Maréchal Niel Rose tree, planted two years last autumn in a greenhouse 24 ft. by 8 ft., and trained over the roof like a Vine, from which, since the 19th of March last, I have cut 700 Roses. The tree has made a rapid growth, and appears to be in a very healthy state by the foliage, which is a lovely dark green. The blooms have been very fine and splendidly tinted.—G. Lawrence.

GLASSHOUSES AND FRAMES.

CROTONS AND THEIR CULTIVATION.

Crotons undoubtedly rank amongst the handsomest and most useful of hothouse, or what are called stove plants. They are not difficult to grow, but judicious care is required to bring them to perfection, a condition indicated by good and well-coloured foliage, be the leaves broad or long, according to the variety. They are subject to red spider, and when this pest gets the better of them it destroys their appearance. Much depends, therefore, on keeping them free from spider, while at the same time they should be grown in a tolerably high stove temperature, and fully exposed to the sun—conditions which rather encourage the enemy; but, on the other hand, too much shade spoils the plants by turning the foliage nearly green. Crotons may be propagated by means of cuttings made of the young shoots. These strike readily in a stove temperature, if covered with a bell-glass and plunged in a bed where there is a little bottom heat; but they will strike equally well, though not quite so soon, on a shelf in the stove, if the cutting pot be plunged in another a little larger, and the cavity round the sides be filled up with Moss or soil; one cutting in a 3-in. pot is sufficient. When well-rooted, they should be shifted into a slightly larger size, and the pots should be well drained; but an inch of crocks, or less, will effect this, for it is a bad plan to fill the pot half or quarter full for such subjects merely as a precaution, as some do. Scores of plants are ruined through being over drained in a flower pot. It should never be forgotten that the evaporation from the sides of the pot itself is almost sufficient to dry up a ball of soil in a day, unless the pot is a very large one. The compost which suits the Croton best is one composed of loam and peat in equal quantities, with a good sprinkling of silver or good river sand, and some well-rotted cow-manure; but those who have not these materials may employ without the least hesitation common garden soil, put through a ½-in. sieve, and mixed with fine leaf-mould and sand sufficient to prevent it from binding. If the compost can be squeezed tightly by the hand when moderately moist, without binding like clay or a lump of loam, it will do; or, to be more explicit, as the inexperienced may misapprehend these terms, let the sand and mould be pretty well seen in the compost after mixing—the sand especially, as its presence is more apparent than real, owing to the difficulty of incorporating it with the particles of soil. The same, indeed, may be said of the leaf-mould, which is soon eaten up in a body of loam, and the ball of soil about the roots has quite a different appearance at the end of a year. These remarks apply to all made-up composts generally. Sand should always be freely used when any doubt exists about the compost becoming adhesive eventually. The same kind of compost suits Crotons at all stages.

Young plants may be shifted as often as they require it at any time during the summer, but good-sized plants should have a liberal shift early in spring, sufficient to last them a year, if a continuous and good growth be expected. The plants only begin to make growth in earnest when the roots begin to fill the pot, and a second shift only checks them. The lightest part of the stove is the best place for Crotons, and, in order to have good bushes well furnished to the bottom, the plants should be lifted up clear of their neighbours on inverted pots, to give them light and air all round. As respects their general culture, they need regular and copious waterings—particularly old plants that have been frequently shifted, as the centre of the ball is apt to become too dry, and when that happens, steeping must be resorted to; cleanliness and syringing overhead during fine afternoons, together with a moist atmosphere in the house generally, must also receive attention. Exemption from mealy bug and red spider will depend upon a free use of the syringe and soft water. Hand-washing the leaves of such dense-growing sorts as C. angustifolium is almost out of the question, putting aside the danger of injuring them in the operation; but the brush and hand must be used if the bug gets established among the shoots to any extent; and, if spider be bad, drenching the plants with water in which sulphur has been stirred after being dissolved in milk, will arrest its ravages. A healthy growth, however, promoted by occasional liberal top-dressings, and applications of liquid manure, is the best preventive.



Croton majesticum.

The Croton needs very little training, and staking is out of the question. Nothing looks better than a freely-grown, naturally-shaped bush. It is admissible, however, to tie the branches out for the sake of symmetry, and because they are apt to crowd each other disadvantageously; but more than this is unnecessary. A few pieces of twisted bast run without tight tying from one limb to another, so as not to be seen, will accomplish the object perfectly well. Plants that have grown well during the summer retain their beauty through the winter. It is only necessary to reduce the supply of moisture a little at the root and overhead; but they should not be exposed to a temperature lower than 60°, and if it be kept at from 65° to 70° in mild weather, all the better. Nothing disagrees with them so much as cold, which causes the leaves to drop off, and altogether paralyses their energies for a time. To have good foliage at the end of winter, and to start the plants into growth pretty early in the season, is the way to keep Crotons thickly furnished with leaves, upon which their beauty depends. As regards varieties of Crotons, they are now as plentiful as scarlet Pelargoniums, and as they vary so much in form and colour that to make a selection to suit the taste of the cultivator would be impossible, the best way is for each grower to visit some good nursery, and select for himself. The kind represented by the accompanying woodcut is a very graceful one which we saw a short time ago in Messrs. Carters' nursery.

Annuals for Pot Culture.—Linum coccineum grandiflorum is a very distinct plant, and a useful one in pots through the autumn. The seed of this should be soaked for a day or so before being sown, There are several varieties of dwarf Lupins that make good pot plants, and are very fine and useful for late summer decoration. Two of the best are Lupinus nanus and Lupinus nanus albus. Another grand plant is Martynia fragrans. This is one of the finest annuals grown. In addition to being beautiful in colour, it is very sweet scented and is a fine subject for the conservatory in the autumn. This is a Mexican plant, and one which requires warm treatment all through the growing season. Its seed should be sown early in spring in a brisk heat, and the seed-pan must not be allowed to get dry during the period of germination, otherwise the seeds are apt to dry up after the outer shell has burst. A close warm frame, with full exposure to the sun, will suit this plant through the summer months. Avoid wetting its foliage with the syringe, and water carefully at all seasons. Very liberal drainage must be given, and the soil should be light, rich, and sandy. The plants will require pinching several times through the growing season to keep them dwarf and bushy, and they must be shifted into fresh pots about once a month or six weeks. Very useful-sized plants of this can be grown in 8½-in. pots. Nigella damascena, or Love-in-a-Mist, is another plant that merits attention; when grown in pots it is both striking and effective. Some of the best varieties of Phlox Drummondi are well worth some trouble in order to have them good in pots. They are a useful plant for decoration, and very effective.—R.

Auriculas.—At no season of the year does green fly more persistently congregate on Auriculas than at the present. They cluster about the hearts of the plants and on the undersides of the leaves, and their presence in force is detrimental to the well-being of the plants. A good fumigation with Tobacco smoke is the best and most thorough eradicator—applying it strongly, too, for it will not injure the plants, and following it up with a good brushing by means of an artist's brush. If the plants be looked at daily, and the brush applied for a few minutes, the enemy is soon routed. There is a small green caterpillar also that needs to be sharply looked after. He gets into the heart of a plant, and feeds on the tender leaves, and soon eats away the heart. A good Auricula cultivator makes a constant practice of looking over his plants, and he soon detects if anything is wrong. If, on the other hand, Auriculas are neglected, insiduous foes soon storm the citadel. Auriculas bearing seed are best left in their blooming pots till the harvest is gathered, but as the soil at this time of the year, through frequent waterings, is apt to become sour on the surface, and covered with Moss, it should be frequently stirred. The plants that have been re-potted, if kept cool and shady, will not require much water, and root action goes on merrily in a moderately moist soil. The young stock is now growing fast, and should be shifted into larger pots as required. Over-potting in the case of the Auricula is a great mistake; and especially is this true of small plants, for when overdone with pot room beyond their requirements the plants will decline and die outright. Seedling Auriculas raised from seed sown last autumn, and already pricked off from the seed-pans into store pots will soon require another shift. The largest plants can be placed singly into 2½-in. pots; but it is a saving of time and labour to put three or four plants into 3-in. pots and allow them to flower in them.—D.

Diplacus glutinosus.—This, though an old plant, is not grown so much as it should be, considering how easily cultivated it is and the profuse manner in which it produces its orange Mimulus-like blooms. It is easily propagated by means of cuttings made of the half-ripened shoots taken between April and August, and inserted in sandy soil. When struck, it should be potted off in a compost of good fibry loam, peat, and sand; it may then be placed in a cool frame and kept close until started, when it should have abundance of air. In autumn it should be removed to a greenhouse, where it can be protected from frost. Thus treated, it should bloom well the following spring, and have the coolest end of the conservatory allotted to it,

when it will produce a fine display all summer.—T. W.

Grevillea robusta from Seed.—The elegant Fern-like foliage of this Grevillea gives it an effective appearance in all descriptions of decoration, either for planting out during summer, or for the conservatory, drawing-room, or dinner-table. It is very easily raised from seeds sown in heat; but they should be new, as failures may and do arise from sowing old seeds. Young plants a year old or so are very useful for the purposes just named. I have a number of young plants in 4½-in. pots sown last autumn. A mixture of sandy loam and peat suits them them well: two-thirds of the former to one of the latter is a good proportion.—E. H.

How to Grow Coleus.—One of the main points in Coleus culture is to sow the seed or strike the cuttings early in the season, so that the plants may be in full growth by the commencement of the summer. The easiest way for an amateur who has not the convenience of a stove or propagating house would be to make a mild hotbed about the middle of March. A single load of stable manure would suffice for the purpose, placing on it a small hand-light of some description. Here the seed would germinate freely, or cuttings might be struck successfully. The best method of propagating the Coleus is by means of cuttings; they strike very easily, and make specimens in less time than seedlings. Those who make a point of growing Coleus for summer decoration save a few of the best plants, keeping them during the winter in a warm house. I plunge them in a cold frame without shading; the wood is well ripened by autumn. I then force them about Christmas, and they bloom satisfactorily.—C. S.

Stephanotis floribunda in Small Pots.—Sometimes in spring may be seen in Covent Garden small plants of the Stephanotis in 6-in. pots, bearing several clusters of blossoms, but such are never very plentiful, as the flowers almost fetch as much money as can be got for the plants. Many people have, however, often been surprised to find the Stephanotis flowered in such a small state as it is found here, and have wondered how such results could be attained. The plants are struck from cuttings of half-ripened wood (not points of shoots) in autumn, or are obtained by layering a branch of a plant along a row of pots filled with soil. Such plants, when struck, have generally one joint above the pot, two leaves and two eyes. These eyes produce shoots which are encouraged to grow as much as possible until the middle of summer, when the plants are turned out-of-doors or into a pit or frame in a sunny position, in order to thoroughly ripen the wood. In autumn these shoots are cut back to firm wood, and the plants are placed indoors, when they soon put forth shoots, all of which are sure to produce several clusters of blossoms. These shoots are trained round a few small stakes, and when in bloom the plants are ready for market. Such plants as are not disposed of are served in the way described the next year, when, of course, they make finer specimens. They are

New Coleus.

Where this can be accomplished it is by far the best method, otherwise seed must be relied on. Sow the seed in a compost of sandy leaf-mould and loam, cover it lightly, and cover the pot with a piece of glass until germination takes place. When the seedlings are large enough to handle, pot them off into small pots, shifting them when well established into larger receptacles, employing a compost of leaf-mould, loam, and rotten manure. During the earlier stages of growth ventilate carefully, not exposing the tender seedlings to sudden chills or cold currents of air. but always admitting a little air on favourable occasions. Be careful also never to employ water either for watering or sprinkling which is not of the temperature of the frame. The Coleus is a very free-growing plant, but if once checked seldom starts again freely into growth. By the month of June the heat of the manure will have declined. It will not need renewal, as by economising the sun's rays by shutting up early and covering the frame, the plants will continue to make progress, and may by July be shifted into 4½-in. pots, and be placed in the greenhouse. As regards varieties, there are hundreds, and the other day we saw in Messrs. Carter's nursery, at Forest Hill, a quantity of varieties of a new type which promise to become popular, two of which are shown in our illustrations.

Treatment of Daphnes.—I have grown Daphnes for several years in pots in soil composed of peat, turf, and silver sand; after they have done flowering I pot them on in larger pots, and keep them close till they begin to grow, syringing them every afternoon with tepid water. After they have started growth not allowed much pot room, as in this case they grow too long in the season, and do not ripen their wood so well, but manure water is used as a substitute for more root room just when the plants require it. A mixture of good turfy loam, peat, and a little decomposed manure or leaf-mould, to which has been added a liberal quantity of sand, forms the best compost for the Stephanotis. Good drainage and abundance of water when the plants are in full growth are also essential to the production of fine flowers and the perfect health of the plants.—S.

The True Maiden-hair Fern.—This pretty hardy Fern (Adiantum Capillus-Veneris) grows here on the inside wall on either side of a cool house, and nearly close to the ground, where admired by all who see it. How the plants came to be first fixed there I am unable to say, but I conclude that my predecessor here must have grown plants of it, and that he must have placed them at times beneath the side stages, and that seeds thus became attached to the joints of the brickwork and grew there. That these now increase there can be no doubt, as numbers of minute plants are discernible on the surface of the brickwork. The fronds of Ferns so produced are really charming for bouquets and button-holes, and yet their cultivation is a matter of chance. If the walls of cool houses near the ground were jagged and roughed with mortar, and seeds of this pretty Fern sown upon such surfaces and kept moist no doubt in time the walls would be covered with lovely green foliage that would be ornamental, as well as supplying material for cutting.—E. A., *Middlesex.*

The Blue Cornflower (Centaurea Cyanus minor). — This is, without exception, one of the best and most useful plants that can be grown in pots. I would strongly recommend every one who has not given this plant a trial in pots to do so, as it is sure to give satisfaction. Its colour is the prettiest shade of blue imaginable, and one which will give a finish to a bouquet or a button-hole second to that of no other flower. It is a very free-growing plant, and if sown in succession will flower the year through. I grow it in very rich light soil in 6-in. pots, three or four plants in each. A large sowing of this plant should be made about the middle of June and another in the end of July. The plants should be grown outside during the summer months, taking them under cover about the middle of September, when those earliest sown will be coming finely into flower; and those sown late will succeed them, and furnish a grand lot of choice blue flowers all through the winter months. It is necessary to give them a trifle warmer temperature than that of an ordinary greenhouse.

Ardisia crenulata.—Both the red and white fruited varieties of this plant, when well managed, are amongst the most useful berry-bearing subjects which we have. Where young shoots are obtainable they should now be propagated, putting them separately in small pots, or, if in larger numbers together, taking care that they are so treated that whatever leaves they possess may sustain no injury. For room decoration they are deservedly great favourites, lasting, as they do, with care in good condition for months. If considerable numbers are wanted, it takes some time to get up a stock from cuttings, and beautiful plants may be raised from seed, which if sown now in pots or pans, drained and filled with open sandy soil tolerably compressed, the seeds slightly covered and placed in a brisk growing temperature, after some time the seedlings will make their appearance.—T. B.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 7.—Sowing Ne Plus Ultra, British Queen, Fortyfold, and Laxton's Omega Peas; planting out Cardoons; also Wheeler's Imperial and Hartwell Early Marrow Cabbage plants; thinning Onions and giving them a top-dressing of soot; nailing in and tying Roses on walls and washing them well in the evenings with the garden engine to keep down green fly; hoeing off all Raspberry suckers that are not required; clipping Box edgings; sowing American Cress and Chicory; putting in cuttings of Chrysanthemums, Gloxinias, and Pelargoniums; pruning back superfluous wood on wall fruit trees, and nailing in the leading shoots; picking the dead flowers off Azaleas and placing them in greenhouse to make their growth; netting Gooseberry and Currant trees; tying Lettuces.

June 8.—Sowing early Snowball and American Strap-leaf Turnips; putting in cuttings of choice Pelargoniums; pricking off Cinerarias and Primulas; planting out Autumn Self-protecting Brocoli; thinning out Parsley, Spinach, and Turnips; cutting out all small fruit and late blossoms of President and British Queen Strawberries to make sure of fine fruit, and giving them a good soaking of manure water; watering all newly-planted fruit trees; sowing Broad Beans, Coleworts, and Spinach between Currant bushes; also a little Scorzonera; planting Asparagus, Buda Kale, and Couve Tronchuda; thinning Pears on walls that have set too thickly so as to leave two in a bunch.

June 9.—Sowing Broad-leaved Batavian and Green Curled Endive; also Mustard and Cress; potting on Fuchsias, Coleus, and Caladiums; planting out Savoys, double Wallflowers, and Asters; layering Vicomtesse Héricart de Thury and President Strawberries on pieces of turf 4 in. square; potting Cannas intended for conservatory decoration; sowing Larkspurs in pots; planting Pinks, Lily of the Valley, Daisies, Forget-me-Nots, Pansies, Stocks, Asters, and Winter Greens; layering Sir Charles Napier Strawberry; hoeing among Rhubarb crowns, and thinning shoots of Seakale plants; taking up bulbs, and clipping Cerastium tomentosum.

June 10.—Sowing Scarlet Runner Beans to come in for a late crop; potting on seedling Cyclamens, Stocks, and dwarf Asters; planting out Brussels Sprouts, Broccoli, and Celery; giving main crops of Carrots a final thinning, and running the Dutch hoe between them; potting Love-lies-bleeding, Tropæolum, and Verbenas, and staking out and re-potting old plants of Bouvardias that have been cut back; planting a border of Autumn Giant Cauliflower and Cottager's Kale; top-dressing Gardenias with a mixture of peat, loam, horse manure, and silver-sand; layering runners of Black Prince and President Strawberry; giving Seakale and Parsnips a watering with guano water; exposing Peaches that are getting ripe to the full influence of the sun.

June 11.—Sowing Wheeler's Imperial and Hartwell Early Marrow Cabbage to come in for September and October; potting on Balsams, Chrysanthemums, and Heliotropes; planting out Spiræas and Deutzias; planting out Lettuce plants; mulching Peas with rotten manure; Hoeing and weeding amongst all growing crops, and getting the nets put over Cherry trees; potting

shrubby Calceolarias into 10-in. pots; sowing Egyptian Green-flesh Melons, Chicory, more Peas, Radishes, and Spinach; layering Keen's Seedling Strawberries; planting Sweet Peas, Scophularias, Gazanias, and Centaureas in flower garden, and April-sown Lettuces on Celery ridges; thinning and transplanting Parsley; also thinning Onions and Leeks; Sticking Peas; syringing outdoor Peach trees with clear water to keep off insects.

June 12.—Planting Vicomtesse Héricart de Thury Strawberries that have been forced on a south border for autumn crop; also Coleuses, Alternantheras, and other carpet bedding plants; stopping and nailing in the Vines on walls; potting Petunias for conservatory decoration; also Fuchsias, scarlet Pelargoniums, and Heliotropes; planting out a few pot Roses and some April-sown Cauliflower plants, also Ice plants; pricking out Cinerarias and Primulas; putting in Chrysanthemum and Coleus cuttings, and putting greenhouse plants out-of-doors; Earthing-up Potatoes, Melons, and Cucumbers; levelling land for winter greens; going over wall fruit trees and picking off curled leaves infested with insects; thinning Carrots and Turnips, and putting short Grass between Strawberry plants; pegging down plants in flower garden, and watering them; also watering orchard-house trees and late Vineries with manure water.

Glasshouses.

Keep up a succession of Balsams, Cockscombs, dwarf Asters, Mignonette, and others. During all stages of their growth plenty of ventilation must be admitted, and abundance of water given. Than the scarlet Salvia fulgens and the blue S. patens few plants are more beautiful, free-blooming, and satisfactory, either in pots or planted out; they require rich soil and plenty of water, and by cutting off the spent flower-spikes and maintaining a regular supply of young wood they continue in excellent flowering condition until late in the season. Keep shrubby Calceolarias in open houses or frames, and give them plenty of water, but as soon as they come well into bloom remove them to the conservatory. Discard herbaceous Calceolarias when past their best, and if seed be required let it be saved from plants that have borne the finest-formed and best-marked flowers; place them in a cool or light house, and supply them moderately with water. Any suckers of Cinerarias ready for potting should now be removed from the old stock, potted singly in moderately rich soil in 2½-in. or 3-in. pots, and put for a time in cold frames, placed so as to face the north.

Pelargoniums.—Some autumn-struck cuttings of scarlet and pink Pelargoniums should now be potted for winter flowering. Amongst the single red varieties nothing is better than Vesuvius, nor in single pinks the old sort Christine; both are short-jointed, compact growers, producing their flowers freely through the winter with a little warmth.

Heliotropes.—Some spring-struck cuttings of these favourite plants should now be moved into 6-in. or 7-in. pots, plunged outside, kept stopped, and the flowers picked off similarly to the Pelargonium. This sweet-scented favourite so managed will produce flowers, with the assistance of a little warmth, all through the autumn up to the end of the year.

Lilies in pots will now require more water as the soil gets full of roots, and should be placed in an open situation away from the influence of walls or trees to avoid weak and spindly growth; turn the pots round every two or three weeks to prevent the plants getting drawn to one side. The earlier-flowering kinds, such as L. eximium, will now be benefited by the application of manure water. See that all are kept perfectly free from aphides, which get down into the points of the shoots on the partially-developed leaves, and in a very short time cause them to become curled and permanently injured. A little Tobacco water syringed into the points of the affected shoots and on the under sides of the leaves will be found effectual in destroying them. The plants will be much better for being plunged in ashes, which will save labour by their requiring considerably less water, and greatly benefit them by preventing their thick mass of roots from being affected by the sun. The earliest flowered kinds should be staked and tied, so far as they require it, before the growth gets too far advanced.

Deutzias in pots that were forced in the winter, and have been since kept in a Vinery or other structure where a little warmth could be added, will now have so far completed their growth as to be ready for turning out-of-doors. This is one of the few hardy plants that make its growth for next year's flowering much better when kept inside than in the open air. A good companion to the above is the double-flowering Plum. These should also be plunged during summer.

Chrysanthemums that were moved a short time ago into their flowering pots should now be plunged. It often happens that a few of the strongest shoots of these so far take the lead as to deprive the weak ones of their share of nutriment. Where this is the case pinch out the points and peg them out horizontally to the sides of the pots.

Petunias and Balsams.—Petunias struck late should also be potted, tying them well out, and stopping the shoots to keep them bushy. Many of the double varieties now in cultivation possess a compact habit of growth, and, from their easy culture and free continuous blooming disposition, they are very useful for greenhouse decoration during the summer and autumn. Earlier plants of these Petunias that have been flowering some time should be assisted with manure water and kept tied into shape, by which means they will continue blooming for some time yet. The later-sown Balsams should be moved out of the small pots they occupy into others 7 in. or 8 in. in diameter. Those quick-growing, gross-feeding plants require a rich soil, a light position, and a plentiful supply of water to produce them in anything like condition.

Flower Borders.

Numbers of plants will now require supporting by sticks and ties. This should always be carried out as soon as it is needed, or the plants get broken down and disfigured by the wind. Never use more supports than are absolutely necessary, and keep them as much out of sight as possible. Get the seed of herbaceous plants sown in good time, by which means they get strong before winter, instead of struggling for existence through the dry late summer months, requiring much more nursing than if they had attained more strength early in the season. Polyanthuses, Delphiniums, Sweet Williams, Aquilegias, with a host of similar kinds, if sown at once, will make plants by the autumn superior in quality to what they would be if the sowing is longer deferred. Sow on a well-prepared piece of ground, with the surface made quite smooth, and cover the seeds lightly with finely-sifted vegetable mould; if the situation be a little shaded from the midday sun, so much the better.

Fruit.

Now that all danger from frost has passed, pinch or cut off all superfluous growth from Pears, Plums, and Cherries, and apply remedies for the destruction and prevention of insects and blight of all kinds. Cordons and espaliers of Apples and Pears should now have the fruit thinned and the leaders tied to supports. Strawberry runners, whether intended for forcing or planting out, should be layered as soon as the young plants are formed. For the former purpose early runners are essentially necessary, that a long season may be had for the full development and ripening of the crowns, without which it is useless to expect successful results. Blackbirds and thrushes attack the fruit as soon as, and sometimes before, they change colour; and it is advisable, therefore, to protect it with netting as soon as it begins to turn. Water effectually when necesary.

Raspberries.—In order to concentrate the energies of the plants in the production of the present season's fruit and the growth of next year's bearing wood, the young shoots that spring up from the bottom should now be thinned to within something near the required quantity. In the case of young plantations that have not yet attained their strength, two or three bearing shoots will be enough; those that are stronger may have six. In thinning the young shoots it is not sufficient to cut or break them off level with the ground; for if so treated they will quickly spring again. An ordinary planting trowel will be found the best implement to use for the purpose, removing 1 in. or 2 in. of the soil, whereby the shoots can be taken off directly from where they spring, in all cases retaining the strongest. The ground amongst these, as well as Gooseberries and Currants, should be again hoed over. If this be attended to sufficiently, often the weeds can be effectually kept down with comparatively little labour.

Vegetables.

The main crop of Celery should now be planted, choosing showery weather for this operation should such occur within reasonable time, as when the ground is moist and the weather dull the roots lay hold of the new soil more quickly than they could be induced to do by artificial watering. The last sowing of Peas may now be made where these are required as late as they can be had; but, unless in open favourable situations, the produce of such late sowings is precarious. Give them plenty of room by sowing thinly and having the rows placed far apart. Where Broad Beans grow strongly when they come into flower they will be benefited by having their tops nipped off. This has the effect of concentrating the efforts of the plants to form pods instead of making useless growth.

New Coleus.

Winter and spring Broccoli should now be planted, and if the plants have been treated as advised some time ago, they will now be fit for putting out. In order to impart to the Broccoli that hardy condition of growth which is indispensable to its standing a severe winter, it should be planted widely apart; if planted too close, it is certain to be weak and soft, and almost sure to succumb on the first occurrence of severe weather. If the land on which it is to be grown is of average quality and fairly manured, the plants should stand 3 ft. apart each way. Where ground is limited, this may seem extravagant, but it is false economy to run the chance of losing the greater portion of the crop through an attempt to grow more than the space at command will permit. On poor inferior soils, where the plants will not attain full size, they may stand 2½ft. apart

The White Everlasting Pea.—This fine old plant is not nearly so much planted as the coloured form, though the white one is really the better plant of the two. It grows as freely as the old form, often attaining 8 ft. or 9 ft. in height, and it is, when in flower, a mass of snowy blossoms. The flowers, being borne on long slender stalks, are well adapted for cutting, and they may be used along with the choicest exotics. When once planted in good loam it grows like a weed.—W.

Antirrhinums.—Plants of these from early sown seed put out now will bloom in August and September, and succeed the plants raised from seed in August last. In this way the pretty homely Snap-dragon can be had in bloom throughout a good part of the summer. A good strain only should be grown, as it is a waste of time to cultivate inferior forms; and now that a preponderance of striped flowers is certain to occur in a good strain, that is an additional reason for having a plantation in a garden. Cold wet springs have an injurious effect on old plants grown in a cold wet soil. On the other hand, plants in a light drier soil do wonderfully well; and really very fine specimens can often be seen in gardens in full bloom. Those who have a wet, cold, uncongenial soil will do best to raise plants in the autumn, winter them in store boxes in cold frames, and plant them out in March and April, when the weather is favourable.—N.

Spotted Mimulus.—The grand spotted Mimuli are fine plants with which to cover a north border during the summer months. During hot weather, in the south at least, they are unable to bear strong sunshine; but farther north, no doubt, they would do well in the sunshine, if not exposed to sweeping winds. No plants that will grow freely in the open air give such grand hues of colour and such superb markings as do these spotted Mimuli. Many of the flowers are 2 in. in diameter, and are richly coloured beyond the power of the artist to depict. I have them here growing on the north side of a cowhouse, blooming most abundantly, and little affected by the winds and heavy rains. If a few of the blooms fall, others come out at once and take their places, so that flowers are never wanting. The best results are obtained when seed is sown, and grown on for a short time in a gentle heat. Soon the seedlings require to be pricked out into pans or boxes, and from these they should in a few weeks again be placed into large 3-in. pots. As soon as the plants are strong enough, the point of the main or leading growth should be pinched out, and then the shoots that start out from the base of the plant will all come up together. In this way, if the plants be turned out some 10 in. apart, they will grow into an even mass and make a grand display of flower. The soil should be light and free, and a top-dressing of Cocoa-fibre refuse aids to keep the surface cool and clean. The great variety in the colours and markings adds greatly to the interest attached to their culture.—D.

A FEW HARDY MARKET PLANTS.

CLOVE CARNATIONS are sold in the form of roots, and at times are in considerable demand. These, and the better kinds of Carnation and Picotees, are, as is well known, propagated by layering the side shoots and planting them out in raised beds when rooted. They are very liable to be attacked by wireworms, which are very destructive to them. A plentiful dressing of lime and soot when digging the ground is found to be useful in keeping them in check. Using fresh land which has been well and deeply dug and exposed to the frost during the winter as much as possible is an excellent mode of securing a healthy and vigorous stock of Pinks and Carnations. These flowers are also cut and sold in very large quantities in bunches consisting of a dozen each.

Sweet Williams raised from seed of a good coloured strain are also popular, and require to be treated like Pinks. Pansies propagated by seed, cuttings, and division of the roots also meet with a ready sale. They thrive best on moderately rich heavy land, and if the position is cool and shady, so much the better. They are sold in small boxes, in which the roots are packed in Moss. They are taken up when they have one or two expanded flowers on them. Polyanthuses from seed and division of the roots, and otherwise treated as Daisies, are charming plants and universal favourites, as are also Hepaticas, which always find admirers. The Ranunculus and Anemone are likewise both favourite market subjects, and in some seasons their blooms in a cut state are very profitable. Few more pleasant sights can be seen than a good bed of Ranunculuses or Anemones in full flower; the quantity of blossom produced and the variety of the colouring in good strains are quite remarkable.

Wallflowers of a good dark colour, dwarf, and early blooming, are very largely grown, both for sale in the form of roots and also in the shape of cut bloom. Immense quantities of the latter are sold tied up in good-sized bunches. It is no uncommon thing to see them brought into Covent Garden by the cartload during the height of the blooming season. Of course when produced in such abundance the price is extremely small; but, generally speaking, Wallflowers are a fairly remunerative crop. They will thrive well under fruit trees, a position in which but few things would be grown to equal advantage.

Double Convolvulus.—This is an excellent climbing hardy plant, which produces in summer and autumn large rose-coloured double blossoms. It likes a light rich soil and warm aspect. It may be grown in large pots, tubs or boxes for forming small bowers or balconies, &c., or it

Double Convolvulus (Calystegia pubescens).

may be grown to hide small fences, or to climb round posts or stems of trees. It may be had at any hardy plant nursery, and it is easily increased by division of the root, which runs rapidly. Its botanical name is Calystegia pubescens, flora plena.

Chrysanthemum segetum (Corn Marigold).—I saw a plant of this in a greenhouse a few weeks ago, which had been taken from a Corn-field last summer. It was about 2½ ft. high, and was profusely covered with large, soft, orange-yellow flowers, nearly twice as large as the field type. It seems a desirable plant to grow along with the white Paris Daisy (Chrysanthemum frutescens), and would probably flower well in the early spring, and continue in bloom a long time.—JOHANNES.

Ranunculus in Pots.—Those whose love of this flower would lead them to desire it as an ornament in the dwelling-house may grow a few in pots. The strong-growing sorts will in this way produce fine blossoms, though not in general fit for exhibition. Plant two or three roots in a 7-in. pot, in such soil as is directed for sowing seed. If early flowers are wanted, plant in October, and plunge in ashes or sawdust in a cold frame; if otherwise, plant in February, and plunge the pots to the rim in a warm border. Shortly before flowering, the pots may be taken up, cleaned, and placed in a situation sheltered from the mid-day sun.—C. T.

Pæonies.—These are now growing strongly, and should have every encouragement, Towards the middle of the month the flowers will be expanding, and as they invariably do so at a critical time when frosts may be looked for, a little protection should be given where possible. Some cultivators adopt the practice of syringing just before the sun gets on the flowers.

The Dark-spotted Poppy (Papaver umbrosum).—This is a brilliant hardy annual, and one that, when in flower, never fails to catch the eye, even at a considerable distance off. It grows about 2 ft. high, and has a habit like the common field Poppy. The colour of the flowers is a dazzling scarelt, with a jet-black blotch on the inner base of each petal, which is sometimes margined with ashy-grey. The black blotch is conspicuous also on the outer face of the petals, thereby rendering masses of the plant a grand sight. It flowers in early summer after Anemone fulgens is over. It is hardy in this country. Though an annual, it is best to sow its seeds in autumn, so as to ensure strong plants for flowering the following summer.

ANSWERS TO QUERIES.

2216.—**Roses not Flowering.**—We should suppose that the plants in question are either deficient in vigour, or that they have not been properly treated during the growing season. If the following instructions are followed a plentiful show of bloom should be the result next spring:—Place the plants at once in a sheltered position in the open air for abont a fortnight, at the expiration of which time plunge the pots quite to the rims in the soil in an open sunny situation. Mulch the surface of the soil with manure and water freely in hot weather. In the autumn, as soon as the foliage is decayed, replace the plants in the house, cutting out all very weakly growth and pruning back the strongest shoots to two eyes. If the plants are in small pots, and are root-bound, shift them into the next sized pot. Any which may not appear to need re-potting should receive a top-dressing of some concentrated manure. Give plenty of air during the growing season, but avoid cold draughts; and if green fly appear, dust with Pooley's Tobacco Powder.—J. C. B.

2219.—**Growing Dates.**—It is customary even in the case of such Palms as succeed in a cool house to bring them along in their earlier stages of growth in a close warm atmosphere, plunging the pots in bottom heat of some kind. Not only do the plants sooner attain large proportions, but they present a much more healthy appearance when thus treated than when subjected to a low temperature. The Date Palm forms no exception to this rule, and the young seedlings will require a long period to render them useful for decorative purposes unless pushed along in heat. They should now be potted separately in small pots in a compost of well-sanded fibrous peat. Place them in a warm corner of the greenhouse under a hand-light, and shade from bright sunshine.—C.

2053.—**Climbers for Planting out in cool Conservatory.**—Passiflora Newmanni has long blue flowers, is evergreen, and should be accorded a light airy situation. Tecoma jasminoides possesses beautiful bell-shaped blooms, white with dark spots, not so large but almost equal in purity to a Gloxinia. This is a very strong grower, running up, when in the enjoyment of a free root run, some 50 ft. in height. When planted in a house of moderate dimensions, the roots should be confined to a limited area, which will also have the effect of inducing it to flower more freely. This plant will succeed on the shady side, but is more satisfactory when exposed to the full light. The Passiflora is also a free-growing subject, and may be so planted that the roots are in an outside border, as may also Berberidopsis corallina and Jasminum gracile, both of moderate growth, the former with red, the latter with white flowers. Physianthus albidus—an evergreen twiner, with white flowers—should be placed in the warmest end of the structure. Celastrus scandens is deciduous, has greenish fragrant flowers, and runs up some 15 ft. in height.—C.

2217.—**Grubs in Potato Land.**—The grubs are the larva of the cockchafer, and they remain four years in the larva state, feeding upon the roots of plants. The only way to get rid of them is to pick them them out carefully when working the land, and to turn it over with

the fork or spade as often as possible before planting the crop. When a plant appears to flag, if the earth round the stem were removed, probably a grub would be found there. As every female cockchafer lays about eighty eggs, something might be done to reduce their numbers by destroying them before the eggs are deposited in the earth. Poultry and rooks should be encouraged where these insects are numerous.—H.

2220.—**Succession of Flowers for Window Boxes.**—It is not stated if the boxes are placed inside or outside the windows, but I will assume they are outside. For spring—Primroses, including the whole family, Tulips, Daisies, Lily of the Valley, Scilla sibirica, Dielytra spectabils, Hoteia japonica, Hyacinths, Iberis coreacea, Summer—Mignonette, Harrison's Musk, Stocks, Pelargoniums (including the spotted show kinds, the zonal, scented foliage, and Ivy-leaved varieties), tuberous Begonias, Tropæolum Fireball, Chrysanthemum frutescens, and the yellow variety. Autumn—Chrysanthemums, Asters, Japanese Anemones, Sedum spectabile, Veronica Imperial Blue, Colchicums. Winter—Laurustines, Pansies and Violets, Christmas Roses, Winter Aconites, Snowdrops, Crocus, Creeping Jenny, Yucca filamentosa. A few shrubs would add to and eke out the display in winter. Some of the Aucubas and Euonymuses, Ivies, and small growing Conifers, such as Retinospera plumosa, and obtusa, will be desirable.—E. A.

2255.—**Prickly Comfrey.**—Plant the sets in rows 2 ft. apart, and about 18 in. from plant to plant in the row. March is the best time to plant, and the land should have been well manured and cultivated previously, as the Prickly Comfrey will occupy the land many years, and though it would yield heavy crops on poor land, yet it does best with liberal treatment. It is not easy to speak with any exactitude as to the number of plants that will be required to supply a horse and pony, so much depends upon the nature of the soil, &c., but a quarter of an acre will yield successional cuttings from April to October, and might perhaps be sufficient to begin with.—E.

2228.—**Adiantum Farleyense.**—Pot in rough turfy loam, and grow in a light house without much shade. The pots must be well drained, as this, like all Ferns, requires a good deal of moisture. Increase by dividing the roots, but under greenhouse treatment this should not be resorted to often, as it takes some time to establish the young plants. I should prefer the cool greenhouse to the warm room, as Adiantums will not long thrive in a dry atmosphere. All potting should be done early in the season, so that the pots may be full of roots before the short days come.—E.

2262.—**Uses of a Cellar.**—In active horticulture there are not many uses to which a cellar can be put; and it is doubtful whether there are other uses in the direction indicated and beyond Mushrooms, than the blanching of Seakale, Rhubarb, and Asparagus in the early spring, or Endive in the autumn and winter. As to the growth of plants, light is essential, and it follows that plant life cannot exist where there is neither light nor pure air. One of the best uses to which to put an airy cellar is to make of it during the winter months a store for Apples, Pear, Nuts, Onions, Potatoes, and other tuberous roots. All these should keep well in such a place if the cellar be dry. Where the inhabitants are not very particular as to perfumes, cellars have been utilised as places for the keeping of rabbits, fowls, and even pigs; but these are not horticultural uses, and if they were we would not recommend them.—D.

2248.—**Pansies Deteriorating.**—Four distinct questions packed into one needs deliberation, because the later ones render us almost oblivious of the tenor of the first; but we will deal with them seriatim. Pansies as a rule do not deteriorate, neither can they be said to be deteriorating, or to have deteriorated. So far from that being the case, the Pansy is finer than ever it was, as all our best growers can practically show. When the querist asks if a Pansy will deteriorate, he probably means that, as the plant's flowering season advances, its blooms become smaller; but that is not deterioration, as, when the proper season arrives, the plant, having renewed growth, will be as good as ever it was. Now it may be accepted as a fact that the first blooms from a hardy plant are always the finest; and even though the earliest blooms be all pinched off it, yet the later ones will still be smaller than those first expanded. If the spring shoots be cut away from a Pansy plant for the purpose of saving the strength for the production of bloom later in the year from young growth, yet the blooms so produced will not be so fine as would have been the flowers on the spring wood, except the new growth produce blooms in the cool autumn, when the flowers may be fine. Divided Pansies will produce as fine blooms in the spring as old plants or cutting-struck plants will; but it must be remembered that the spring is the best season of the Pansy, and then its blooms are always the finest. Cuttings from any good Pansy or laced Pink will reproduce for the time even finer flowers than did the old plants, but will not bring laced Pink flowers if those on the parent plant were not laced. If they were, then the lacing will be as good, and, for a time, better.—A. D.

2266.—**Fowls' Manure.**—When horses are fed entirely upon corn and fowls are the same, the relative strength of the manure from each is about the same, assuming that both are droppings only, and not composed largely of litter. Horse manure, however, at any stage is by far the most tractable, and, perhaps, the most useful. Fowls' manure is useful to employ raw as a dressing when raked from off a loose floor of ashes or road dust. In such case it may be distributed over the soil in about the same ratio as would be horse manure from the highroad. It may be used fresh for the making of liquid manure, and when so employed should be put into any coarse bag, and so sunk into the receptacle, the water being allowed to stand for several days before using. It may be then given to Onions and other plants, with due moderation.—D.

2261.—**Watercresses.**—The profit to be made from the growth of Watercresses depends largely upon the nearness to a good market and method of culture. If facilities for sale are easy and the Cresses are well grown, then running water should be made to pay through their means. But profits depend upon so many things, that statements are unreliable, although they have been put at £50 per acre yearly. It is essential that, however slowly, there should be at least some regular movement of the water; that it shall be shallow, and always about the same depth. If any diversion of a stream can secure these things, then an excellent foundation for a Watercress bed is laid. It is well to remember in doing this that others below may have some rights over a stream also, that may be affected by the proposed use. A small engine is the best means of getting water forced back again, but whether the game is worth the candle is indeed doubtful.—D.

2195.—**The Best Roses.**—This is, to a great extent a matter of opinion, as growers differ considerably as to the merits of this or that Rose. The best exhibition Roses were settled by vote of all the leading nurserymen and amateurs in 1878; and the first six on the list of seventy-two are as follows:—Marie Beaumann, Charles Lefebvre, La France, Baroness Rothschild, Louis Van Houtte, and Etienne Levet. These are all truly grand sorts, but for garden purposes no doubt others would be found more suitable. I would recommend John Hopper, Alfred Colomb, Madame Victor Verdier, Dr. Andry, Mons. E. Y. Teas, Sénateur Vaisse, Gloire de Dijon, Marquise de Castellane, &c.—William Walters, *Burton-on-Trent.*

2249.—**Manure for Plants.**—Pig manure is perhaps of all animal manures the most unfitted for pot plants. It is rank, full of the germs of insects, and suited only as a dressing for light dry soils, and for gross-growing plants. Probably if thrown into a heap and turned occasionally for a year, it might become suitable for potting, but not nearly so valuable as horse or cow manure when well decomposed. Probably it would best assist to purify the pig manure if it were mixed with an equal portion of dry loam, and kept frequently turned to admit air, and thus sweeten it. Excepting sweet horse droppings we know of no animal manure that can be safely used fresh with pot plants.—D.

The Dark-spotted Poppy (Papaver umbrosum.

2061.—**Spigelia marylandica.**—In its native country this plant grows in sheltered situations, the roots finding their way deep down into a body of rich vegetable mould. Shelter from cutting winds, a free root-run in congenial soil, partial shade in summer, with abundance of moisture in hot weather, are the essential points in the culture of this beautiful but somewhat rare plant. A position in which the natural conditions can be imitated should be chosen; and where the soil is not of the right description, it should be taken out 2 ft. in depth and filled up with a well-sanded mixture of loam, leaf-mould, and peat.—J. C. B.

2260.—**Wallflowers not Blooming.**—July is too late a period of the year in which to sow Wallflowers. Like Sweet Williams, Canterbury Bells, &c., they are true biennials, and if

not sown as early as May will rarely bloom the next year. All about London, where the Wallflower is grown to an extent of which provincials have little knowledge, seed is invariably sown in the months of January and February to secure bloom as early as possible. March and April are good average months, but late enough to enable large robust plants to be obtained. Perhaps yours is a particularly late locality. To residents in Middlesex it gives surprise to read that plants were kept in a frame during the winter, as here many hundreds of acres are grown in the open ground, and the plants rarely suffer. Another year sow earlier, and thus avoid your present difficulty.—D.

Narcissus poeticus Failing.—The cause of the Narcissus buds withering before expanding probably arises from the plants being too dry at the roots. Those that have not thrown up flower buds have doubtless had the foliage injured the previous year, either by being cut or by damaging the roots by digging, or by not having sufficient moisture in the ground; perhaps from being planted under overhanging branches of trees or too nea buildings. If these evils are guarded against, the plants cannot fail to flower; but they probably will require a year or more to recover strength. If the soil is naturally very dry, take them up about the 20th June, or sooner if the foliage becomes yellow at the extremities; divide and plant them 3 ft. apart, in clumps, in the shade of some low-growing shrub, or in some other moist situation; but in either case quite open to the sky. Don't dig near them, as that only hastens evaporation. —T. B.

Fennel Roots.—It is not the roots that are eaten in Italy, but the lower end of the leaf stalk, at its junction with the roots, and which, to an inexperienced eye, may be mistaken for bulbs. The plant appears to be raised from seed planted out in rich soil, and in the autumn earthed up 3 in. or 4 in. only to blanch it. It is boiled and served with white or brown sauce in the same way as Celery, and is palatable enough, but not equal to it.—T. B.

2133.—**Spotted Geranium Leaves.**—The roots are probably in a bad state. Turn the plant out of the pot, and examine the drainage. Should this appear defective, and the roots discoloured, work away some of the old soil from them, and replace the plant in a clean pot of the same size, working in a little fresh well-sanded soil between the ball of old soil and the pot. Water carefully, and place in a sunny airy situation.—C.

2204.—**Summer Flowering Bulbs.**—Some of the late-flowering Scillas, such as peruviana, ciliaris, japonica, and autumnalis, might succeed in the situation mentioned. As a rule, however, such bulbous-rooted plants as bloom in the summer and autumn months require a free circulation of air around them.—C.

2222.—**Growing the Cocoa-nut.**—The Cocoa-nut requires a brisk bottom-heat of 70° to start it into growth, growing freely in a moist atmosphere of 70° by day, and 60° to 65° by night, with a minimum winter temperature of 55°.—C.

2157.—**Muscat Grapes Spotting.**—*C. W.*—I am told that this is caused by the rays of the west sun falling on the Grapes after the house is shut up. The best preventive is shading with whitewash or tiffany early in the season.—G. B.

2192.—**Disease in Gooseberry Trees.**—The yellow spots are in all probability a fungoid disease prevalent in some seasons, and for which we have never found an effectual remedy. Syringing with soft soap and black sulphur will check its ravages, but the remedy must be applied directly the disease appears. When once thoroughly established it is almost impossible to eradicate it.—J.

2226.—**Books on Tobacco Culture.**—1, "Le Tabac: sa culture"; Grandeau et Schlœsing (1 fr. 25 c.), Librairie Agricole, 26, Rue Jacob, Paris. 2, "Tobacco Culture," (a pamphlet); New York, 1863; Reports from fourteen different growers in various States of North America. 3, "Tobacco; how it is Raised and Prepared" (a pamphlet): Richmond, Virginia, 1873. I do not know the publishers of the last two, but this can be ascertained at the British Museum.—OMBU.

2276.—**Fruit Trees for North Walls.**—What are the best fruit trees to plant against a north and north-east wall?—AN AMATEUR GARDENER. [Morello Cherries, Currants, and Gooseberries. Victoria Plums sometimes do well on north walls.]

2277.—**Cayenne Pepper on Flower Beds.**—Will cayenne pepper put on flower beds to keep cats off do any injury to the plants?—W. DULIEU. [We should think not; but if you were to give a plant or two that you do not care about a good coat of pepper you would find out for yourself.]

2278.—**Potting and Planting Annuals.**—I have a crop of Asters, Chrysanthemums, Mignonette, and Godetias, coming up now. I want to know at what size I should pot them, size of pots, and if more than one plant should be put in each pot. Also, what distance apart should they be in the open ground?—P. M. C. [Mignonette will not bear transplanting very well. It should be sown in pots or in the open ground where it is to remain—thinning out the plants to 3 in. or 4 in. apart. Asters may be put four or five in a 6-in. pot, or be 6 in. apart in the open ground; Chrysanthemums about the same; and Godetias may be put a little thicker.]

2279.—**Plunging Bedding Plants.**—I am anxious to know whether in bedding out Geraniums and other bedding plants they will not answer as well plunged in their pots as when taken out of them?—IGNORAMUS. [They will not grow so freely, but they will flower more profusely.]

2280.—**Wax Plant** (Hoya carnosa).—How can I revive a Wax plant which appears to be dying?—SUBSCRIBER, *Bristol*. [Judging from the leaf sent, the plant appears to have been over-watered. We would advise you to let it get quite dry; then cut it back considerably, and place it in a warm moist temperature, giving it very little water at the root. It may then start afresh, when the old soil should be removed from its roots, and the plant be re-potted in turfy loam or peat, with some finely-broken crocks or old mortar added; also some very coarse river sand.]

2281.—**Crinum capense.**—Should the above be planted wholly underground like Narcissus and Hyacinths, or only partially so, like Amaryllis?—W. D. P. [Just cover the top of the bulb.]

2282.—**Treatment of Alstrœmerias.**—Can any reader inform me what is the most suitable soil, aspects, &c., for Alstrœmerias?—G. S. M. [Deep sandy soil, and in any warm aspect not too much exposed.]

2283.—**Thinning Radishes and Lettuces.**—My Radishes and Lettuces are coming up too thickly. Ought they to be thinned? and will they grow if divided?—A BEGINNER. [The Lettuces may be thinned and transplanted, but Radishes are not worth transplanting even if they would succeed. Throw the thinnings away.]

2284.—**Transplanting Sweet Peas.**—I have some Sweet Peas about 1 in. above the ground. Can they be transplanted? or, if moved, will they die?—A BEGINNER. [Sweet Peas may be transplanted with every prospect of their succeeding. Choose a showery day for the operation if possible.]

Soil for Palms.—*Old Subscriber.*—Turfy loam and peat in equal parts with a few pieces of charcoal about the size of nuts, with the addition of a liberal quantity of coarse silver sand, will grow Palms well. When the pots are full of roots liquid manure, or some good artificial manure, may be given with advantage.

Soil for Alocasias.—*Old Subscriber.*—Lumpy peat, coarse silver sand, and plenty of pounded flower-pots or bricks. Turfy loam may be used instead of or in addition to the peat, if more convenient to get.

2285.—**Fruit for Exhibition**—Can you tell me how to grow fruit for exhibition?—D. [Probably we can, if you will tell us what you want to grow.]

Paraffin in Water for Plants.—*D.*—A small quantity of paraffin spilled into a well will not affect the water to render it injurious to plants.

Insects on Pyrethrum.—*Harry.*—The insects enveloped in white foam are what are generally known in country places as the cuckoo-spit. You can easily get rid of them by washing or syringing the plants frequently with clean water.

Unhealthy Roses.—*R. H. H.*—The leaves sent are shrivelled up. Well tread the soil round their roots, and give a top-dressing of rotten manure; also a good watering occasionally. The soil is too light and dry for Roses probably. Also read last week's GARDENING.

Cucumbers Without Heat.—*W. C. P.*—Cucumbers may be grown successfully from June till September in a house or frame without the aid of any artificial heat whatever.

Cucumbers from Cuttings.—*W. C. P.*—Take off short-jointed shoots having a growing point. Cut off with a sharp knife immediately below the joint, and insert in small pots of sandy soil. Place under a bell-glass or hand-light in a warm pit or house, and if kept in a moist condition they will root in a few days. If a leaf can be left close to the joint all the better.

Renovating an Asparagus Bed.—How can I do this?—*Subscriber, Bristol.*—[You may improve the bed by cutting out all weak growths, letting only the strongest remain; then cover the bed with a few inches of good rotten stable manure, and give a liberal supply of manure. Water through the summer. But your true course is to make a new plantation.]

Cyclamen and Primulas.—*Inquisitive.*—Strong seedling Cyclamens, potted on now and grown in a close frame during summer, should make fairly good flowering plants by February next. They will require a dry airy house in autumn and winter to prevent them damping. Primulas many be grown in the same way. You will find plenty of information on the culture of both plants in back numbers of GARDENING.

Insects in Cucumber Frame.—*A. B. A.*—The insects sent came out of the manure; they will not do much harm to the plants. A little Tobacco powder or Scotch snuff would probably disperse them.

Gourds and Marrows not Growing.—*Cordwainer.*—You should sow some more seed at once, or purchase some strong plants. There is plenty of heat in the frame you mention to give them a start.

Arum Lilies and Cyclamen.—*L. L.*—These may be grown in an unheated house with a fair amount of success. Procure at once some young plants of the Arum from any good nursery, and plant them out in a bed or border of rich soil, and keep them well supplied with water. In autumn lift and pot them, and place them in your greenhouse; they will flower in spring. They may be grown all summer in pots if you cannot plant them out. Cyclamen may be treated the same way, if you procure bulbs at once.

Daisies on Lawns.—*Havelock.*—There is no need to cut the roots in half when you renovate your lawn. Every root can be dug completely up, and if you use good Grass seed you will not have many Daisies.

Rock Strawberry.—*E. J. M.*—This ought to be obtainable at any good hardy plant nursery. Mr. Smith's nursery, St. John's, Worcester, is probably the nearest one to you.

Dielytra after Flowering.—*Flores et Flores.*—If you cannot plant it out, remove some of the loose soil from its roots, and pot it in a larger pot, using rich sandy soil. Place it in a half-shady situation, and keep it well supplied with water till the foliage shows signs of dying off, when less water will be needed.

Cultivation of Pansies.—*W. A.*—A long article on this subject was given in GARDENING, May 15. We know of no book on the subject you mention.

Washing Pots.—*A. N. B.*—We would not advise you to place pots containing plants in strong soda-water whilst washing them. If you place the pot on the edge of a bench, and place your bucket of soda-water underneath it, you can then, with a stiff brush, cleanse the pot without allowing the water to get into the soil.

Capsicums.—*H. P. K.*—See GARDENING, February 28, of this year.

Chrysanthemum frutescens Etoile d'Or.—*Meadowcroft, and others.*—Mr. Howard, Nurseryman and Florist, Southgate, London, N.

Apple Trees not Growing.—*A. N. B*—If the trees show no signs of life, we would root them out, and use the wall for some other purpose till autumn; then plant fresh trees.

Double Seedling Daisy.—*Subscriber* (*Aberdeen*).—The Daisy sent is an excellent one, and appears to be grown in a manner we seldom see Daisies about London.

Mushroom Growing.—*J. S.*—Fowls' manure is of no use for this purpose.

Sternbergia lutea.—Is this hardy?—F. A. S. [Perfectly.]

Dick.—At any good seed shop, in tins or bags.

Names of Plants—*H. L. F. G.*—Apparently an annual Buttercup. It is not Anemone ranunculoides, as you suppose,——*F. H.*—1, Sweet-scented Tobacco (Nicotiana longiflora); 2. Scilia campanulata.

QUERIES.

2286.—**Acacia and Pampas Grass.**—I have sown some seeds of Acacia longiflora and Pampas Grass, which are just beginning to shoot up. How shall I treat them?—FLORES ET FLORES.

2287.—**Autumn and Winter Flower Beds.**—I would like to know the most suitable and effective hardy plants to collect now, for filling autumn and winter flower beds.—SARAH.

2288.—**Pruning Rhododendrons.**—Can any one inform me if I can prune Rhododendrons which are some 8 ft. high when the blossoms begin to fall? I have a recollection of having so done some years ago with success, but should be glad to know the orthodox time.—T. J. D.

2289.—**Propagating Deutzia Gracilis.**—When may cuttings be taken of this and what treatment do they require?—G.

2290.—**Antirrhinums in Pots.**—How should seedlings of this be treated to produce fine blooms? They are in 2-in. pots.—F.

2291.—**Vines.**—Will a small greenhouse, with a roof-space of 64 sq. ft., contain more than one Vine? If so, what is the best white Grape to plant with Black Hamburgh?—A.

2292.—**Sweet Briar.**—How is it that I cannot get Sweet Briar to succeed? It generally dies the second year after planting, seeming gradually to pine away. The soil is clay—about four-and-a-half miles from London. I have manured it, and given it liquid manure, but without effect.—SWEET BRIAR.

2293.—**Asphalte for Walks.**—Will some reader tell me how to asphalte a small walk?—W. K.

2294.—**Liquid Manure.**—Will "Public Analyst" kindly state what quantity per gall. of sulphate of iron, soda, or magnesia, is required to fix the ammonia in urine, &c.? and if either of the three are equally efficacious?—IGNORAMUS.

2295.—**Lily of the Valley not Flowering.**—Can any one tell me how to get a Lily of the Valley bed into flowering condition? The bed, which is an old one, was thinned in the early spring of 1879, and enough roots left to make three rows of plants. These bore not a single flower in that year; and this spring, although there were some buds, not a bloom has come to perfection.—W.

2296.—**Wild Flowers.**—I wish to make a collection of wild flowers. Can any one tell me how to dry them properly?—HAVELOCK.

2297.—**Vines Suddenly Failing.**—About two years ago a friend of mine had built an early Vinery between 70 ft. and 80 ft. long; he also made a good border inside, had everything taken out, and put in a concrete bottom and the usual compost, namely—good maiden loam, manure, &c., lime rubbish and bones, &c., all well mixed together. He grew a splendid lot of young canes for this house, and got them well established in 12-in. pots, and planted his border about the middle of March, 1877. They grew splendidly, made fine rods, and were in a fine healthy condition, and promised by their looks to be a first-rate and profitable house in the course of a few years. This year they made fine strong shoots and splendid bunches of Grapes, which I should think would have been from 2 lb. to 3 lb. each and lots of them. My friend gave a good watering two or three times, when they began to show symptoms of distress and gradually go back: the leaves curled up and blistered as if they had been stamped with large shot from the back of the leaf, the bunches shrivelled; and this once

beautiful house of Grapes looked in a most melancholy condition. I asked my friend what he had been watering them with. His reply was, "I have been watering out of those two petroleum barrels which I have put over the boiler and near the pipes to make the water tepid; I cannot think it is anything but that." I said, "Are they new ones?" He said, "No; they have been knocking about in the snow and frost for two years, and I thought they would be harmless." A row of beautiful pot Vines went just the same. I at once put it down to be those petroleum barrels, and making the water tepid had brought it out of the wood. We searched the border very minutely, but could not find any signs of Phylloxera. Still, it may be so; and I write this as it may give a good scope for a few old Grape growers to give their opinion on this subject, as it is most disappointing to see a lot of nice young Vines full of fine bunches of Grapes go off in this way.—G. C.

2298.—**Flowers for Button-holes.**—Will some reader give me the names of a few flowering plants that will grow in pots, boxes, &c., with the protection of a heated room, in which there is plenty of light. I want them for cut flowers (button-holes, &c.). I have zonal Pelargoniums, Heliotropes, Calceolarias, and Mignonette. The names of a few annuals, &c., would oblige. BUTTON-HOLE.

2299.—**Vines not Fruiting.**—I have two Vines in an unheated greenhouse. This year there is not a single bunch of bloom on either Vine. I shall be obliged to any reader for information as to the future treatment of the Vines, so as to ensure bloom for next season.—G. A. W.

2300.—**Insects on Plants.**—Can any one inform me of a good method of clearing plants of red spider and scale?—WEST HILL.

2301.—**Propagating Gloxinias.**—Will some one tell me the time and the best manner of propagating Gloxinias?—E. W.

2302.—**Moving Asparagus.**—Having made an Asparagus bed last March with three-year-old plants on the old system, I find I am compelled to move the bed, as I have made it over a cesspool. Will some one kindly inform me what is the best time to move the plants and which way of planting is the best? My garden is dry and has very nice mould.—R. H.

2303.—**Blight on Fruit Trees.**—Are not soap-suds a good remedy for this, and, if so, will not soda in solution be effectual?—R. H.

2304.—**Summer Pruning Fruit Trees.**—What is the proper time for summer pinching the following fruit trees, viz.—Apples and Pears (espaliers and pyramids), Plums (on walls and pyramids), and Apricots? Some say the middle of May, others the end of June.—W. H. K.

2305.—**Perennial Pinks.**—I want to make a bed of perennial single pinks. Will some one tell me the best kinds of seed to buy?—F. A. C.

2306.—**Ivy as a Border Plant.**—Will any one tell me how to grow Ivy as a border plant? The ground Ivy is too flat and not bright enough in colour, and we have not been able to produce a good result with the wall Ivy.—P. F. S.

2307.—**Skeleton Leaves.**—*S. E. S.*—What is the best method of preparing skeleton leaves? Can anything be bought for the purpose? Also, is there anything better than gum with which to arrange them in a book?

2308.—**Shelter for a Garden.**—I should feel obliged if some one could give me any advice as to lessening the full force of the wind in a narrow walled-in garden, standing on an exposed position. The walls are 9 ft. high, but the one facing south stands considerably lower than the north; consequently there is a sort of whirlwind inside the garden when the south-westerly gales blow. I have had fixed some iron standards on the top of the south wall, 7 ft. high, with wire netting strained between them; but this does very little good. The fruit trees against the top wall suffer very much, as the wind seems to strike against it and run right along. It has been suggested to me to pull down the east wall to allow the wind to escape, but I am unwilling to do this without trying other means. The objection to hedges is that they would take two or three years before they were large enough to be of any use.—T. P. HUGGINS.

BEES.

"BEE KEEPING FOR AMATEURS."

THIS is a pamphlet of some twenty pages, by Thomas Addey, and published at the *Bazaar* office, 170, Strand. It contains all that any one could expect to find in a pamphlet, and the matter is of a practical character. The following article on swarming will be seasonable just now, and give our readers some idea of the kind of matter contained in the book in question:—

"**Swarming.**—In a favourable season swarms may be looked for at the latter end of the month of May or the early part of June; when this is the case have a hive ready to put them in, and with a coarse cloth rub the inside before the bees are shaken into it. Have a cloth to set the hive on when the bees are in it; and, before turning the hive over, put a brick for the mouth of the hive to rest on, as this will cause the bees to commence building combs on that side nearest to the entrance, ensuring protection from invaders on the commencement of comb building. After the swarm for the most part has got settled in the hive, which will perhaps take half an hour, gently take the hive in the same position to the stand where it is to remain, and clear all away. As to the straggling bees, they will either find their new domicile, or go back to the parent hive, which will avoid the sacrifice of life which would have ensued had they been permitted, as in the old system of management, to remain through the day before removing the hive to its standing. After sunset give the new swarm a feeder, containing about 4lb. of sugar liquid, as this will greatly assist the bees in comb building, and the queen will soon find space to lay her eggs, and a strong healthy swarm will be obtained. On the other hand, if no assistance be given and dull weather confine the bees in the hive, an enfeebled stock and perhaps a total wreck will ensue—a calamity which may easily be avoided by a little trouble and a trifling expense."

POULTRY.

Insects in Poultry.—All kinds of birds are more or less liable to become infested with small insects, which irritate and annoy them to such an extent as often to seriously injure their health. Fowls when kept in confinement frequently suffer very much from a small insect which breeds very quickly amongst their feathers. We have met with cases in which the feathers round the neck and on the head have been completely covered with nits, and the body alive with insects; and it is hardly necessary to say with these thousands of pests feeding night and day on the bird that they soon become weak and emaciated. When fowls are troubled in this way, it is in all cases from an absence of the proper materials to enable them to free their bodies from the insects, for if the necessary means are at hand the birds are sure to take proper precautions for their own comfort and cleanliness. All they require is that there should be placed in a sheltered and dry place a quantity of cinder ashes, old mortar, or dry earth, for them to dust their feathers in directly they begin to find they have any insects on their bodies. This rubbish they will work so effectually through their feathers that the insects are very soon glad to take their departure. It may happen that from usage and long suffering and debility, the birds have not sufficient energy left to trouble about a dust bath even if it is provided for them. In such cases as these a little sulphur should be well dusted amongst the feathers, while the head and neck should be rubbed with an ointment made by mixing sulphur with lard. The great thing, however, is to have a heap of loose rubbish easy of access and dry, and then the birds will take care to keep their bodies free from all kinds of insects; but when no dust bath is provided, no matter how cleanly the house may be kept, the birds are sure to be troubled with vermin.

Nests for Sitting Hens.—During the warm season of summer the best place for hens' nests is on the earth, because that supplies just the amount of moisture that is needed to keep the shells moderately soft and the chickens healthy. Nothing is better for nest material than unwound straw-band, as it is soft and sweet. Straw is better than hay at any time. If made up elsewhere, we have found disused bloater boxes excellent things in which to place the nests, standing them in any quiet corner, and in dry weather giving the eggs an occasional sprinkle with warm water.—A.

An Egg within an Egg.—Mr. Towers, of Exeter, lately showed me an egg laid by one of his white Cochin hens, April 21 last. It weighed 4½ ounces, and measured 8¼ in. by 6¾ in. Mr. Towers being struck with this, to him, extraordinary large hen's egg, resolved to blow it and preserve the shell. He proceeded in the ordinary way to accomplish this object; but he found rather less than more come from this large egg. He shook it, and found something hard was left inside. He broke a little more of the shell, and to his astonishment there was another perfect egg loose inside, with shell apparently as hard as the outer one. The size of the inner egg is about ½ in. less than the outer one. Mr. Towers very kindly presented the curiosity to the museum, where it is looked upon with great interest; and I have no donbt the fact will be interesting to your readers.—Z.

Eggs not Hatching.—In reference to "Poultry Maid's" remarks about eggs not hatching on account of the chickens having died before arriving at maturity, the cause is probably a want of sufficient moisture under the nest. If hens are sat on the ground, it is seldom they fail to hatch if the eggs are fertile. We must imitate Nature in these matters. If a hen can arrange her own affairs, she sits herself in a hedge bottom, where the ground is quite damp. In the morning she starts off to feed, and returns with her breast and wings wet with dew. This tends to keep the eggs constantly moist; and without this being attended to one cannot expect strong and healthy chickens.—S. S.

Disease in Fowls.—Many of our fowls seem to be suffering from a kind of scurf, and lose all their feathers on the head. We are puzzled as to the reason, for they are regularly fed, have a good field run, and came to a quite new house last February. They are otherwise in good health, as they lay well. They also have a good supply of cinder ashes.—MAY.

Vermin in Poultry.—I have a hen sitting on thirteen eggs; what can I do to get rid of the vermin, as I find they are very numerous? Will they injure the chickens?—A SUBSCRIBER.

Keeping Brahma Fowls.—One of my Brahma fowls has something the matter with his legs; he has appeared weak on them for some time, but now they seem almost useless. When he is made to get up, for he continually lays down, he stands and trembles; he appears to have the cramp. Will any one inform me if there is any cure for it? I have a poultry run of 10 yds. by 3 yds. Can any one tell me how many fowls that space is capable of holding without injury to the fowls?—J. PETERS.

Fowl with Swelled Breast.—I have a fowl whose breast has swelled to such a size that it almost touches the ground when she walks. It causes her great pain and trouble in swallowing her food; sometimes I observe she even vomits after taking Corn, Rice, or any hard substance. Last spring she suffered from an enlarged breast, but after laying some of the finest eggs I ever had, sitting and rearing a brood, the swelling entirely disappeared, and has only lately made a re-appearance. Is there any remedy for this disease? as I should be very glad indeed to relieve her from suffering.—KATE.

HOME PETS.

Canary Losing its Feathers.—Has "J. R." kept it during the winter in a room where fire and gas are daily in use? If so, that will at once account for the bird losing its feathers. It is moulting, and I would suggest a judicious addition of strengthening and stimulating food, such as a small quantity of hard-boiled egg daily; also a pinch of maw and hemp seed occasionally; in the drinking water alternate saffron and a rusty nail; a lump of Bay salt between the wires to peck at is also a good thing. And next winter take care that it is kept in a room without fire or gas; for, although draughts are injurious, a mere cold temperature in any room is beneficial rather than otherwise. I have tried both plans, and found that keeping birds in a room with a fire they were moulting all the year round; whereas, last winter I kept mine in a room where the thermometer often stood at 32°, and I never had stronger or healthier birds.—FERNDALE.

Feeding Birds.—Young thrushes are very easily reared. Skylarks are much more tender, but they should both be fed in the same way—on hard boiled yolk of egg, sopped bread, and finely minced lean raw beef, to which you may add, if you please, a sprinkle of Poppy seed, all well mixed together into a moist paste. The birds should be fed hourly at least, oftener if possible, from daylight to dusk. The mess of crushed Hemp seed and bread with which unhappy nestlings are too commonly crammed is totally unfit for their food, and almost invariably kills them.—FANCIER.

Parrots Talking.—Will some one who has had experience in parrots kindly inform me at what age parrots may be taught to talk? I have a grey one which is only ten months old. Is this too young?—E. A. E.

Canaries in Newly-painted Cage.—Is it injurious to canaries to place them in a cage recently painted green and white?—E. V.

Taming Love Birds.—I have a pair of Australian love birds, and would like to know how to tame them?—L. M. A.

Food for Birds.—Will some one kindly inform me what is the proper food for redpolls, siskins, and yellow-hammers? They are all to be in one cage (which I am making).—CRYPTOGAM.

Worms in Dogs.—Can any one give me a simple remedy for curing worms in a very small Maltese terrier? I have tried a portion of Naldire's powders, but they do not seem to do any good. She refuses to take it in milk, and when I gave it in butter she was sick afterwards, and I tried it in the yolk of an egg. On the paper it says they must be given in milk or butter, so I fear the egg was no use. She has also a kind of skin disease—a sort of excrescence or wart comes, and when it dries it drops off. I was told to try turpentine, sulphur, and castor oil, and rub it into the skin, but it causes too much pain. Would washing her with carbolic soap do any good, or rubbing the warts with treacle as recommended for warts in cows? She is only four years old, and I should not like to lose her.—C. R.

AQUARIA.

Stocking an Aquarium.—It is startling to read "W. B's." directions for stocking an 18 in. aquarium, when he states that as many as twenty-two fish, besides tadpoles and frogs, may be put in. My own experience teaches me that such a number is three or four times too large; and if so many are put in, the number will gradually be reduced by death of the majority. In starting an aquarium, it should be remembered that it can only succeed as long as there is a proper balance between the animal and plant life—the former depending nearly entirely upon the oxygen the latter supply for their respiration. The amount of this will depend on the size, number, and condition of the plants, and also on the quantity of light and the season of the year. If too many creatures are put in, and more than the plants can sustain, the fish will soon be seen at the top of the water gasping for air, and making bubbles, a sure sign that the animal life is excessive. I consider it would be safer for a beginner to commence with three or four fish, and as the plants root well and flourish, a few more might be added. Surely fish require food regularly, like all other living things; for the water in the aquarium contains little besides air, and therefore unless something is given them, starvation must result. In feeding, care should be taken not to give more than can be eaten at once, or what remains will foul the water. Often at first, if the food is different to what they are accustomed to, but little is eaten. I generally give vermicella, broken up, which I throw in so that it sinks to the bottom of the aquarium immediately.—G. ABBOTT.

Gold Fish Dying.—I have two gold fish in a bell-glass which were perfectly healthy when I first had them (about a fortnight ago), but now they are covered with a kind of white scum; and several of the snails have died. Can any readers inform me what is the cause and remedy? H. E. H.

White Matter in Aquarium.—The cause of the film is having too much light on the aquarium. Place a piece of green calico on the back to keep off the rays of the sun and light; then take a small piece of sponge or a tooth brush tied to the end of a stick and rub it off the glass. To remove the slime from the fish take them out of the globe and place them in a pail; throw over them some silver sand, so that it may fall on the skin of the fish, which will cause them to rub themselves and entirely eradicate the slime without injuring themselves. —NEPA.

THE HOUSEHOLD.

To Cook any Green Vegetables or Cauliflowers, &c.—Put them into plenty of boiling water with a little salt, and when nearly cooked pour off the water and add fresh water, either cold or warm, and let it come gradually to a boil, when the vegetables will be delicious, and no strong flavour, as is generally the case with Brussels Sprouts, Cabbage, &c.—AN EXPERIENCED WIFE.

How to Pickle Eggs.—Can any one tell me the proper way to pickle eggs?—M. BRAIN.

Gooseberry Caterpillars.—As this is the time to get rid of the caterpillar from the Gooseberry trees, I can give your readers a certain remedy. First water the tree all over and then dust on thinly some powdered White Hellebore, which can be easily procured from the chemist. Last year my trees were first stripped of all their leaves and then the fruit quite withered, so that I had none hardly. I tried Tobacco-smoke; but that was a failure. I am sure the Hellebore is effectual, as I have proved it on many trees this year.—E. W. MORRIS.

The Amateur Gardener.*—This is one of Messrs. Warne & Co.'s useful shilling books, which has lately been revised and greatly improved in appearance. Its contents are such as any amateur gardener might peruse with advantage. Work to be done in each month is given, together with tables for sowing and planting, and, where necessary, illustrations are added. It is one of the cheapest as well as most practical books with which we are acquainted. Blank leaves are also inserted, which will serve as memorandum pages.

* "The Amateur Gardener," by Mrs. Loudon. New Edition. London: Warne & Co., Bedford Street, Strand.

Blight on Fruit Trees and Roses.—With the following mixture and a syringe I have effectually cured all my fruit trees from the black blight, as well as my Roses from grubs and green fly:—¼ lb. of black Tobacco, ½ lb. of Quassia (Bitter Wood); boil for four hours in 3 gals. of water, and then allow it to sand for twelve hours. After using about half the mixture, if it is found that more will be required, fill up again with boiling water, and it will be ready for use next day. It has no injurious effect on the blossoms.—MINIFIE.

Fly on Rose Tree.—As some of your readers may wish to know how to rid their Roses of that pest the green fly, I submit to them a

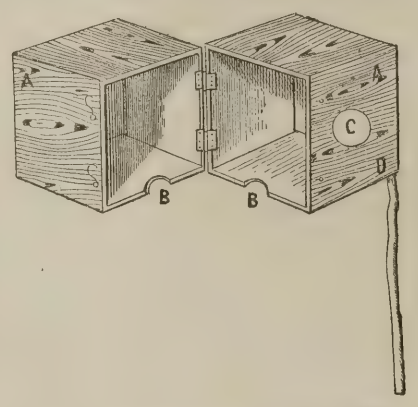


Fig. 1.—Fumigating box for Rose trees open.

plan that effectually cured mine last year. I constructed a box (A) to enclose the head of the Rose tree, divided and hinged, when closed fastening with two hooks and eyes; on the closing edges I glued strips of cloth to make it air-tight; in each end I inserted pieces of glass (C) opposite each other that I might see when I had sufficient smoke. In a corner of the box I placed a small flower pot (D), therein a few live embers and Tobacco paper, through the bottom

Fig. 2.—Fumigating box closed

of which and the box a piece of iron pipe, attaching a piece of rubber pipe to enable me me to blow through and obtain the amount of smoke I required. There must be a space (BB) cut in the bottom of each side of the box to allow the stem and stake to be enclosed, the cavities around which can be closed by a little hay, &c. I support my box on a stand similar to a photo camera; others may find a more convenient way. The box will be found useful for cleansing flowers in pots in a like manner.—A. H. HUNT, *Rickmansworth*.

Bone Dust as Manure.—I find this invaluable both for flowers and fruit, especially pot Vines and Strawberries; and it is not only a rich but a lasting manure, which I consider better than bones in a rough state. The latter are, however, best adapted for Vinery and fruit tree borders. For pot plants, such as Fuchsias, that bloom nearly continuously, if sufficient food be supplied to ensure fresh growth, a liberal sprinkling of this kind of manure will be found to be of the greatest service. In vegetable culture a sprinkling in the drills with Turnips and crops that are best pushed rapidly into full leaf beyond the attacks of fly and other insect pests, I have generally found bone dust most satisfactroy.—J. G.

Packing Strawberries.—Strawberries to be sent any distance should consist only of such kinds as will carry without risk of being damaged on the journey, as the finest fruit is of no value if it arrive at its destination bruised or otherwise damaged; even, however, in the case of the firmest-fleshed sorts considerable precaution is necessary in order to ensure success. I found from experience that the best material in which to pack Strawberries are the leaves of the green garden Orach (Atriplex hortensis); I therefore always sow a certain quantity of Orach seed in March or April so as to have young leaves available for packing purposes before the crop of Strawberries is fit for use, or soft spinach leaves would be a good substitute for the Orach. For packing I use shallow boxes of various sizes which do not hold more than two or three layers of fruit; I line the bottom with Orach leaves, and thereon put the Strawberries packed closely together. The first layer being finished, I again use Orach leaves, and so on until the box is full, when I add a good layer of leaves on the top; so that when the cover is put on, the boxes will, if necessary, endure hard usage for a couple of days without their contents being in the slightest degree injured. I have frequently sent Strawberries packed in this way both by post and rail over 200 miles, and once by steamer to Scotland, and they have invariably arrived in excellent condition. The sorts which I prefer for such purposes are La Constante, Sir Joseph Paxton, Waltham Seedling, Duke of Edinburgh, the Countess, Early Crimson Pine, Cockscomb, Fairy Queen, Lucas. Dr. Hogg, Unser Fritz, Ascot Pine-apple, and Duc de Magenta, all of which may be picked when quite ripe; whilst President, Frogmore, Late Pine, and James Veitch, should be gathered a day beforehand. It is of course useless to attempt sending such soft kinds as Black Prince, Marguerite, Keen's Seedling, jucunda, &c., however handsome they may be, any distance, as they would be sure to be more or less damaged. —F. G. H.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Deutzia, 4s to 6s; Ferns (various), 3s to 9s; Heliotrope, 6s; Jonquils, 3s to 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Myrtle, 6s; Narcissus, 4s to 9s; Pelargoniums (zonal), 3s to 6s.; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Camellias, 1s to 4s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses (forced), 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cytisus racemosus, 9s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Deutzia gracilis, 9s to 18s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 3s 6d to 7s; Grapes (imported Almeria), per barrel, 25s to 30s; Lemons, per box, 30s to 45s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s: Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 9d to 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 1s to 2s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 3d to 5d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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VASE OF ROSES.

PERHAPS there is no operation in gardening which is performed with less taste, as a rule, than the arrangement of flowers in vases. We generally see a host of different kinds of flowers packed as close as they can be got together, great care being taken that the whole shall present an even surface when placed in the vase, and the object appearing to be to get as many different kinds of flowers into one receptacle as is possible. Now, to properly enjoy a vase of flowers, one kind, or at most two, should only be used. Take a handful of Roses or Gladioli or Dahlias, and place them in a vase, and they are effective; place them together and one destroys the effect of the other. The single Rose bloom, with a few leaves and buds, placed lightly in a small vase or glass, will afford ten times more pleasure than a handful of different kinds of flowers crammed into the same receptacle. The eye, as a rule, can only enjoy one object at a time, and this should be kept in view when arranging flowers in vases. We do not say, of course, that a few Fern fronds or light Grasses may not be used with advantage, provided they are tastefully disposed. An example of this may be seen in the accompanying engraving, the result of a sketch after the celebrated Regnier. It has been truly said that the highest art is that which renders most correctly the spirit of the subject without condescending to photographic detail, since we never can attain to both at once. When gazing on the charming group the subject of the accompanying engraving, we cannot but observe how fully this remark has been fulfilled; for, while recognising the graceful shape of the Cabbage or Provence Rose, still dear to many a Rosarian, it is obvious that the closely-packed petals are indicated rather than minutely copied; but as the likeness is not lost thereby, the gain in lightness and grace much more than compensates for the absence of detail. Our modern cultivators, in their endeavours to improve (from a gardening point of view) the queen of flowers, have almost succeeded in banishing the light and but semi-double Damask Roses forming the top of the group from our gardens; but to a painter's eye they will always furnish a spray of bloom such as he delights in. This is not, even in these days, forgotten by modern French artists, who tread worthily in the "spirit" rather than the footsteps of Regnier—the light and delicate sprays of Tea and Noisette Roses being very favourite subjects with them, while the massive blooms of a Pierre Notting and Maréchal Niel are sparingly used, and only as a counterfoil to some rich drapery, such as that before us.

ROSES EFFECTIVELY ARRANGED.

FLOWER GARDENING.

As I have had some experience and I think I may add decided success, in gardening, I cannot resist the temptation of writing to support "Justicia" in his reasons against the "bedding-out" system. My present garden is a mere strip—two borders 20 yards long and 1 yard wide, and a very small bit of ground which is used for Rhubarb, Beans, and Vegetable Marrows, and also does duty as reserve ground. Since February I have had a continual and increasing succession of flowers, which will not cease till Christmas, as I generally have Chrysanthemums on that day. If I had Christmas Roses I should have them in January, and therefore never be without flowers out-of-doors all the year round. Can any one who pursues the

"bedding-out" plan make such a statement? Our garden does not cost £5 a year—£1, or at the most £1 10s., being spent on plants, seeds, and bulbs; the rest going for soil, manure, and labour. Now, if I filled our borders with "bedding-out" plants spring and summer, and shrubs for winter, I should have to spend more than double this sum to have any effect, and I fear that many friends would miss the lovely bouquets of mixed flowers which it is my greatest pleasure to bestow. "Bedding-out" flowers are most unsuitable also for the flower mission, as they do not last well; moreover, the sick poor have double pleasure in seeing some old-fashioned favourite, the very perfume of which brings back pleasant memories of bygone days. Some of your readers may care to know the names of my various plants, and I will give them in something like the order in which they flower: From February to June—Primroses, Crocuses, Daisies, Forget-me-nots, Pansies*, Violas*, Polyanthus, Primula japonica (very showy and quite hardy), Wallflowers, Geum*, Columbine, Pinks, Oriental Poppy, Day Lily, Campanulas* of several sorts (white and blue), Delphiniums*, Clarkia, Nemophila, Scarlet Linum; from June to December—Bartonia, French Poppies, Blue Cornflower, Ox-eye-Daisy, Chrysanthemum Etoile d'Or, Geraniums, Calceolarias, Phloxes of various sorts, Carnations, Asters, Fuchsias, Zinnias, Verbenas, cream-coloured Marigolds*, Gladiolus, Anemone japonica alba, large perennial Coreopsis, Dahlias, Dianthus*, Nasturtiums, Chrysanthemums. Those plants marked thus (*) flower twice in the season from May till October, and I have generally a second supply of annuals to fill up the few blank spaces. Some good dwarf Roses give a desirable effect here and there against a most objectionable wooden paling at the back of the border. I have Lamarque, Maréchal Niel, and Cramoisie, yellow and white Jassimine, and a small Magnolia. Round the trunks of three hateful Lime trees I plant Sweet Peas and Major Convolvulus. So that I think your readers will allow that I make the most of my space, and enjoy a variety which would be impossible if I practised the "bedding-out" system. My friends wonder how I manage. I can only tell them that I love the flowers, and do not mind any amount of trouble for them. My two guiding rules are "Give and receive" and "If you want a thing done well do it yourself." I am always dividing my plants and giving them away, and I never refuse anything that is offered at any time of year. I do everything myself in my own particular border; digging, transplanting, pruning, and even watering are never trusted to a stranger's hand. A hired gardener is to my mind the *bête noire* of a mixed border—worse than cats or slugs even. I will conclude these remarks by adding that I seldom have to cut off dead blossoms. Gather your flowers judiciously when in their beauty, and you will have a much longer succession of bloom than if they were allowed to run to seed, and you will also give a great amount of pleasure to those who receive the lovely bouquets; and what bouquets can be made from a mixed border is only known to those who have had the pleasant experience which has fallen to me. AMATEUR M.

Improved Flower Gardening.—I was glad to see the discussion between Mr. Grieve and "Justicia" about the present system of bedding-out. The geometrical system now adopted in public gardens is to my mind hateful, but I think "Justicia" overdoes it in condemning all bedding plants as he does. I have, wherever I have lived, planted my garden with herbaceous plants: Daisies and Primroses in front; Hollyhocks at the back; Phloxes, Delphiniums, Pentstemons, Pyrethrums, Geums, Potentillas, Canterbury Bells, Foxgloves, Irises, Funkias, Lilies, spring bulbs of various kinds, in the middle; but, when the bulbs are dying down and looking untidy, and the Primroses going out of bloom, Verbenas, Geraniums, Calceolarias, Heliotropes, Phlox Drummondi, Zinnias, &c., are wanted to keep up the supply of bloom. Mr. Grieve condemns among others the Epilobium. I once took an old-fashioned house, in the garden of which there was a patch of E. lanceolatum (Willow-herb) about 6 yds. by 2 yds., and for two months in the summer it was a mass of bloom. It is the best plant for bees I know of; from sunrise until eight and nine o'clock at night my bees were busy upon it. —APIS.

FRUIT.

SUMMER CULTURE OF HARDY FRUITS.

Strawberries.—A good display of blossom on the Strawberry quarter, even after it has escaped the frosts, is not always a guarantee of a good crop if the summer culture of the plants be neglected. The weight of crop very much depends upon watering, mulching, and manuring, particularly in dry seasons, even though the ground may have been well enriched when prepared at the beginning. A mulching of half-rotten stable manure, or, in its absence, decayed hotbed manure or similar material, should be applied now, if not already done, covering the ground between the rows 2 in. or 3 in. deep, and well up to the collars of the plants. This will keep the ground uniformly moist, and at the same time render the placing of straw between the rows unnecessary, as the rain washes the mulching quite clean, and it serves the same end. Should manure not be available for mulching, short Grass may be used, and plenty of it; as, in the course of the summer, a thin layer of it soon shrivels up and vanishes. We prefer to delay mulching till the flower-scapes are up fairly, or even till the fruit is set in tolerably moist seasons when mauure is put on, as we find it stimulates the foliage too much, at the expense of the flowers; but in thin soil a mulching of some kind is indispensable, and in light or sandy soils it is the only way of ensuring well-swelled fruit. Before the mulching is applied to them the ground should be hoed and cleaned, and, if it be dry, also watered, and then mulched at once. When fresh plantations have to be formed in autumn, a year is just saved by layering the runners in good time, and keeping them stopped beyond the layer. Perhaps the very finest fruit for size and quality is obtained from plants that have been layered early in the season and planted in August; and when plantations have to be made, it is just as easy to give the plants some sort of preparation as not. With this object, a ridge of good soil should be laid between the rows and the runners laid on it; and when well rooted they should at once be transplanted—by August at the latest. There has been much dispute concerning the practice still in force in some parts of cutting the foliage off the plants after they have done bearing, in order to encourage a later growth. Theoretically, the practice seems wrong; but it is a fact that some of the best cultivators adopt it. Probably it succeeds better in some parts than in others. In late districts the practice is not to be recommended, as the second growth of leaves and crowns has not time to mature; but in early seasons, or in early localities, we think it is advisable to cut the oldest leaves off to let the light into the crowns. It is a noticeable fact that the first growth of leaves is always tall and rank, and that when they are cut away about July the second growth is short and stocky, the leaves broad, and the crowns prominent, like plants grown in pots for forcing; and in such cases the plants invariably bear well. Plants that have been forced in pots and afterwards planted out, make their growth during August and September, and have also the same squat habit, never making a rank growth; yet it is well known that they invariably bear enormously. It is proverbial that such plants never miss a crop. The cutting-over process may therefore be recommended when the crop is soon over, and the foliage old and rusty by mid-summer; but the operator should be careful not to cut too close to the crowns.

Small Fruits.—The practice of digging, either with the spade or the fork, among Gooseberry and Currant bushes during the summer is to be condemned. Nothing deeper than a push hoe should come upon the ground. All are benefited by thick mulchings, especially the Red Currant, which is more subject to honey-dew than the others in dry seasons; and the mulching, by keeping the roots moist and encouraging growth keeps it off. The Red Currant generally makes very profuse growth, and the trees are much benefited by summer pruning, which consists in removing the suckers which spring from the base of the plants, usually very abundantly, and in shortening the side-shoots of the main limbs something in the same way as bush Pear trees. Gooseberry bushes are also benefited by similar treatment; but Black Currant bushes, unless it is to thin out the shoots, may be left alone till the winter pruning. Raspberries only need a good mulching and abundance of water at the roots when the fruit is seeding; the weakest of the young canes should also be removed to give the others room, five or six being sufficient at a stool.

Fruit Trees.—The grand point in the culture of all fruit trees is to provide a successional growth of bearing shoots or spurs. Beginning with wall trees, and taking the Apricot first, the chief points of summer culture consist in disbudding in good time, so as never to allow the shoots to get crowded and smother each other, and afterwards in keeping the front or fore-right roots regularly pinched at every two or three joints, and layering in leading shoots wherever they may be needed to cover the wall. The Apricot produces its fruit on the shoots of the previous year's growth, and also on spurs along the branches, and both should be assiduously cared for and encouraged as above directed. The roots prefer a rather firm and well-drained soil, but require, nevertheless, an abundant supply of water during the fruiting season. Much of the rain which falls upon sloping borders of a hard texture runs off, and they are often drier than is imagined. They should therefore be either slightly forked over or mulched, to prevent evaporation, and when the summer is dry well watered. We have seen trees on the open wall absolutely flagging for want of water under such circumstances, which is very injurious to the trees. Dryness at the root means the starvation of the present crop and the failure of the next.

Peaches.—With these the main thing is to keep the shoots as thinly and regularly distributed as possible. They should first be allowed to make a good growth, and then be laid in loosely, keeping the fruit always well exposed to the sun from the commencement. The root treatment is the same as for the Apricot, only as the Peach is more subject to insects, red spider particularly, mulching and watering is of even more consequence in its case, and is far more effectual than the syringe or insecticides in keeping down these pests. Mildew, however, must be destroyed by sulphur dusted on the leaves or applied by the syringe; or some of the antidotes for that disease may be tried; the "Mildew Composition" has a good name.

Plums and Cherries.—These should be treated, as regards pinching and training, like the Apricot, keeping them spurred-in in front, and letting the terminal shoots which are laid in extend as much as they will, except such as are getting the lead too much, which should be stopped. Watering and mulching are highly beneficial, as both the Cherry and Plum root near the surface of the ground.

Bush and Pyramidal Trees.—Apples and Pears on dwarf stocks require little more attention than the thinning out of the shoots and pinching the lateral ones on the main limbs, so as to admit the light freely among the branches and keep the trees in shape; but rigid formality is to be avoided. The natural bush shape is as good as any, and quite as ornamental, while it affords the greatest facilities for ex-

tending the bearing capacity of the trees. The terminal shoots of the main limbs should not be stopped at all except when very strong, or when necessary to retain the balance among the branches. Shoots that are allowed to grow always furnish the most fruit-buds. The directions also apply to trees on the natural stock, when these are trained and pruned; but the orchard is the place for them, and there thinning the branches out occasionaly is all that is needful. J. S.

Orchard House Fruit Trees.—During this season of the year there is plenty of work in orchard houses; the trees should be syringed morning and evening plentifully, and freely watered—a healthy free-growing plant will take up a considerable quantity. The trees should also be surface-dressed. I have found malt-dust mixed with sewage excellent for that purpose, but it must be prepared a month before it is used, and after the water has been added to the dust the heap should be spread out about 1 ft. in depth; do not buy the malt germs, but the dust; malt-makers will know what is wanted. Thinning the fruit must now be commenced, leaving that at the base of a shoot; thin out isolated fruits and those on leafless shoots; but as in unheated houses the stones are not yet formed, the present thinning must not be final; pinch ill-regulated shoots, and put sticks to pyramidal trees that are not straight. As the Peach has a tendency to grow into a standard, all the top shoots of pyramids must be pinched; as a general rule, leave about five leaves; ventilate abundantly. Apricots may now be placed out-of-doors for a succession; in southern districts they will ripen well in the open air. Plums and Pears may also be set outside to leave room for the Peaches and Nectarines. Look closely after the brown aphis; Quassia-chips 4 oz. to the gallon of water, and 4 oz. of soft soap added when applied, will keep the trees free from this pest; wash the under surface of the leaves thoroughly.—R.

THE SHRUBBERY.

The Best Hydrangea for Shrubbery Borders.—Hydrangea paniculata is destined to become as plentiful in our shrubberies as the Lilac. It is quite as hardy, far more showy, and lasts much longer than the Lilac, but it lacks the sweet scent of that well-known plant. It is quite the best of the now numerous family of Hydrangeas. I have, planted on an ornamental border, various Hydrangeas, consisting of varieties of H. japonica, hortensis, and Otaksa; but the H. paniculata quite eclipses them all. One plant of it, which three years ago was put out of a 4-inch pot, is now quite 4 ft. in height, and as much in diameter. Last summer it bore twenty-eight fine spikes of bloom, varying from 6 in. to 18 in. in length, according to the strength of the wood, the largest spikes being on the top shoots. The soil in which it grows is a moist stiff loam. The plant seems to want abundance of moisture at the root in hot weather, to enable it to produce its gigantic trusses of bloom. H. Otaksa ranks next as regards showiness, and it is dwarfer in habit than the old hortensis. Its foliage is much the same in shape as that of hortensis or japonica, but a little more pointed, and more glossy and smooth.—W. D.

An Easily-made Fumigator.—I have made a fumigator which I think perhaps others might like to know of. I have a brass syringe, with shifting screw jets, &c., to it. I have made a perforated metal cylinder, with a bottom also perforated; this just fits into the barrel of the syringe, and is turned over at the top so as not to move up or down when the jet is screwed on. I then fill it with Tobacco, and stick a fusee end in this, set light to it, put it in the barrel, and screw either the single jet or rose on. The working up and down of the piston rod slowly ignites the Tobacco; and so I get and keep up a stream of smoke about 18 in. long; if the smoke is wanted more spread, I put on the coarse rose. Once filling the Tobacco holder is enough to do a number of plants in my conservatory. I do it of an evening, and keep the house closely shut up till the morning, and then syringe the plants with water.—C. J. W.

House and Window Gardening.

BASKETS FOR ROOM PLANTS.

Among the many receptacles that have been named for concealing the pots of room plants, I do not observe baskets. After trying many plans, we have found nothing so good as baskets of close texture, painted, and varnished a warm brown (I believe called japanning), a colour which detracts from nothing and harmonises with everything, the brown earth and green vegetation being a safe example to follow. We send pots of the various sizes used to the Blind Asylum, and there the baskets are made to fit them; they have stout wooden bottoms, as the weight of the plant is too great for basket-work. When not required they fit one within another, and take up very little room. The varnish prevents the adherence of dust and dirt. Fresh Moss is laid on to cover the surface of the pots. Our large baskets for groups of plants 7½ ft. to 10 ft. in circumference are made of open basket-work, and are lined with Moss. And here let me remark that some of the species of Hypnum are the best in the long run for this purpose; though there are many Mosses more beautiful, but they do not last so long. The Hypnums grow on dykes or loose stone walls, and also on the exposed roots and trunks of trees, and come off in fine large flakes, very suitable for linings. It seems to be generally forgotten (as also with Seaweeds) that Mosses are complete plants, with roots and seeds, and that it is in vain to expect such species as are plucked up from among Grass, or scratched off the soil, to last long. By having two lots of Hypnum it can be changed weekly, and if spread on the floor and well watered, it is wonderful how revived and refreshed it becomes for the next week's use. In summer, when all Mosses are, so to speak, out of season, we find a good substitute for our linings in turf; first mowing it close and then cutting it into strips long enough to go round the inside of the basket. The Grass grows in a couple of days, and looks very well, peeping through the basket-work. If we were within reach of a hill, or "links," where fine turf was to be got, with such plants as Polygala, Potentilla, Thyme, Cistus, Galium, Euphrasia, Linum, all flowering amongst it a charming addition to the plant basket would be the result; as it is, we must be content with our road-side turf, drawing out Dandelions and Plantains, and being satisfied with a daisy or two. I fancy these plain brown baskets do not attract the eye from the plants—the first point to be considered, in my opinion, in any arrangement, either in the garden or house, or with cut flowers. To enhance the beauty of one plant by contrasting or combining its form or colour with others, is a safe and legitimate attempt; and we see such pleasing effects every day in the fortunate grouping or position of trees in the landscape (too seldom by any design of the planter), down to the Mosses and Lichens grouped on the trunks of these trees. But when man's inventions in the way of stone and lime, statuary, rockery, gold and silver vases, Majolica ware dishes, elaborate wire baskets, and glasses of fantastic forms, are attempted, then the difficulty is so great, that nine out of ten fail; and the tenth will be a very questionable success in the eyes of the true lover of plants and honest student of Nature. F. J. H.

Window Plants.—Windows should now be gay both inside and out. Such plants as are inside should be as near the glass as possible, regularly and well watered, but they should not be permitted to stand in pans or saucers of water for any length of time; their young growths should be pinched if they become too long. Myrtles, India-rubber plants, Callas, and similar plants that have smooth and thick leaves should be gently sponged; but Pelargoniums, Heliotropes, most kinds of Ferns, and such plants as have hairy leaves should be taken out-of-doors and syringed occasionally, in order to clear them from dust. Window boxes, if well drained, allow superfluous water to pass off freely; water may, therefore, be administered plentifully without any fear of its stagnating about the roots. A good loamy soil, mixed with leaf-mould or decayed manure, makes a good compost for plants in boxes. The beauty of Calceolarias is soon over, as is also that of several other flowers; therefore, some preparatory means must be adopted for supplying their places with fresh material, and for this purpose Pelargoniums, small plants of Acacia lophantha, Fuchsias, Nasturtiums, Lobelias, Mignonette, &c., should be held in readiness. Plants now in the boxes should be induced to display themselves to the best advantage, and for this purpose if a very narrow strip of wire netting be run along the top of the box and made to lean backwards, and another piece bent downwards in front, and some of the shoots of the plants attached thereto, a large and showy surface is obtained. Brackets and suspended baskets should likewise be well furnished with suitable plants, such as the hardier sorts of Adiantums, Polypodiums, Aspleniums, Aspidiums, Athyriums, Pterises, &c. Ivy-leaved Pelargoniums, Lobelias, Petunias, and the small-leaved dwarf-growing Ivies, are also very pretty when used as basket plants.

Fine-foliaged Begonia (B. Rex variety) suitable for walls and rocks.

GLASSHOUSES & FRAMES.

Begonias for Walls and Rocks.—The back walls of shaded plant houses, which are generally unsuited for light-loving flowering plants, cannot be better utilised than by covering them with Ferns, Selaginellas, fine-foliaged Begonias (similar to that here represented), and graceful trailing plants of elegant habit. There are several ways in which these wall gardens may be formed, but the best which I have yet seen adopted is to cover the face of the wall with a coat of peat and living Sphagnum Moss, 2 in. or 3 in. thick, these materials being held in position by means of zinc hexagon netting fastened firmly to the masonry. Under such circumstances scandent Ferns, Begonias of different sorts, Pothos argyræa, Tradescantia, Panicum variegatum, and trailing Aroids may be planted for immediate effect, and spores of quick-growing Ferns may be shaken over the moist surface as a preparation for future display. Frequent syringing is requisite, especially in dry, hot weather, until the plants have become established. In warm, shady plant houses or conservatories these walls of verdure are not only beautiful additions to the other arrangements, but they also serve a useful purpose in preserving the atmosphere in that humid and genial condition which is so essential to the welfare of most plants.—B.

Ferns for Bouquets.—Onychium lucidum is one of the best Ferns for cutting, as it not only has very elegantly-divided fronds, that render it suitable for bouquet work, but it is very lasting in water when used in a perfectly mature state. To have this and others in the latter condition, they should be grown well up to the light, where they can have plenty of air to thicken and harden them, as much of their enduring powers depend on this; thin, flimsy fronds withering almost as soon as they are removed from the plants. Davallias are mostly lasting, but the best of them all for bouquets is D. bullata—unfortunately, a deciduous variety, and therefore only available for use during the summer.—S.

Herbaceous Calceolarias.—It is surprising to see how little these beautiful greenhouse plants are grown; and few know what a loss they have in not including them amongst ther list of spring seeds. Somehow people suppose that Calceolarias are very difficult and troublesome flowers to deal with; but in reality they are not any more so than the Cinerarias and Primulas, &c., which no one thinks of doing without. The chief secret in growing Calceolarias to perfection is to constantly shift them into larger pots, as once they begin to grow, they quickly fill the smaller ones with roots. If the seed be sown any time between March and the end of May, in pots of loam and silver sand, barely covering the seed with a little sand, and then placed in a warm greenhouse, they soon germinate and will be ready for potting off into 3-in. pots in a few weeks, after which they may be shifted on into larger sizes as they require it, till they occupy the ones they are to flower in. They must be kept carefully guarded from frost through the winter in a cool pit or frame, and brought into the greenhouse and placed near the glass when beginning to throw up the flower stems. Plenty of air should be given, to cause a stout growth. It is a great improvement to both flowers and foliage to water the plants regularly twice or three times a week with liquid manure. About the beginning of May, you will be rewarded by a grand show of these beautiful flowers, varying in hue from the deepest shade of brown and crimson to the palest yellow; many are very richly marked and blotched, while others are self-coloured. They will be found very useful, either for the greenhouse or for exhibition purposes.—W. A. G.

SWEET-SCENTED FLOWERS FOR A COOL CONSERVATORY.

THE following are all plants which emit an agreeable fragrance, either from flowers or foliage, and in some instances both are powerfully scented; as for instance, Diosmas, Myrtles, and Geraniums. If a good border of turfy soil could be made many of the plants would do better planted out than in pots. This would include all climbers, and such plants as Luculia 'gratissima; Roses such as Maréchal Niel and Lamarque Heliotropes when planted out under glass attain a large size, and are nearly always in flower if in a light position. Mignonette planted in a similar position with the seeds picked off is virtually a shrub. Magnolia fuscata should be planted against a wall or pillar as should also the Jasmines. Hardy shrubs, such as Lilacs, double Thorns, Syringas, Belgian and Japanese Azaleas, should be potted in autumn and planted out again when the blooming is over. If they could be forced gently, an early bloom will be obtained that would be appreciated. Bulbs of course, such as Hyacinths and Narcissus, will be had early in the season, with Lily of the Valley, Tuberoses, and Lilies of various kinds following on in succession; but one might write a treatise on this subject and yet not exhaust it. I am assuming that the frost will be kept out, as although a house altogether unheated might be made interesting with hardy plants, or those requiring a slight protection only, yet the enjoyment is much enhanced if the structure be heated so as to keep out frost. Adenandra fragrans, Aloysia citriodora, Azaleas (Japanese and Ghent), Boronia megastigma, Carnations (Tree and Clove), Citrus (all the Orange family are suitable), Cytisus Everestianus, Cheiranthus odoratissimus (Night-scented Stock), Diosma ericoides and others, Doryphora Sassafras, Daphnes (all the family), Eupatorium odoratum, and Eucalyptus globulus, will all be found suitable. The foliage of the Eucalyptus yields an agreeable perfume, and when the plants become too large they can easily be pulled up and young ones planted, as it is one of the easiest of plants to raise from seed. French Lavender, Geraniums (all the old scented-leaved kinds, such as Lady Plymouth, Prince of Orange, Radula major and minor, citriodora, &c.,) Humea elegans, Heliotropes, Hyacinths, including the Musk Hyacinth), Jasminum grandiflorum and others*, Lonicera fragrans*, Violets (in pots specially prepared and potted early), Lilium auratum, giganteum, and others, Lily of the Valley, Pinks (including the old white and Anne Boleyn), Lilacs, Thorns (including Paul's new double scarlet), Magnolia fuscata, Luculia gratissima, Mandevallia suaveolens*, Myrtles, Pergularia odoratissima*, Pittosporum Tobira*, Prostanthera violacea, Rhynchospermum jasminoides*, Mignonette, Rhododendrons (Himalayan species and hybrids, notably Edgworthi), Roses (especially Teas), Harrison's Musk, and Petunias (single and double). Those marked thus * are climbers. H.

Ceropegia elegans.—This is a pretty climbing plant, bearing sage-green maroon-spotted flowers. It thrives well planted out in any ordinary heated greenhouse, and continues in bloom for a long time. It is not a common plant, but we believe it is to be found in Messrs. Carters' nursery at Forest Hill. It is a native of India, and a very interesting plant.

Ceropegia elegans; a greenhouse climber; flowers sage green spotted with maroon.

Fuchsia Rose of Castile.—This, though an old kind, is still a favourite with many growers. It is extremely floriferous, lasts a long time in bloom, and is equally well adapted for the formation of large specimens as for growing in small pots for general decorative purposes. Amateurs with small glass accommodation, as a rule, content themselves with treating the Fuchsia as a summer-blooming plant, not being aware that it is possible to prolong the flowering season far into the winter months. By growing such kinds as lend themselves best to this particular method of culture, and by affording them the treatment necessary to impart luxuriance and vigour of constitution, not only may the Fuchsia be had in bloom in a cool greenhouse during the late months of the year; but the same plants will flower again freely in early spring. Rose of Castile is the very best variety with which I am acquainted for this purpose; for, unlike the generality of the kinds commonly grown, it really does not appear to need any period of complete rest, retaining its foliage throughout the winter, and bursting into bloom again on the advent of the fine sunny days. It is altogether a most valuable variety and one which should be in every amateur's greenhouse. Plants from cuttings struck in spring and grown along freely during the summer months are preferable to older specimens. The cuttings should be taken off with four leaves, inserted in sandy soil, placed in a cool, shady frame or hand-light until well rooted, when they should be carefully potted-off into small pots, in a nice free compost of two parts leaf-mould and one part fibrous loam. Keep them in a frame, watering carefully, ventilating freely, shading from hot sun, and syringing morning and evening in hot weather. Shift on as required until the plants come into 6-in. pots, using more loam for the final shift and potting more firmly. Place a neat stake to each plant as soon as the need for such support is seen, pinch out the flower buds as they appear, but do not attempt to control the growth in any way by stopping the shoots; for this Fuchsia, when left to itself, naturally assumes a pleasing pyramidal form. By the latter end of August place the plants in the open air in a light but sheltered situation, allowing the flowers to develop after the middle of September, and placing the plants under cover by the latter end of the month. The result of this treatment will be a good show of bloom almost up to Christmas. After the flowers are all faded water only just enough to keep the foliage fresh. By the middle of February fresh growth will be forming, and the plants should be then assisted with a little manure water. By the beginning of May there will again be a good display of bloom.—J. CORNHILL.

Old Chinese Primula Plants.—It is a common practice with many, as soon as their Primula plants have done blooming, either to throw them away or set them in some out-of-the-way corner, where they are so much neglected that they are of no further use. Young seedlings are raised to take their place under the impression that they will make better plants the following winter than the old ones, if cultivated until that time. In many cases this is a mistake, as old plants, if given the same attention as seedlings, make much finer specimens, and produce much more bloom—until they are at least two years old—than the best yearlings. In order to suit certain special decorative purposes, we annually grow a number of seedling Primulas in 3-in. pots. About this time these are shifted into 6-in. pots, and they make fine, free-blooming, most useful plants during the succeeding winter. They bloom much earlier than the seedlings. When the plants become more than two years old they are rather inclined to get leggy; but any not having this objection may be grown for three years or more. Where large numbers of plants are raised from seeds, it often happens that they do not all produce first-class blooms. When they have all bloomed once, the worst should be thrown away, and only the best kept for growing on. Plants which have been growing in 6-in. pots may be taken out of them, the ball of soil about the roots reduced, and then be re-potted into the same sized pot. Our old Primulas were re-potted some time ago. Since then they have been kept in a cold frame with the lights over them, and shaded on very bright days; and they are now making many young leaves. Besides this, they are emitting little crowns all round about the old main one, and it is these which will produce so much bloom next autumn and winter, and make the plants appear a great mass of bloom, when seedlings will only be producing a few flower spikes from their single crown. In potting, a little of the best loam obtainable may be used, and this should be freely mixed with a good quantity of decayed manure, silver or river sand, and charcoal or wood ashes. The pots must be well drained and the soil should be put in very firm about the roots. After this, if the plant should fall on one side, two or three little pins of wood from 4 in. to 6 in. long should be placed down through the leaves into the soil close to the stem, so as to steady the head until the stem has become stronger. Any frame with a glass light to it, or other house, will do to start them into growth. As soon as the roots begin to penetrate the new soil, cease shading them altogether, and grow them as much exposed to the sun as possible during the summer, as this is the best way

ensure all soft-wooded plants blooming profusely and well during the dull days of winter. —CAMBRIAN.

ROSES.

Indoor Climbing Roses. — Vigorous-growing varieties of Roses, especially such as Maréchal Niel, Gloire de Dijon, or Lamarque, that do not flower freely if pruned to any great extent before growth commences in the spring, will now, after the principal flowering is over, require attention; whilst the plants are young, and before they have filled the space which their heads are destined to occupy, they need not be much reduced; but when they have filled anything near all the room available, if cutting back is not carried out some time in the year they get crowded with useless, weak wood, little able to produce handsome, full-sized flowers. To avoid this, now that the spring blooming is over, a portion of the large, strong, old branches may be cut out near the point on the main stem from which they spring, leaving a stump, the latent eyes of which may be expected immediately to break into growth. These will form strong vigorous branches, which will produce the best flowers next season. This removal of a portion of the old wood annually, to be replaced by new, may be carried to the extent of one-third or one-fourth the entire plant, which, so treated, will always contain a sufficient quantity of young, vigorous flowering growth, and will not attain a dimension beyond that which there is space for, and that profusion of weak, useless shoots that results from insufficient pruning will not exist. The plants at the same time should be thoroughly well washed, so as to free them from insects. If there is any mildew upon them, a liberal application of water impregnated with sulphur will be found useful. Where planted in inside borders, or in a position where the root space is confined, manure water, given so as to soak the whole mass of soil as far as the roots can extend, will be of the greatest possible use. This may with advantage be repeated from time to time for the next two months whenever the soil requires moisture.

Fly on Roses.—Continual efforts should be made to keep down aphides. Regular use of clean water without stint, applied with the syringe and garden engine, will effect the object; their numbers may be reduced in the ordinary way by crushing with the fingers or the small sugar-tongs-shaped brushes made for the purpose; but in thus crushing them on the buds the matter from their crushed bodies tends to injure the character of the flowers, unless they receive a good washing immediately after the insects are destroyed.

Potting Autumn-struck Roses.—Rose shoots taken off early in autumn, and at that time made into large cuttings 6 in. or 8 in. in length, and inserted deeply in cold frames, will by now, if all has gone well, have formed a considerable amount of roots. Those that are required for pot purposes should be taken up very carefully, so as not to break their newly-formed fragile fibres, and at once potted; 5-in. pots will be large enough, draining them well, and using the soil a little lighter and more sandy than such as is advisable when the plants have got better established, at the same time making it firm. As the plants will have pushed their shoots a considerable length, they should for a few weeks yet be kept in frames, gradually giving more air as the roots lay hold of the soil, and when they are fairly established transfer them to the open air, plunging them in ashes or Cocoa-nut fibre.

Green Fly on Roses.—The following is a simple, quick, and effectual method of clearing Roses of this pest:—Pour water slowly from a watering pot with a fine or medium rose over the leaves infested, holding them very slightly with the left hand, gently moving the fingers all the time; the insects will wash off easily the moment they feel the touch, and cleaner than if the plants were syringed for a length of time; they cannot bear the slightest contact with the fingers and water without going. If you shake the shoots occasionally during the water falling upon them, it will also help to clear them of the drowned flies. No wash is needed by the above method.—W. A. T.

The Hardy Dragon Tree (Dracæna indivisa).—Nearly all the Dracænas or Dragon Trees at present in cultivation are generally treated as tender tropical plants requiring considerable artificial heat in order to grow them successfully. Recent experience has, however, convinced many plant growers that they will luxuriate in a much cooler temperature than has been supposed, and during the past two or three years we have seen them grown freely in the London parks, planted out in ordinary soil, and treated as sub-tropical plants. The species we now illustrate is very hardy in constitution, and is not only valuable for cool conservatory and sub-tropical decoration, but is also perfectly hardy when planted out in Devonshire, Cornwall, and other southern counties, and it has also withstood the winter on warm dry soil in many parts of Ireland. A good strong plant of this Dracæna is always an effective object when planted out in sheltered positions on lawns during the hottest months of the year; and plants of it so treated are fitted to withstand a much lower wintertemperature than when they are grown in a heated structure. It is readily propagated by means of cuttings of the stem, and for pot culture we recommend a compost of fresh fibrous or turfy loam, peat, and sand, the two former in nearly equal proportions, and the plants should be well rooted and established before they are planted out. In Hampshire this plant has been known to endure 16° of frost, and if the dead leaves are allowed to remain around the stem—that is, allowing Nature to protect herself—it will stand even more cold than that. It may be mentioned that the practice of pulling off the decayed leaves of this and similar plants is often the cause of their death.

The Hardy Dragon Tree (Dracæna indivisa).

VEGETABLES.

Earthing Celery.—This operation should be performed only on dry days, taking care that none but well-pulverised dry soil is permitted to come into immediate contact with the plants. The soil should be chopped down on each side of the trench, and turned over to dry early in the morning, well breaking the lumps as the work proceeds. When the plants are dry—which they will be towards the middle of the day—the operation may be commenced by carefully removing any decayed leaves from their bases; then gather the leaves neatly up together with the left hand, and firmly place the soil round the plants with the right. When all the plants have been served thus, the sides of the trench should be evenly chopped down and the surface left neat and tidy. Many people tie up the plants with matting previous to earthing, and some use Celery collars; but neither of these plans is necessary: they only involve needless trouble and labour, and earthing can be performed by any intelligent man without resorting to such troublesome means. It is certainly not necessary to earth up Celery when it is growing rapidly, and moreover it is bad practice. A little earth, pushed down after a heavy watering to prevent evaporation, is all we should give during the growing season, and we know it to be a fact that some of those who grow the finest Celery in the country do not earth until full growth is attained; indeed, some of them do not earth at all, but effect the blanching by other means. The repeated earthings which Celery receives in the majority of gardens are not only harmful to the crop, but the cause of a great waste of time and labour. Common errors are frequently made in Celery culture—one being that in earthing-up the plants too much soil is applied at one time, by which the hearts are covered in, and are thus made to bulge out on one side and become deformed; whereas, when the operation is more lightly done, as well as oftener, the heads are kept upright and the growth is much more vigorous. Another error, which is perhaps the worst, is "earthing" or banking up the crops too heavily in autumn, or before winter sets in. This is a very common practice, especially among amateurs, who often cover their Celery over head and ears. This is sometimes done with a view to keep out the wet and frost from the crops, but in such cases the plants fail to grow from want of air; in fact, as already indicated, the plants are buried, and consequently soon become rotten; and though the wet weather may be blamed for this, it may even happen when the ridges are covered with litter or boards. It is therefore obvious that earthing should be done more sparingly, taking care that the growing hearts of the plants are well above the ridges, especially in the case of late crops. If this be done, there will seldom be any reason to complain of crops rotting, however damp and severe the winter may be. Those who protect

the ridges to fence off the weather appear to overlook the fact that the means employed for this purpose prevent the escape of moisture by evaporation from the earth, in consequence of which the plants are more apt to rot than if their tops had been freely exposed to the air.

Thinning Onions.—By thinning the crop out well you will have large Onions, and in fine seasons probably well ripened; but when a plentiful crop of good sound keeping Onions is the object, it is a mistake to thin them too much. As a rule, small or moderate-sized Onions are the best ripened; and a small Onion is just as good, in a culinary point of view, as a large one, if not better. For instance, small well-ripened Onions are preferred for pickling purposes; and to secure these it is the usual practice to sow the silver-skinned variety thickly, and leave them unthinned, and in this way "button Onions," as they are called, are produced. By thinning the plants out we should only get thick necks wholly unsuitable for the purpose. Long-keeping qualities are very much sought after by the Onion grower; and it is well known that well-ripened samples only will keep, and these are more certainly secured by leaving them thick in the bed. To leave the plants 7 in. or 8 in. apart, as is often recommended, is a mistake, unless Onions for exhibition only are required; but where sound bulbs—say about as broad as the mouth of an ordinary teacup—will satisfy, leave the plants close enough together to touch each other when they attain that size—that is, supposing them to be sown in rows 7 in. or 8 in. apart, as Onions always should be sown, in order to facilitate the clearing and stirring of the ground. If sown broadcast, then the plant should have a little more room. When thinning the crop, leave them about the length of the forefinger apart, and by autumn the ground will have the appearance of being fairly thatched with Onions, of a size and quality fit for any culinary purpose. Cottagers, who generally have not too much room in their gardens, often crop thicker than is here recommended; and beds may sometimes be seen that would astonish thin croppers. Sometimes the rows are only 5 in. apart, and the plants from 2 in. to 3 in., and the bulbs fairly clustered over one another, literally covering the ground—very nice samples, and thoroughly ripened; and they will keep good till June the following year. In order to satisfy oneself on this matter, let any one leave a thick and a thin row together, and weigh the produce at harvest time.

Earthing-up Potatoes.—As this is the season for earthing-up Potatoes, a description of the mode of culture that I have for several years practised with success may be useful. The ground in winter is well prepared by being dug up in ridges and exposed to frost. About Lady Day I have it forked down, spread manure on the surface, and then plough in the Potatoes 6 in. or 7 in. deep and 2 ft. to 2½ ft. apart. When they begin to break the ground I harrow them over with a pair of very light harrows on a sunny day, which kills all the small weeds. When about 8 in. or 9 in. high they are hand-hoed, and then require no further attention till they are dug up the first or second week in August. Last year I began to dig them on the 29th July, as the Regents had begun to grow out. In digging, they all hang to their haulms, and considerable caution must be exercised in handling them, in order that they may not be bruised. They should then be put in a long narrow heap, and covered with dry litter or Fern, thatched with "reed" or prepared straw to keep them dry. This straw is similar to that used in this neighbourhood for the roofs of cottages and other buildings. The straw for making reed is threshed and combed by hand. In a fortnight or three weeks they should be looked at, to ascertain if any are diseased; and, if this is not the case, they should be gradually earthed up, the ridge being left unearthed to prevent them heating. Last year I had some under a north wall which were not picked over until Christmas, when they were removed to the lime and sand floor of a dark cool cellar, where they keep much better after the end of the year than in ridges or caves out-of-doors. The disadvantage of earthing-up is that the first leaves are buried, and a fortnight of the short season before the disease sets in is lost, which must be taken into consideration. I believe the crop is no heavier for earthing, and the practice entails much extra labour at a very busy time. My remarks apply to good, well-drained ground; in wet soils earthing may be advisable. I find that the true Lapstone Kidney is one of the best kinds, and it does not run out if grown in the same ground; I have grown it here for seventeen years. York Regent is one of the best late Round kinds. With me it is a heavier cropper than Paterson's Victoria, and more free from disease—both are excellent in quality, but the latter is better for cropping between, as the haulm is erect in its habit. The York Regent soon runs out, or degenerates, if grown year after year on the same ground; but on planting fresh seed it produces, with good cultivation, very heavy crops. Although the tubers readily skin, and appear very unripe when taken up, the quality is excellent afterwards throughout the whole season. Many of the cottagers in this neighbourhood have followed my advice in reference to Potato growing, and have, I believe, found the advantage of doing so.—J. G., *Exeter*.

COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 14.—Sowing Parsley in cold pits for winter use; potting off seedling Campanulas; planting out Walcheren, Snow's Winter White, and White Cape Broccoli; clearing of Cabbage stumps, manuring the ground, and getting it dug up ready for another crop; shifting Caladiums, Balsams, Amarantus, and Coleus into larger pots; potting young Primulas, and placing them in a cold frame where they can be kept close until established; sowing Champion of England and Nonpareil Peas, and French Beans; also London Coleworts, and Incomparable Cabbage; planting Asparagus and some April-sown Lettuces; also planting Celery in trenches for main crop, and another batch of Cauliflowers and Couve Troncuda; putting in Lavender cuttings out-of-doors under a hand-light; thinning Onions, Carrots, and other root crops.

June 15.—Sowing Giant White Cos, the Favourite, and All the Year Round Lettuce; potting on Cinerarias and Primulas; putting out Celery plants; raking down and levelling all flower borders and beds; layering Vicomtesse Héricart de Thury and President Strawberries on pieces of turf 4 in. square; potting Stocks, Asters, Alyssums, Lobelias, and Calceolarias for room and conservatory decoration; sowing Syon House Cucumber, Chicory, and American Cress; planting Scotch Kale, Fearnought Cabbage, Savoys, Broccoli, and Vegetable Marrows; watering thoroughly outdoor Strawberries that are swelling their fruit, and afterwards covering the ground with short Grass, in order to keep the fruit clean; nailing in shoots of wall trees, and removing all curly leaves infested with insects; pegging down Tropæolums and Verbenas, and staking up Pyrethrum flowers.

June 16.—Potting Musk plants for autumn use; also Lady Plymouth Pelargoniums; sowing Shilling's Queen and Atkins' Matchless Cabbage, and various kinds of Endive, Lettuce, and Radishes, also Golden Ball and American Redtop Turnip; thinning Apples, Pears, and Plums; putting in cuttings of show Pelargoniums and Mimulus in frames, and layering British Queen Strawberry runners for next year's forcing; sowing Canadian Wonder and Long-podded Negro French Beans; striking Peas and getting them earthed up; thinning Turnips, and Spinach.

June 17.—Sowing Coleworts and Little Pixie Savoys; planting out another row of Cardoons; dividing and planting out double Daisies; thinning out Pears where hanging too thickly; clipping Box edgings; mulching Peas with rotten manure; tying in all the leading shoots in Peach houses and watering the borders where required; clearing off Lettuce stumps and Spinach; shifting Chrysanthemums into their flowering-pots; also Achimenes; sowing Negro Long-pod French Beans and a little Parsley; planting Endive, Lettuce, Melons, and Gourds; also Celery and April-sown Cabbage, and making up vacancies among Winter Greens; tying up Carnation flowers; thinning Turnips and stopping Vines; hoeing between all growing crops.

June 18.—Sowing Silene pendula and Forget-me-Nots; potting on large Coleuses and Cockscombs; putting sticks to Fuchsias and Phloxes and tying them out; turning gravel walks to give them a fresh appearance; nailing in all the leading shoots of Plums, Apricots, and Peaches, and giving the latter a good washing with the garden engine every evening to keep down red spider and other insects; cutting back Ivy where overgrowing windows; gathering green Currants for bottling; potting seedling Cyclamens, and placing them in heat; also potting some Violets and Lobelias for indoor decoration; sowing Mignonette in pots; also Melons and Cucumbers; planting land just cleared of early Peas with Snow's White and Cooling's Matchless Broccoli, also Neapolitan Cabbage Lettuces on Celery ridges; putting Poinsettias in heat to induce them to produce a supply of cuttings; examining Peach trees carefully for green fly, and sulphuring hot-water pipes in Vineries to ward off red spider; syringing Ferns to wash off thrips, and putting paraffin on Apple trees to kill American bug.

June 19.—Planting out Spiræas; also Autumn Giant Cauliflower; taking up Hyacinths; netting Cherries that are ripening, also Strawberries; digging out trenches in which to plant Cauliflowers, and manuring others intended for Celery; plunging out-of-doors large plants of Dielytra spectabilis that have been used for forcing; sowing Snowball, Red Globe, and American Strap-leaved Turnips; planting Autumn Cauliflower and Purple Sprouting and Early White Broccoli.

Glasshouses.

Passifloras and other creepers must now be thinned, taking care to preserve as large a quantity of young wood as possible without overcrowding, and permitting the shoots, after they reach a certain height, to hang down in graceful festoons. Keep up a good succession of flowering plants from greenhouses and frames to replace those going out of flower.

Pits and Frames being now clear of bedding plants, may be filled with annuals, Pelargoniums, Fuchsias, Hydrangeas, Begonias, &c., in order to forward them for the decoration of the conservatory. Hydrangeas are now coming into bloom, and require some assistance in the way of manure water; any shoots not furnished with flower-buds should be removed and used for purposes of propagation. By means of plenty of ventilation—complete exposure, in fact, during fine weather—retard the show Pelargoniums. Old roots of Cyclamens not bearing seed-pods may be transferred to a frame having a north and shady aspect. The young ones must be kept in a good growing state. Plants of Spiræa japonica that have done flowering should be transplanted into a plot of ground that is rich, moist, and warm.

Primulas and Cinerarias.—Both Primulas and Cinerarias, if sown as advised, will shortly be fit for placing in 2½-in. pots in soil consisting of three-fourths good loam and one-fourth rotten manure and leaf soil in equal quantities, with a good sprinkling of sand. When potted, put them into frames facing northwards, as these plants cannot bear exposure to full sunshine, to break the rays of which, when very bright, shade with a piece of netting or thin canvas. Cinerarias should stand on a bed of ashes that will hold moisture and maintain a humid atmosphere about the plants; they cannot endure being placed on shelves exposed to dry currents of air. Place Primulas on inverted pots, so as to keep them up near the glass, or they will become drawn and long in the leaf-stalks. After potting, keep the lights closely shut down at night with only a little air on during the day until they have commenced to grow freely, after which give air plentifully night and day.

Pinks.—Cuttings of Pinks for forcing should now be put in and potted on singly as soon as rooted. They are easily managed, do not occupy much room, and, with a little warmth, afford a succession of sweet-scented flowers alike suitable for bouquets or vase decoration. They are not much subject to insects, though green fly sometimes attacks the young leaves; its presence, however, is easily detected by the leaves beginning to curl up. Dipping and syringing with Tobacco water will be found the best remedies. The plants must always be sufficiently supplied with water, or they get into a stunted condition.

Salvia gesneræfolia.—Cuttings of this put in some time ago will be ready for moving into 6-in. pots. This most useful winter-flowering subject naturally assumes a bushy habit, but to furnish the plants with plenty of shoots near the base, the points of the leading growths should now be pinched out. These ought to be at once plunged out-of-doors in a sunny sheltered situation. It is a free grower, and makes roots rapidly. In the course of six weeks' time the plants will require moving into larger pots for blooming, keeping them outside till the beginning of September.

The White-flowered Abutilon Boule de Neige blooms nearly during the whole year, producing in succession its beautiful drooping flowers, alike suitable for display on the plant or for cutting. It is of the easiest possible management. Cuttings of the half-ripened shoots, 5 in. or 6 in. in length, inserted singly into 3-in. pots in sand, kept moist, shaded, and covered with a propagating-glass in a little warmth, will strike in a few weeks, and make nice small specimens that will bloom through the autumn and winter. A. vexillarium and A. vexillarium igneum are equally worthy of cultivation, flowering freely in small pots with ordinary greenhouse treatment. The two latter, grown with single stems 12 in. or 18 in. in height, and then stopped so as to form a bushy head, make beautiful miniature standards suitable for table or window decoration, or for placing in the greenhouse, where, if raised on inverted pots, they greatly relieve the even surface of dwarf-growing subjects.

Acacias and Cytisus.—Acacia Drummondi and A. armata are the two best varieties

for pot culture. They are of easy growth, and not liable to die off suddenly through either a superabundance or scarcity of water, like many hard-wooded plants. Young plants of these Acacias that have been grown on from a small state, and others that are larger and have been cut back and re-potted after blooming, will in most cases, have made sufficicient growth, and should be exposed in the open air; this is necessary to fully harden and mature the growth and to induce the formation of flowers, for if the plants be kept under a glass in a growing state all the summer they will not produce flowers in such profusion as if thus exposed. By getting them out-of-doors in good time they will be in a condition to bloom earlier through the winter. The very useful winter-blooming Cytisus racemosus superbus, which is much better than the common C. racemosus, requires to be similarly treated. If a few examples of this free, delicate, yellow-flowering plant be grown, a succession of its highly fragrant flowers may be had through the winter.

Fruit.

Thin the shoots and berries of Grapes as required; only allow one bunch to each lateral, and pinch the shoot at the second eye beyond the bunch. If the borders are indoors, see that they are thoroughly moistened. In the Peach-house border watering must also be attended to, and liquid manure supplied now and then. Disbudding, syringing, and other daily operations will require attention. Top-dress Cucumber beds immediately the young roots are seen protruding above the surface, thin out superfluous laterals and decaying leaves, and always maintain a regular supply of young and good bearing wood. Never permit too many fruits to be on one plant at a time, as they only prevent each other's development. Syringe both Melons and Cucumbers twice a day with clean tepid water; but if mildew be suspected, mix with it a little flour of sulphur. Strong and healthy plants militate against red spider; therefore manure water must be freely applied to Cucumbers. Melons ripening require to be kept a little on the side of dryness. As the frames are now cleared from bedding plants, the latest-sown Melons should be put in them; these will come in late in the season. The beds need not now be made so substantial as was necessary earlier in the season; if a good supply of last autumn's leaves are at hand, they may be made of at least one-half of this and well-prepared manure. Three feet in depth will be enough now; beds of this description will be sooner cool enough to receive the plants than those recommended earlier in the season. In localities not favourable to the growth of Tomatoes, or where a difficulty has been experienced through attacks of the disease with which this vegetable has of recent years suffered, it would be advisable to grow some in frames. If the plants are put into 12-in. pots and plunged in the ground, and the frames elevated on bricks, so as to give increased head-room, good crops may be secured. The principal thing to be observed in their culture is to keep the plants sufficiently thinned and well tied out, not allowing them to suffer for want of water, and giving enough air to induce stout growth.

Vegetables.

Whenever a crop is done with, manure and dig the land on which it grew, in order to have it in readiness for something else. Nothing impoverishes the ground so much or looks more untidy than runaway vegetables. Peas in windy places are sometimes apt to partially escape from the sticks which support them; when this tendency is first noticed, if a strand of rope yarn is run along the rows on the lee side and linked here and there to the sticks, it will turn them back in the right direction and prevent them from being broken down.

Make a further small sowing of Early Horn Carrots; there is a frequent demand for small, young Carrots, which it is always best to anticipate. Sow Spinach once a fortnight in cool, damp-bottomed land that has been deeply worked; in dry weather it is sometimes a disappointing crop. Sow Turnips to succeed those just up; burnt earth or ashes from any substance except coal has an invigorating influence upon the growth of Turnips in dry weather. The Red American Stone and Orange Jelly are the best Turnips for sowing at this season. Avoid, if possible, the necessity for sowing in freshly-dug land. If the land has been prepared a week or so, the moisture, even in dry weather, will have risen by what is termed capillary attraction, and by drawing the drills rather deeper than necessary or desirable early in the spring, the seeds may be laid in moist soil, and germination thereby assisted.

Continue planting, as opportunity offers and space becomes vacant, such crops as Brussels Sprouts and early Broccoli. A sufficient breadth of spring-sown Cabbages should also be planted, giving them room according to their kinds; small varieties, such as Cocoa-nut or Little Pixie, will do if they be placed 15 in. apart each way, whereas those of the Enfield Market class should stand 18 in. asunder in the rows with 2 ft. between. Savoys should have a similar space allotted to them, according to the small or large variety grown. A few spring-sown Red Cabbages should also be planted 18 in. from plant to plant, and the rows 20 in. apart. With the large number who cannot find room until something that has preceded them is cleared off, there is no chance but keeping the plants until the required space is at liberty in the beds in which they were recommended to be pricked out a short time ago, from which they can be removed with very much less check than if allowed to remain in the seed-bed until permanently planted. The main crop of Celery may now be planted, choosing the first favourable opportunity when the weather is showery: for, although the plants may not be so large as to take any harm in the nursery bed, they will receive less check from moving than if planted later when they are larger.

CONSTRUCTING A FERNERY.

THE great point in constructing a Fernery is to provide a sufficient body of soil of the proper description for the roots to work in, at the same time making due provision for maintaining the same in a sweet healthy condition. Ferns vary somewhat in their requirements with respect to soil, according to their respective natures, some thriving only when planted in pure peat, others growing stronger when a certain portion of loam is added thereto, many kinds being benefited by the addition of good leaf-mould. Every kind of Fern, however, with which I am acquainted will grow more or less satisfactorily in good fibrous peat; therefore I would advise that this form the sole ingredient employed in an indoor Fernery. The beginner cannot, therefore, make a mistake, but will have the satisfaction of knowing that each plant is provided with a suitable rooting medium. In a small house the best arrangement would consist of a walk in the middle, not extending quite to the end of the structure, but allowing space for the formation of rockwork. On each side of the walk a sloping bank of soil must be thrown up, placing here and there amongst it pieces of sandstone, brick burrs, or any material of a similar nature, arranging them as naturally and informally as possible, and creating here and there cosy little nooks, which may prove congenial homes for some of the more delicate rooted species. Some kinds, especially mountain varieties, only give satisfaction when the fibres can touch as it were some inorganic substance. These kinds love moisture at the root, but it must be accompanied by most perfect drainage. I would, however, warn those attempting the formation of a Fernery not to overdo the matter in this respect. Just enough rocky matter to ensure drainage, and to impart a natural appearance is necessary, and no more. The system, too, often followed of building up a rockery in a solid way, leaving here and there a shallow pocket, cannot be too severely ensured. Even the small growing kinds languish in such places, and as for those of a naturally vigorous habit they can never, when thus starved, afford any true idea of their beauty and manner of growth. Virgin cork may be used just in the same manner as the hard materials named. It may be buried in the earth here and there, allowing it to project from the soil. Any naked portion of the wall may also be covered with it. There are also some kinds of Ferns, such as the Elk's-horn and the Davallias, which, if wired on to cork with a little Sphagnum Moss will thrive very well thus treated, provided that the Moss is kept moist during the summer months. The lower portion of the rockwork may be bordered with such Mosses as Selaginellus Kraussiana and helvetica, and other species may be introduced with good effect in other parts of it. Care must be taken to plant the strong-growing kinds at the back, coming gradually down to such as are distinguished by their small proportions. With respect to a fountain, if such be desired, it may be placed according to the taste of the owner. Our own impression is, however, that unless arrangements can be made for ensuring a constant supply of pure water this part of the affair is best left out, especially in a house of limited dimensions. J. CORNHILL.

Do Ferns require Sunshine?—Ferns dislike bright sunshine, thriving best where the atmosphere is constantly moist and the light of a subdued description. At the same time, it must be admitted that this interesting family of plants is often subjected to treatment which is far from being in accordance with their nature and requirements. Many growers make a practice of either heavily shading their Ferns during a great portion of the day, or of creating dense perpetual shade by damping the glass with a mixture of some kind, not appearing to realise the fact that Ferns, like other plants, require a certain amount of light to build up their tissues; and that when unduly deprived of its influence, the foliage cannot well attain its due amount of healthy vigour. There are some species which will thrive in very light-excluded situations; others, again, such as the generality of the Adiantums, require a considerable amount of light, and are even benefited when they catch at some part of the day a portion of the sun's rays. Many of our most beautiful stove species, such as the Gold and Silver Gymnogrammas, seldom retain their vigour and beauty long unless placed in a very light position. Those who would wish to form a correct idea of the requirements of the Fern tribe in this respect should visit their native haunts. There they will see at a glance that every plant receives a large share of filtered light; they will note that in every case, although the plant is well sheltered from the glare of a hot sun, it invariably turns towards the light; and in most cases it will be found that either the morning or evening sun reaches it. If the grower takes Nature for his guide in this matter he cannot err. Whether his plants be grown in a glass structure or in the open air the same rules will apply. A slight shade of tiffany, to be applied only when needed, is all that is required; and if the structure has a north aspect, but little artificial shade will be required. The plants will get a maximum of light without being subjected to the aridity which is apt to prevail in a structure so situated as to be exposed to the summer's sun. These remarks apply equally well to the construction of Ferneries in the open air. Choose, if possible, a situation where the plants are completely screened from the noonday sun, but where they are at no time densely shaded. The north side of a wall or building, or a situation in the immediate neighbourhood of tall trees, where the early morning sun, as well as its departing rays, penetrate—where the atmosphere is at all times cool and moist—is just the place in which Ferns thrive, and attain a luxuriant development.—J. C. B.

Hardy Climbers for Basket Handles.—Scarcely any hardy climber is so well suited to this purpose as Ivy, for it is evergreen, permanent, and will bear any amount of trimming. Showy handles would detract from the gay colours of the flowers massed in the baskets. A margin of Ivy and the handle covered with the same material, whether green or variegated, greatly improve the appearance of iron wire baskets. Some baskets should be dressed with green, some with golden, and some with silver-leaved Ivies; and the floral fittings should be such as would harmonise with these colours. Petunias, Verbenas, Phlox Drummondi, and similar plants, are exactly suited for baskets.—A. D.

Hardiness of Lobelias and Primulas.—It may be interesting to your readers to know that the beautiful Lobelia cardinalis, which bears scarlet flowers and dark brown leaves, has lived out in a border through the whole of last winter, a sprinkling of ashes merely being used to protect the roots from frost. Also Japanese Primulas are quite hardy here, and have lived through the two last winters in the open ground.

This is in Herefordshire, by no means a warm climate.—M. C. H.

The Sickle-leaved Catchfly (Silene falcata).—This pretty Catchfly forms perennial tufts consisting of numerous curved, awl-shaped, hairy leaves. The flowers are borne singly on stems about 6 in. high, and are about ¾ in. across; the petals are divided into halves down to the throat, as are also the central appendages, the colour of the whole being a creamy white. It is a native of the Bithynian Mount Olympus.—W.

HARDY JUNE FLOWERS.

THE engravings on our next page represent some hardy plants which flower in June, in addition to those we gave last year. Although some here given are not the best hardy flowers that bloom in June, they are all well worth growing.

Silvery Yarrow (Achillea Clavennæ).—A dwarf, white-leaved, distinct plant, 6 in. to 10 in. high. Flowers white, in neat heads standing well above the foliage. A good and easily grown rock plant, and also an excellent subject for the front rank of the mixed border, where the soil is not too cold and stiff. On congenial soils it might be used as an edging plant for the sake of variety. Increased by division of the tufts in autumn or spring.

Lebanon Candytuft (Æthionema coridifolium).—A little novelty in leaf and flower distinct from any other kind in cultivation. Flowers rather large, of a pleasing flesh-colour prettily veined with rose, in small dense clusters. It does not possess the rude vigour of our evergreen Iberises, among which it is placed by some authors, but it is none the less valuable for being unlike them, and is fitted for association with a dwarfer and more select class of subjects. it should be planted on warm and sunny parts of the rock garden, in well-drained sandy loam. Increased by cuttings or seed.

The Pot Marigold (Calendula officinalis).—This excellent old plant can be had "gay" late in autumn, as well as in the early part of summer. Our beds of it are dazzling, and the flowers double to the centre; such a blaze of colour could not, at this season, have been had with any other plant. After saving sufficient seed, we cut down the plants to the ground, thoroughly soak the beds when needful, and in about three weeks the "evergreen tufts of leaves" are again in full growth, and by the end of August the second crop of flowers begins to appear. A top-dressing of fine soil helps the shed seed, which produces plants in abundance, and a constant succession of flowers.

Mountain Coronilla (C. montana).—An erect, free-flowering, slightly glaucous perennial, 15 in. to 18 in. high. Flowers yellow, fifteen to twenty in each umbel. Suitable for the mixed border, rougher parts of the rock garden, margins of shrubberies, and naturalisation in ordinary garden soil. Division or seed.

Amoor Pink (Dianthus dentosus).—A dwarf but sturdy and large-flowered species, 5 in. or 6in. high. Flowers more than an inch across, of a fine violet-lilac, with a regular dark spot formed of purple streaks at the base of each petal, producing a dark eye in the centre of the flower; the petals toothed at the margin, and bearded at the base. The rock borders of sandy well-drained loam. Seed.

Broad-petalled Geranium (G. platypetalum).—One of the handsomest plants of its family; 1½ ft. to 2½ ft. high. Flowers more than an inch across, deep violet, with streaks of a darker, almost reddish hue. Borders, or naturalisation, in ordinary soil. Division.

Scarlet Lychnis (L. chalcedonica).—A well-known old border plant, 1½ to 3½ ft. high. Flowers scarlet, in clusters. There are in cultivation single white, double white, and double scarlet; the best is the double scarlet. Borders, in light rich loam. Division and seed.

Gaillardia picta.—This is a handsome border plant, producing large showy flowers, rather profusely and in long continuance. It requires rather a dry warm situation and rich light loam, as the plants are apt to perish in heavy soils in cold wet places. Where they are apt to die in winter they may yet be used in mixed borders, treated as half-hardy annuals; for if sown in a mild hotbed at the end of February or the beginning of March, they may be grown into good plants, and a full display of their fine flower-heads obtained as early as upon those which may have withstood the winter in the borders. They are propagated by cuttings in autumn or spring in the manner of general bedding plants, and by division in spring, assisted afterwards by slight heat if the locality is a cold one.

Coppery Monkey-flower (Mimulus cupræus).—A dwarf, very free-blooming kind; 8 in. to 1 ft. high. Flowers coloured, both on the inside and out with yellowish-copper, or reddish-brown—almost bordering on crimson, with reflexed, velvety, and somewhat transparent margins; lower lip prominent and plaited near the throat, which is dotted with purplish-crimson. Leaves usually tinged with red. Borders, or the margins of beds of American plants, in light moist loam and peat. Division or seed, from which it varies much.

Dark-eyed Viscaria (V. oculata).—This is a showy and beautiful hardy annual, well suited to the hardy flower border. The seed should be sown in autumn or spring, and the seedlings thinned out when large enough. It grows about 6 in. or 8 in. high, and bears a profusion of rose-coloured blossoms having a dark centre.

Fraxinella (Dictamnus fraxinella). — A showy border-plant, covered with glandular

Fraxinella (Dictamnus fraxinella).

hairs, exuding a strongly scented and inflammable oily resin; 1 ft. to 2 ft. high. Flowers pale purple, in long terminal racemes; there is also a white variety. Borders, in any soil, but usually best in a dry one. Where it grows vigorously, it would be worth placing in isolated tufts in the Grass near the margins of shrubberies, in unmown spots. Division or seed, which should be sown when gathered.

Gladiolus Colvilli.—This is one of the hardiest of the Gladiolus, and one that is best suited for permanent situations in borders or in front of shrubberies. If planted in deeply-trenched well-manured soil any time from December to April, and left undisturbed, it will at this season of the year yield abundance of spikes of purplish-lilac blossoms. The bulbs of this variety are very cheap, being obtainable at about 10s. per hundred.

Horned Violet (Viola cornuta).—A very ornamental and popular species, 6 in. to 10 in. high. Flowers nearly all the summer, pure white. Beds, edgings, borders, &c.; best in sandy loam, though it will grow almost anywhere. Division, cuttings, or seed.

Double-flowered Silene pendula.—This is really worth growing, as its semi-double and double flowers are larger, of a richer colour, and continues in beauty much longer than those of the single kind. Indeed, this plant has in addition the merit of furnishing useful flowers for cutting, as many of the blooms are as double as those of a Pink. Lovers of spring gardening will find this double variety worthy of attention.—D.

Mulching in the Flower Garden.—During hot dry weather vegetation frequently suffers more from heat and drought on strong land—from its tendency to crack into deep fissures, and thus part rapidly with its moisture—than on light sandy soil, where the surface remains intact. There is, too, a vast difference in the power of various soils, often even in the same locality, to absorb heat during bright sunshine, and it is on those soils which, either from their colour or composition, may be termed hot soils, that the value of a thin covering of some non-absorbent retentive substance will be most appreciated. For several years past I have mulched nearly all the beds in our flower garden, and with the most satisfactory results. In the case of all plants which are benefited by a little extra nourishment, we mulch with short manure; but in the case of others that usually make growth enough without any such support we simply cover the beds thinly with short Grass, from which the plants derive much benefit, and the saving of labour in watering is very considerable. Indeed, I did not think that any amount of watering would produce the same result, because it tends to encourage surface rooting, and every now and then something occurs that, for a short period at least, prevents the accustomed supply being given, and in a hot soil like ours the young surface roots soon perish; where, however, the beds are mulched there is no occasion to feel uneasy about the water supply. In most cases it is best to put on the mulching as soon after planting is finished as is convenient. Verbenas, Violets, Ageratums, Calceolarias, Heliotropes, Iresines, Coleus, Tricolor Geraniums, &c., we mulch with manure decayed sufficiently to break up easily with a fork. I have generally used horse manure, but last season I obtained it from a bullock-yard, the manure from which is of a cooler character than that from stables, and better suited for a hot soil. The expense of the manure compared with the well-being of the plants and the saving of labour in watering is a mere trifle. It should be placed evenly all over the surface of the beds with the hand, and where the appearance of the manure is objectionable, about 1 in. of fine soil should be placed over it, and all plants that require pegging down should receive that attention in good time. Pelargoniums of the scarlet section will stand a good deal of drought in a deep soil; but in hot summers a thin covering of short Grass or Moss is a great help to them, and, if put on in time, will prevent their losing their lower leaves. This class of plants usually makes growth enough, and therefore all they require is some thin covering to check evaporation. Petunias, when once established, even on the hottest and driest soils never seem to require either watering or mulching; a dry hot season, in fact, suits them best, and very showy inexpensive beds they make when trained low on sticks bent over the beds. Cocoa-nut fibre refuse is excellent material for mulching flower beds. It looks well and keeps the ground very moist, and it is, moreover, so cheap that no one need be without it.—H. S.

Brompton Stocks. — These are very beautiful in borders at this time of the year, but are more abundant in small gardens than in the parterres of the rich. The giant scarlet, however, so massive and withal so fragrant, is worthy of a place in any garden, large or small. Not less beautiful, too, but much rarer, is the Giant White, a grand Stock that, when well grown, will produce marvellous spikes of bloom. I have seen them on plants 3 ft. in height, 12 in. in length, and equally fine all round.—D.

Achillea aurea.—This is one of the showiest, if not the showiest, dwarf member of its large family, and is admirably suited for the rock-garden, for choice borders, for bedding-out, or for edgings. It grows 12 in. or more high, has finely-cut leaves and bright golden-yellow flowers, abundantly produced, and appearing for a long time in succession on young plants recently transplanted into rich ground.—J. C. N.

Silvery Yarrow (Achillea Clavennæ).

Colvill's Gladioli (G. Colvilli).

Mountain Coronilla (C. monta

Gaillardia picta.

Amoor Pink (Dianthus dentosus).

Lebanon Candytuft (Æthionema cordifolium).

Broad-petalled Geranium (G. platypetalum).

White Horned Violet (Viola cornuta alba).

Coppery Monkey-flower (Mimulus cupræus).

Scarlet Lychnis (L. chalce lonica).

Pot Marigold (Calendula officinalis).

Dark-eyed Viscaria (V. oculata).

HARDY JUNE FLOWERS.

ANSWERS TO QUERIES.

2246.—**Rhododendrons not Flowering.**—Rhododendrons do not require pruning; they naturally assume a dense, compact habit, and the employment of the knife in their case could only be productive of evil consequences. Plants which make a free growth seldom fail to flower unless the situation be of a very sun-secluded nature. The Rhododendron, like other flowering shrubs, requires a certain amount of light and air to mature the wood. Perhaps the trees in question are in a shady situation. This season, however, bloom is more or less scarce in most places; the past summer being deficient in solar heat, the blooms did not form.—J. C.

2247.—**Araucaria Losing its Branches.**—A top-dressing of good sound loam would in all probability prove beneficial. Be careful, however, not to let it touch the stem of the tree. It is not at all uncommon for the Araucaria to lose its lower branches when too closely environed by other trees and shrubs. When standing in a free, open spot, it seldom suffers in this manner. If your tree is shut in by shrubs of an ordinary description, we would advise their prompt removal, or the tree will probably suffer to a serious extent. —J. C. B.

2265.—**Tacsonia Van Volxemi.**—Young plants of this climber require but little pruning. Encourage them to make liberal growth by means of copious waterings and frequently syringing the foliage in hot weather. In the case of established specimens, the strong shoots may be shortened back, and all weakly wood thinned out. When this plant is trained to the roof, it is better to allow the individual shoots some freedom of development. If permitted to droop down somewhat irregularly from the roof, it presents a more natural and far more pleasing appearance than when a more rigid course of training is pursued. —C. B.

2259.—**Narcissi Failing.**—We can only surmise that the bulbs are deficient in vigour. As soon as the foliage decays, take them up and plant them in a rather cool and sheltered situation. The Narcissi, as a rule, delight in a liberal supply of moisture at the roots, and thrive best in a loamy soil. Take out the natural soil about 18 in. in depth, fill up with a good compost, consisting of turfy loam and a little leaf-mould and well decomposed manure. Plant so that the bulbs come about 2 in. under the surface, and do not disturb them again. Thus treated, they should flower freely every spring. C. B.

2271.—**Oleanders not Blooming.**—We should suppose that the plant in question does not get enough light and air when expanding its blooms. As soon as the flower buds appear, admit air freely. It would, indeed, be better to place the plant in the open air in a very sunny position during the summer months. The growth made is probably of a somewhat feeble nature. This plant revels in hot sunshine in combination with abundance of moisture at the root during the growing season. —J. C.

2261.—**Watercresses.**—The profit to be made out of half an acre of Watercresses depends on so many circumstances that it would not be safe to estimate; but with a good soil, retentive bottom, and care that the crop, once established, is never stinted in a constant supply of water, could not fail to show a most profitable result. A simple method of spreading the water over your ground will be to bank up the stream at the highest point, then cut V shaped trenches from that point right and left, about 4 in, or 6 in. deep, following every irregularity in the ground in a serpentine manner, always maintaining the same level, and only allowing sufficient fall to induce a gentle flow of water along the entire trench. Success will greatly depend on the careful construction of this trench: a dead level would be fatal, as the points most remote from your water supply would remain dry through absorption, &c., and tapping the trench at intervals to supply the beds below; on the other hand, too great a fall would produce scour in the bottom of the trench, which must be very carefully guarded against. Your beds should be about 3 ft. wide, perfectly level, and following the line of the trench; the outer edge should be lined with slate, driven down to the hard bottom and rising quite 3 in. above the soil, and the points made comparatively water-tight by overlapping and a liberal puddling of clay: this, if effectually carried out, would give a perpetual supply of about 2 in. of water over the surface of the beds, without which, I am of opinion that Watercress growing cannot be made a financial success. Each succeeding bed should be made in the same way, the overflow from above supplying that below. The trench should be tapped at intervals of not less than 6 ft. or so on from bed to bed to the lowest part of your ground. A footway from 12 in. to 18 in. should be left between each bed, which will much more than repay itself in the gathering of your crop and repairing leakages. The indiscriminate mauling that natural Watercress beds are subjected to will at once point out the desirability of having these footways, and not having your beds too wide. I do not know a more generous plant than the Watercress if liberally treated. It delights in shade and plenty of rich manure. I grow it freely under a quickset fence in a natural stream, banked at intervals to produce a normal flow, and occasionally drop at the head-water a spadeful of finely decomposed manure and loam mixed, with a little salt added, which finds its way, through the action of the water, to the whole bed.—WATERCRESS.

2258.—**Planting a Rockery.**—The following are all pretty and interesting species, and should thrive in the situation mentioned:—Sempervivums arachnoideum and Browni, Sedums acre aureum, carneum variegatum, and Lydium, Saxifraga longifolia and the hardy species of Cactus, Opuntias Rafinesquiana and missouriensis. All these should be planted on the upper portion of the rockwork in the hottest and driest positions. Other suitable subjects consist of Androsace sarmentosa, Anemone apennina, Arabis lucida variegata, Lithospermum prostratum, Polygonum vaccinifolium, Saxifraga pyramidalis, Phlox Nelsoni, and Campanulas turbinata and carpatica. In the dampest positions may be planted Ramondia pyrenaica, Gentiana acaulis and verna, and Primulas cortusoides, amœna, denticulata, and cashmeriana.—J. C. B.

2257.—**Orinthogalum arabicum.**—It is difficult to assign a reason for the bulbs not flowering. Try the following treatment. Put the plants in a cold frame, just shielding them against vicissitudes of climate, watering when needed until the foliage dies away. Pot them again in October, and plunge the pots to the rims in a cold frame, allowing them to remain there until the flower spikes appear. This species flowers freely when planted out in the open air.—C.

2263.—**Jonquils and Tulips.**—The Tulips and Jonquils should not have been removed from the ground until the foliage was quite decayed. We fear that you will get but a poor display of flowers next year. Unless you have particular reasons for so doing, there is no need to take up the bulbs at all. If the soil is well prepared for their reception, and the ground around them is not much disturbed by the spade, they will increase in strength, and will flower freely every year. It is, indeed, only in this manner that the true beauty of these spring-flowering bulbs is fully displayed; they should be seen in masses, and then they produce a very pleasing and natural effect If the soil is naturally good, dig it deeply, working in some rich but thoroughly decomposed manure. Plant the bulbs in October, burying them several inches under the surface. Give them an annual top-dressing of manure, applied in the autumn, and allow them to remain undisturbed. Should the natural staple be very sandy, mix with it some good loam; if, on the contrary, of a heavy retentive character, lighten it by the admixture of some leaf-mould, river sand, or wood ashes. —J. C.

2252.—**Hardy Perennials.**—Let me advise "Rustic" to procure some seeds of Primula japonica at once, and sow in a seed-pan to transplant early next spring for flowering. It will be weeks, or perhaps months, in germinating, but is very showy, and quite hardy. Mimulus moschatus Harrisoni is showy and good. Gaillardia picta and Calliopsis philadelphica versicolor nana are not common perennials, but very good.—AMATEUR.

2245.—**Wall Climbers.**—Passiflora princeps, Tacsonia etoniensis, Rhyncospermum jasminoides, and Plumbago capensis, are all suitable subjects for the situation mentioned.—C.

2249.—**Manures.**—Pig manure is one of the most fertilising, but it should be well rotted; in the raw state it is not suited for plants unless it is mixed well with leaf-mould and good earth.—HENRY BROWN.

2266.—**Strength of Manures.**—Fowl manure is about half as strong as guano. My advice is not to dust either guano or fowl manure over the Onions, as some persons do. Mix well with water, so as to form liquid manure, and water at the roots only. This plan is best for Onions, flowers, and Lettuce. Many crops are spoiled by the dusting method.—HENRY BROWN, *Northallerton*.

2274.—**Rose Tree not Growing.**—"Bert" made a mistake in pruning his Rose at the same time as he re-potted it, and leaf-mould is not strong enough; well-decayed stable manure should have been mixed with the loam. "Bert" should remember also that unless the plant has filled the pot with roots it does not require one of larger size. He has probably over-watered the plant. Keep it rather dry, and dress it with decayed manure.—AMATEUR'S ADVISER.

2319.—**Sawdust for Garden.**—Is sawdust of any use in a garden? Would it improve a clayey soil?—CROSSCUT.

2320.—**Liquid Manure.**—I have arranged for the bedroom slops, soap suds, and kitchen slops, to come into a tank in the garden diluted as they are. Can the urine and soap-suds be too powerful? If copperas (sulphate of iron) be used to deodorise, would it impair the manurial value of the liquid?—ELLCEE.

2256.—**Fennel as a Salad.**—It is not the common Fennel that is so much used in Italy, but a variety called Finochio, It is blanched and eaten like Celery, either raw or cooked. Finochio requires a light rich soil, and rather moist situation. Sow from April to July in deep drills 1 ft. apart; cover the seed lightly. Thin out the plants in the rows to 8 in. Earth up when sufficiently large.—OMBU.

2309.—**Digging Potatoes.**—I planted some Mona's Pride Potatoes on the 29th March, and the tops of some of them are about 6 in. above the ground. When might I expect to turn some Potatoes up?—NOVICE. [In the course of a few weeks dig up a root and see for yourself whether you can turn up any Potatoes.]

2310.—**Rats in Vine Border.**—I have a greenhouse with five Vines in it Two of the Vines made a good start, and are looking well, with a good show of Grapes, but turning yellow; while the other three made no growth. On examining the border I found the roots nearly eaten up with rats. The two that made a good start were not much disturbed. The rats have disappeared, and the three Vines are now making a start.—W. M. N. E. [Fill up the rats' holes with soil, and give the border a thorough soaking with water. This will settle the soil round the roots and fill up the holes, when the Vines will probably grow all right. Those Grapes which have turned yellow had better be cut off, as they are useless.]

2311.—**Re-potting Ferns.**—When is the proper time for re-potting Ferns?—NANCY. [The present is a very good time, but a month ago would perhaps have been better.]

2312.—**Draining Pots.**—How should the pieces of pot for drainage be laid? and about how many pieces should be put in? Does it matter what size they are?—NANCY. [Lay one large piece hollow side downwards over the hole in the pot. The rest of the crocks should be broken up to about the size of a threepenny piece, smaller or larger, according to the size of the pot to be drained.]

2313.—**Wild Convolvulus.**—How can I destroy this?—EIRRAH. [Your only true way will be to keep the tops cut off with the hoe immediately they make their appearance. Indeed, if the ground is kept constantly hoed, their shoots will not have a chance of appearing above ground, and the roots will then in time die from want of that support which they can only obtain from leaves and shoots.]

2314.—**Topping French Beans.**—Do French Beans require to have their tops pinched out in the same way as recommended for Scarlet Runners?—A SUBSCRIBER. [It is not at all necessary; but to gain experience top one row and see the difference in the crop.]

2315.—**Asparagus and Lettuce.**—Our Asparagus bed is smothered with Lettuce plants, and we have scarcely any Asparagus. Do the plants interfere with the crop?—W. W. W [The Lettuce plants should have been cleared off before the Asparagus commenced to grow, but probably the bed is worn out.]

2316.—**Cuttings of Oak-leaved Geranium.**—I have a cutting of this plant which was taken last autumn. It has been in a hotbed all the winter, but has since been placed in a window with a westerly aspect. It keeps its green buds, but refuses to send forth shoots or leaves. How ought it be treated?—A BEGINNER. [Pinch off all flower-buds, and the plant will probably grow all right when it gets inured to its present quarters. The sudden change from the hotbed to the window would arrest its growth for a time.]

2317.—**Camellias Out-of-doors.**—In GARDENING of June 5 is an article on this subject; in what part of England, or in what country, is the garden he alludes to? —EASTBOURNE. [In Jersey.]

2318.—**Plants in Heated Frame.**—I have a frame which is heated with 3 ft. of horse manure: some people tell me that I should sink the pots down to the rim; others tell me that I should keep them about 2 in. or 3 in. from the top of the manure, to prevent the snails, etc., from eating the roots. Which is the best way to keep them?—M. P. [You do not say a word as to what plants you are going to put in your frame.]

Plant for Initials or Devices.—*W. D.*—One of the best white plants for the purpose is Cerastium tomentosum. It is best planted in autumn, and it is perfectly hardy.

Insects on Gooseberries.—*Mrs. R., Isleworth.*—The insect is probably that known as the Gooseberry caterpillar. See notes on the subject in recent numbers of GARDENING.

Woodlice in Mushroom-house.—*R. N.*—You may kill a great many by pouring boiling water round the walls at night; and many may be caught by placing slices of Carrot or Potato about the beds, and examining them every morning. A few toads kept in the house will also destroy a great many, and do no harm to the Mushrooms.

When to Water Plants.—*H. B.*—During winter and spring the best time to water plants is early in the morning, but during summer they should be watered in the afternoon.

Potting Auriculas.—*H. B.*—The present is a very good time to pot Auriculas. They should always be potted as soon as they have done blooming.

Remedy for Beetles.—*R. N.*—We are not aware that cats or dogs will eat the paste recommended some time since for killing beetles; but it is, of course, advisable to keep such animals from the spot where the poison is laid.

Rose-leaf.—*Subscriber, Hackney.*—It appears to have been frost-bitten, and afterwards scorched by the sun.

Vesuvius Pelargonium Sports.—*Ici.*—The sport you send was produced several years ago, and is now in commerce; also a white-flowered variety obtained in the same way.

Carnation not Blooming.—*Illawarra.*—Plant it out of-doors in good soil, and lift it in autumn and pot it and place it in a cold frame or window.

Plum Trees and Birds.—*C. E. B.*—You can put a net over the tree, but we do not think birds are likely to injure the crop. Wasps may, when the fruit gets ripe; and then muslin or gauze must be used if you wish to keep them off.

Cucumbers Turning Yellow.—*J. S.*—As soon as you see a fruit with a blossom on the end pinch out the point of the shoot on which it is borne, leaving one leaf past the fruit. You might also fertilise the blossoms, a process which you will find explained in GARDENING a few weeks ago.

Slugs, &c., in Fernery.—*Clifton.*—Petroleum will be neither effective nor safe for watering Ferns, &c., with a view to killing insects. Try the numerous receipts given in answer to queries in GARDENING during the past few weeks; or in Vol. I. you will find abundance of information on the subject.

Cyclamen Bulbs.—*S.*—The crowns of young Cyclamen bulbs when potted should be just seen above the soil.

Laburnum with Different Coloured Flowers.—*C. S.*—The Laburnum often "sports" in the manner you describe.

Procuring Bulbs.—*Clifton.*—The bulbs of Tulips, Anemones, &c., are best procured in September.

Taking Geranium Cuttings.—*Clifton.*—You may put these in any time from now to September. They will strike readily in sandy soil in the open border. Pot when rooted in well-drained pots of sandy soil.

Fuchsia Buds Falling Off.—*John Tib.*—This is sometimes due to dryness at the root, sometimes to over-watering, but generally from want of fresh air. Give plenty of air, shade slightly from the sun, and keep the soil in a moist condition, and all will be well.

Marechal Niel Rose.—*Tarragon.*—This can be procured at any good Rose nursery, such as Paul's, Turner's, &c.

Broccoli Plants.—*G. R.*—Let them stay where they are; what you have been told about their not "heading" till next spring is all nonsense.

Moving Roses, &c.—*Phillipa.*—The Roses will have done blooming by July, and will be starting again into growth. They may then be moved with a fair prospect of success if you do not keep them out of the ground too long, and do not injure the roots. After planting well water them, and apply a mulching of half rotten manure. Tulips, &c., may be taken up with safety, and kept or planted again at once. Cut down the Pansies at once, and they will throw up new growth, and may be moved by the time you name. Chrysanthemums, if not too large, will bear moving well.

Dandelion Salad.—*H. J. V.*—The question you ask has been answered several times lately.

Soil for Valisneria.—*Rev. L. A. B.*—This is an aquatic plant, and will grow without any soil if placed in the water. If you plant it in coarse sand or gravel at the bottom of a tank it will grow freely.

Hyacinth Bulbs.—*H. E. R.*—Plant them out in good soil under a wall or fence. They will be of no more use for pot culture, but if treated as advised, they may throw up a few flowers each year if left undisturbed.

Lobelia Seeds.—*H. E. R.*—If the seed has been washed up by careless watering you had better sprinkle a little dry silver sand or very fine mould over the seed, and then press it down with some flat surface.

Roses Failing.—*Rev. F. N.*—The Roses are covered with brown scale. All you can do is to brush it off now, and next spring prune back the trees, and paint them all over with seal oil.

Cauliflowers in London.—*W. W.*—We have never seen good Cauliflowers grown in London, but there is no reason why yours should not be planted and tried. Mix some soot with the soil, which must be deep and fairly rich. After planting, put a ring of lime around each plant to keep off slugs.

J. A. Gamble.—Kindly observe our rule, viz., ask your questions on separate pieces of paper, and write on one side only.

Coleus.—*H. B., Dulwich.*—See GARDENING, June 5.

A Sub.—We cannot say what the plant sent is, but it is certainly not a Begonia. Send samples to the seedsmen you bought the seed from.

Names of Plants.—*L. E. M.*—The Quamash-root (Camassia esculenta).——*W. R. T.*—Buddleia globosa, belonging to a genus of Scrophulariaceæ.——*W. Inglis.*—Coronilla Emerus.——*J. B.*—Cyrbonium falcatum.——*G. S. N.*—Saxifraga granulata.——*Canonbury.*—The Yellow Day Lily (Hemerocallis flava); a hardy bulb.——*P. A. D.*—Ferns: Lastrea dilatatum and Athyrium Filix fœmina. Flower: Trientalis europæa.——*M. M. C., Hereford.*—I, Narcissus incomparabilis fl.-pl.; 2, N. incomparabilis; 3, Leucojum pulchellum.——*Sep.*—A, Greater Stitchwort (Stellaria Holostea); B, Cerastium Biebersteini; C, Duke of Argyle's Tea Plant (Lycium barbarum.——*S. K.*—Weigelia rosea.

QUERIES.

[We have occasion to again remind our readers that all queries for insertion must be written separately on one side of the paper only, and must be accompanied by the name and address of the writer, with any *nom de plume* he may wish to use. Three questions only at a time can be inserted.]

2319.—**Vinegar Plant.**—I understand that this is a greenhouse plant, and will supply vinegar. Can any one tell me where I can get one, and how it is to be treated for this purpose?—A. B. C.

2320.—**Climbers for Greenhouse.**—I have a small unheated greenhouse, size 4 ft. by 3½ ft., and 7 ft. high, against a north wall, in which I want to grow some climbing plants. Can any reader inform me what will be the most suitable for my purpose requiring the least attention? Would a Vine succeed in such a position?—EAST LONDON.

2321.—**Pot-bound Plants.**—Can any one say why plants become pot-bound? I am told that it is because the limited soil of a pot soon becomes exhausted and the plant throws out fresh rootlets in search of nourishment. Is any means known of supplying plants in pots with sufficient nourishment to prevent this?—M. P.

2322.—**Raising White Thorns.**—Will some one tell me how to raise White Thorns from seed, and how the seedlings should be treated?—J. H.

2323.—**Flies in Rooms.**—An invalid relative is suffering from the number of flies which come into her room. We hear certain plants placed in the window will keep them out. Can any one tell me the names of these plants?—J. L.

2324.—**Summer Pruning Pyramid Fruit Trees.**—Will some one kindly fully explain how and when this is done? Should the leaders be left or shortened back? and should those shoots which are cut back now be further shortened at the winter pruning?—M. H. H.

2325.—**Roses Losing their Buds.**—I have wall Roses, Maréchal Niel (south-west aspect) and Gloire de Dijon (north-west). The buds fall and leaves curl up. No trace of pests except a little cobweb, which is at once removed. Watering with water and soft soap brings to the surface many worms. What remedy? My standard Perpetuals are healthy.—SALOPIAN.

2326.—**Plants for a Greenhouse.**—Can any reader inform me from practical experience the best way of heating a small greenhouse, 7 ft. by 5 ft. 8 in. by 10 ft. in height? Sun never very strong upon it even in summer. I wish to cultivate plants to be in full bloom at Christmas. Also kindly give me names of plants that will be best for the purpose.—TUNBRIDGE.

2327.—**Asparagus near the Sea.**—I have a large piece of ground with a southerly aspect sloping down to the sea. It is thus exposed to the full force of the sun, and also to that of the wind from quarters ranging from south-east to south-west. The soil is deep, the subsoil being old red sandstone, porous. Is it practicable, plenty of manure being at command, to grow Asparagus thereon? and will damage done to the foliage by strong wind produce decay, or, at all events, arrest the development of the roots?—W. B. W.

2328.—**Food for Roses.**—How is calcareous food best applied to out-of-door Roses in a locality where the soil is devoid of that necessity?—R. H. P.

2329.—**Book on Pig-keeping.**—Will any one recommend me a cheap book on pig-keeping—one which gives practical advice to one who is quite ignorant on the subject?—H. CHATE.

2330.—**Sulphur from Greenhouse Flue.**—I have a greenhouse, 30 ft. by 12 ft., heated with 9-in. glazed pipes, and have tried several remedies to stop the sulphur coming through the joints and cracks, but without success. Would any reader kindly inform me what to do without taking them out?—W. B.

2331.—**Failure of Rose Trees.**—I find that a great many of my Rose trees are not coming into leaf this year. They all flowered well last season, but the heavy rains caused a great many of the flowers to rot on the trees. I should be glad if any reader would give me information as to the cause of this, and if there is anything I can do to them. They are bush Roses, principally Cabbage, York and Lancaster, and common red kinds. They were not pruned this year.—NANCY.

2332.—**Club-footed Cabbages.**—I generally raise my own Cabbage plants, but for the last five or six years I was sadly annoyed by having about one half of them club-footed, which came to nothing; but this year, although sown on the very same plot of ground as last year, I have not yet seen one plant so diseased. What can be the reason? I sent to a respectable firm (as usual) for fresh seeds, but being pressed by kind neighbours to spare all, I made shift without sending for more by sowing some two or three year old seed I had in the house. Has the age of the seed anything to do with it?—Y. A.

2333.—**Bouvardias for Bedding.**—Can Bouvardias be grown as bedding-out plants pegged down over a small bed?—WATFORD.

2334.—**Pelargoniums for Show.**—Would any reader who has exhibited regal, single, zonal, and double Pelargoniums, tell me what time to allow between final stopping and show day, and say whether dark take longer than light ones in all classes?—MARIE LEMOINE.

2335.—**Transplanting Violets.**—I have some Czar Violet roots, and wish to make a new bed. I find quantities of runners, but scarcely any rooted. Is it as well to divide the old crowns?—WATFORD.

2336.—**Grubs in New Land.**—I am starting, as a novice, to garden, having this year acquired a good piece of land. The turf that was on the top has been dug in fairly deeply, and my crops are looking pretty well on the whole; but during the last few weeks I have noticed that almost all my seedlings have disappeared, and now my Lettuce, which was looking so well, is withering up. I examined the ground yesterday, and find that it is infested with large grubs, and that they eat off the roots close to the tops, which latter of necessity die. How can I get rid of them?—SEIRIOL.

2337.—**Plantains on Lawns.**—Can any one tell me of any means of destroying plantains on lawns? Arsenic, I am told, will do so, and vitriol, but the latter is not effectual.—C. C. O.

2338.—**Roses not Blooming.**—My Maréchal Niel and Cheshunt Hybrid Roses in a conservatory, south-east aspect, make plenty of wood and leaves, and look healthy, but they do not flower. They are three years old, and have been planted twenty-one months. What is the cause?—C. C. O.

2339.—**Rabbit-proof Plants.**—Will some one tel me the names of a few herbaceous plants, shrubs, &c., which are rabbit-proof?—E. D. T.

2340.—**Romneya Coulteri: Mentzelia ornata**—Will any one inform me how to successfully grow Romneya Coulteri? I cannot get more than about 1 ft. of growth in the season. It is planted out in good soil and in a south aspect. Also Mentzelia ornata, which I cannot get beyond a seedling by various treatments.—W. B.

2341.—**Chemical Manure.**—Can any of your readers kindly tell me how I can easily and without apparatus make a good strong, yet cheap, chemical manure for poor ground? Particulars as to quantity to mix, &c., would be acceptable.—H. MOULTON.

2342.—**Daisies on Lawns.**—About four years ago I converted an old-fashioned garden into a pleasure ground, and had it sown with Grass seeds, intending to make it like a carpet, with short Grass regularly mown. Soon after some Daisies appeared in the Grass, and more in the next year, and now the Daisies have entirely overrun my pleasure ground. What should I do to get rid of them?—E. G.

2343.—**Figs Rotting Off.**—I covered a Fig tree with glass last winter; it has thriven well up to the present, but the Figs invariably rot in the eye when they begin to ripen. I have not watered since the middle of April; I then gave the ground a thorough soaking with spring water. How should I treat it further?—GUERNSEY.

2344.—**Maggots on Holly Leaves.**—Can any one tell me how to destroy a small white maggot which enfolds itself in the tender young leaves of the Holly? Every Holly I have seen is always alike, and there is a always a maggot within every new shoot. It feeds on the new leaves, curls them up, sticks them together, and sadly interferes with the annual growth of this truly English evergreen shrub.—R., *Hampstead.*

2345.—**Pigeon Manure for Plants.**—Can any one tell me at what strength this may be used for plants?—C. E. B.

2346.—**Barked Apple Trees.**—Some of my young Apple trees are entirely barked a yard up the stem. What will be the consequence, and how can it be alleviated?—APPLE LOVER.

BEES.

Are Bees Profitable.—Last year I kept bees about five minutes' walk from King's Cross, and about one mile from the Regent's Park. They are undoubtedly profitable in the hands of an enthusiast—one who loves his bees and cares for them as he would for any pet; at least so I found them even last year, which was admittedly the worst for 40 years or more. Begin with a swarm in May or June in a bar-frame hive, and thoroughly read up the subject and grasp its principles from some good modern manual. But do not be misled by reports of enormous profits derived from bee-keeping put forth by some writers. Under exceptional circumstances, I have no doubt very large profits are obtained; but these favourable circumstances seldom fall to the lot of the tyro in any pursuit.—APIARIAN.

—— Bees can be and are kept, not only in the neighbourhood of London, but actually *in* London. At the show of the British Bee Keepers' Association at South Kensington last July was exhibited a super filled by bees kept in the Strand. Of course they were fed; but now the squares, the embankments, some churchyards, and other open spaces, are kept as gardens, bees would probably get their own living during the summer; and at the West End, where they had access to the Lime trees and the Clover in the parks, would perhaps store a little honey. Bees are kept in Lincoln's Inn Fields, in Camden Square, and in Newington Butts. A working cabinet-maker, living in Trafalgar Street, Walworth, told me when I met him at a bee show that he had that year taken 30 lb. of honey from his hive, and sold it to his mates at 1s. 6d. per

pound). I keep them here (Vauxhall); and a little further out—as Stoke Newington, Clapham, Brixton, &c.—many are kept. The Baroness Burdett Coutts, president of the British Bee-Keepers' Association, keeps bees at Highgate also. My personal experience is that bees in the immediate neighbourhood of London will, with a little assistance in early spring, get their living; and a few miles out, say a radius of four miles, more or less, from St. Paul's, would, in good years, bring in a little profit.—APIS.

A GARDEN HAMMOCK.

A HAMMOCK well "triced up" forms an excellent resting-place on board ship, more especially in a heavy gale, but it is vastly inferior to the hammock (hamaca) of South and Central America and the West Indies, which, in the opinion of those who have tried both, is a more perfect lounge than any sofa that has yet been made. These hammocks, whether made of palmetto fibre or of cotton—they are exported in large numbers from Manchester—should be fully 11 ft. from "clew to clew," and when spread out laterally should have a width of quite 6 ft. Two good-sized trees, about 10 ft. apart, should be chosen, from which to suspend the hammock; in each of these, at a height of 6 ft. from the ground, fix a stout screw-hook, having an iron thimble on it, round which the "lanyards" or ropes should be passed—this thimble preventing the rope being cut by the hook. Each end of the hammock is then suspended, and it is then lowered down until it is

A Garden Hammock.

some 16 in. from the ground. Spread it well out sidewise, place a pillow in it for your head, and the veritable hammock of tropical America is ready for occupation. It is usual to have it lowered to within 18 in. from the ground, as you are thus enabled with a touch of the foot to set it swinging when you please. Hooks should always be used, as they render it possible to bring everything within doors at a moment's notice. A. L. T.

POULTRY.

Green Food for Poultry.—I have always found great difficulty in getting a constant supply of green food, but now I grow Oats: they grow 3 in. or 4 in. high in a few days, can be grown on flannel in a kitchen in winter, and are juicy and greatly relished by the fowls. I take a handful and cut into ¼ in. pieces with a pair of scissors, the fowls tumbling over my feet in their eagerness to pick it up. Of course I offer this hint to keepers of fowls in town. Mine are in a paved stable yard. I have, including chickens, about 40, and my yard has a total area of about 200 square yards. Will some one say if this number when grown up will be too great for the space? They have, of course, plenty of amusement scratching on the dunghill and in the stables.—APIS.

Food for Poultry.—Can any reader inform me whether worms collected by throwing lime and water on the Grass, garden beds, &c., are suitable and harmless food for ducklings and other poultry?—L. N. B.

Disease in Fowls.—I have had several hens which gradually drooped and then died. When examined, they had scarcely any flesh on the breast. Could any reader inform me as to the cause, and if there is a cure? I feed them chiefly on Maize, and they have a run of six acres. I have had two hens die in the same manner as described by "Amateur," in GARDENING of May 29th.—G. N.

Featherless Fowls.—Propably the cause of "F. R. C's." hens losing their back and tail feathers is an awkward or too heavy cock, in which case he will often strip the backs of the hens of their feathers, and sometimes take skin and all off. The eggs are in no way affected.—BELLINI.

Fowls with Dark Combs.—The combs of fowls often turn a dark colour after laying for several months without ceasing, also from too close sitting. The cause is due to exhaustion. Feed the fowls well and give them animal food, worms, &c., and they will be all right.—BELLINI.

Young Ducklings.—I would be glad if any one could inform me what breed of ducks would be the best to raise for the market with a view to profit; also, if it is possible to purchase young broods in quantities, and if so, where?—I. T. B.

HOME PETS.

Canaries Unhealthy.—A couple of my canaries hatched out, but the young died at a fortnight old through being insufficiently fed. A few days before they died the cock was taken ill. I took him away and kept him in a cage by himself. He would sit in a heap close on the perch, feathers ruffled, tail and wings drooping, and appeared sleepy. Last Sunday I gave two drops of castor oil. On Monday a warm bath; in the evening repeated oil; Tuesday repeated bath; Friday put him back to the hen. He is rather livelier, but still looks very ruffled and mopish. After taking the cock away, the hen became unwell, the breathing very short and quick; the whole body works, and the tail jerks at every breath and the feathers ruffled. On Saturday I found she made a noise in breathing, like a small watch ticking. As they are both together I have put three drops of sweet nitre in their water the last two mornings. I have another couple, just building for the first time, but am afraid they will do no good. The hen sits with stomach resting on the perch, and very ruffled and the breathing short. The diet for all is Rape and Canary seed, with egg and bread. If anyone can give me any assistance I shall esteem it a great favour.—E. UNDERWOOD.

Breeding Canaries.—I have a few canaries, and some of them are continually making a noise with their bills. Also I have had one hen that sat well upon four eggs for a week, and then gave up sitting; and another that sat three days and gave up. Can some experienced breeder tell me the cure for such birds? The hens are both two years old.—S. TURNER.

Lice in Canaries.—Infuse Tobacco in hot water, and with this decoction thoroughly scrub the cage, wires, perches, seed troughs, and every part. Let it dry before putting back the birds. Repeat once or twice, and again, as prevention, at intervals of a few months, and you will never have an insect in your cage. It is unfailing.—F.

Peacocks.—Will any one give me information about Peacocks, as we are anxious to keep one? What kind of food would it require, and what kind of shelter at night? Would it be likely to peck the family and the dog, or could we make a pet of it? Would it injure the garden by scratching up the earth? Would it stray from the garden, which is a pretty large one, but not enclosed all round?—E. R.

Worms in Dogs.—Give as much Areca Nut powder as will lie on a shilling, made into a pill, with butter, at night, and the following morning a tablespoonful of castor oil. Carbolic acid is not a safe remedy for the skin disease. Try an ointment of petroleum made by Foulger & Co., 133, St. George Street, E.—C. B.

Starlings Talking.—Will any one inform me whether female starlings talk, as well as male?—A. REID.

THE HOUSEHOLD.

COOKING SPINACH.

THIS excellent vegetable forms a good accompaniment to meat when plainly boiled in plenty of water, with all the moisture carefully pressed out of it; it should then be chopped small, put into a clean saucepan with a slice of fresh butter, and stirred until it is well mixed and very hot; it should then be placed smoothly in a dish, marked in dice, and served.

Puree of Spinach.—Boil it until quite tender, chop it, and rub it through a sieve with great care; put it into a saucepan with a small lump of butter and pepper and salt; stir this mixture well, and serve it hot. A dish of mutton or veal cutlets, or fried pieces of chicken, may be arranged like a crown on a dish with this purée in the middle, or there may be poached eggs or little rissoles placed upon the purée. Any of these form a pretty luncheon or supper dish.

Mould of Spinach.—Boil the Spinach, and after it has been squeezed and chopped, stir it over a moderate fire until it is very dry; moisten it with as much thick rich gravy as will flavour it well, and turn it over and stew it fast until it is again dry; then press it into a hot mould of handsome form, turn it into a dish, and serve it quickly; 2 oz. or 3 oz. of fresh butter may be used as a substitute for gravy. A perforated tin shape is the best for moulding Spinach, but one of earthenware, slightly buttered, answers perfectly well.

Spinach a la Française.—When boiled and chopped, put the Spinach into a pan with a tablespoonful of pounded sugar, a little grated nutmeg, 6 oz. of fresh butter, and a tablespoonful of flour; when this mixture has been stirred over the fire for some time remove it, and add a tablespoonful of thick cream; dish it, decorating it with fried croutons — these are small pieces of bread, cut out with a pastry cutter, and delicately fried in butter. Leaves of light pastry (baked) may be used instead.

Stewed Endive.—Wash in plenty of water three good-sized heads of Endive, and simmer gently for ten minutes in one quart of water and one teaspoonful of salt; strain the water off thoroughly, add one teaspoonful of cream or milk, 1 oz. of butter, and a small pinch of Cayenne pepper; shake the saucepan about until the butter dissolves. Serve, place the Endive on to a very hot dish, and pour the sauce over.—J. BAKER.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 6s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s; Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 9d to 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 9d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 2d to 5d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Saveys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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THE GLOBE-FLOWERS.

FEW plants are more desirable for our gardens than those known by the name of Trollius, or Globe-flowers. All the species, though varying considerably in height, are of compact habit. With them such a thing as stakes, or other modes of support, need never be resorted to. They carry their own golden globes with an independence that constitutes by no means a small portion of their charm. They may be grown in beds, borders, on lawns, by the side of ponds or streams, and any one not possessing a garden may grow them well enough in deep pots; and grand they are, too, in early spring when in full bloom in the greenhouse or window. They must, of course, be grown out-of-doors till they show signs of flowering. Prior to giving an outline of the more distinct species of Trollius at present in cultivation, it will be as well to notice some of those characteristics which are common to all the species, and thus in some measure economise space and avoid unnecessary repetition. In the first place, they are all of a dense habit of growth, the foliage and flowers rising from an underground crown, which possesses no rambling proclivities—a failing which mars the value of many an otherwise good herba-

GROUP OF GLOBE-FLOWERS (TROLLIUS).

ceous plant. The roots are numerous and deep searching, especially in a border where perfect drainage removes the water-level to a considerable depth, a character which, though not absolutely essential in this case, should form an important feature in all well-made herbaceous borders. The flowers present considerable variation in colour, from a pale yellow to deep golden, almost bordering on vermilion. All the species are spring or summer bloomers, and are at their best in April, May, and June. Occasionally in old-established plants a few autumnal flowers are developed in September and October, but these depend alike on the season and the strength of the plant itself. As regards propagation, they may be most readily increased by division of the root, an operation which should be performed either in September or in March; of the two the former is the best time, as the plants have then an opportunity, during the remaining portion of the autumn, of making fresh roots and thoroughly repairing the damages unavoidable in the operation before the dry early summer sets in. When divided in March, a few dry days, accompanied by sunshine, is sure to find the foliage uncomfortably prostrate on the ground, and the blossoms are equally certain to be puny and short-lived. Besides root-division, they may also be propagated by seeds. These, in vigorous well-established plants are produced freely, and generally retain, with marked persistency, the specific characters. It is to be noted, however, that they rarely vegetate the same year that they are sown, but come up vigorously the following spring, and, if carefully attended to, will make fine flowering plants the second season after vegetating; they will not, however, attain their full development until the fourth year or even later. They grow freely in any soil, are partial to a good stiff loam overlying a cool moist subsoil, but, if cultivated in a dry situation, should have a good supply of manure, not only to act as a stimulant, but as mechanical and moisture-retaining element in the soil; for, be it remembered, that the mountain meadows they affect are almost invariably supplied with cool water springs below, which enable the plants to withstand the burning heat of an uninterrupted day's sunshine without showing, by their flaccid leaves, any indication of exhaustion. T. europæus (the Mountain Globe-flower) is the native species with which we are all familiar; its height is about 15 in.; the flowers are of a lemon-yellow colour, forming a perfectly globular flower from 1 in. to 2 in. in diameter. This plant is of common occurrence throughout the upland meadows of Europe, and by no means an especial native of Britain alone. T. asiaticus has much more divided leaves, also distinguished by their bronzy-green colour; the flowers are similar in size to those of the last species, but of a golden-yellow not globular, the sepals, as they reach maturity, expanding. When growing vigorously it attains a height of 18 in.; it flowers in the early part of May and rarely perfects its seeds, but is readily increased by root division. It is a native of Siberia. T. albus is considered by some as a mere variation of T. europæus; occasionally met with under the title of T. pumilus. The flowers are of a pale-lemon colour, but not white, as the specific name would indicate. They, however, are dwarf in stature as well as small in development. The plant—whether known by the "white" or "dwarf" titles, is especially fond of peat soil, more, perhaps, than any other species of the genus—is exceedingly compact and distinct in the arrangement of its leaves. These, like its blossoms, are scarcely half the size of the common European species. T. dauricus is distinguished from the foregoing by its gigantic growth, both in respect of plant development and bloom. Its leaves are large, much divided, of a deep olive green, and supported on long footstalks. The flowers are large, lemon-coloured, the sepals overlapping one another in a globose form. It is a native of Dahuria, and is a most desirable plant. It seeds freely, and may by this means be readily increased perfectly true to its type. In heavy soil, which appears to be admirably adapted to the requirements of the genus, it attains the height of 3 ft. or more, and is identical with the species known by the title of T. giganteus and T. Demayanus. T. napellifolius is a handsome strong-growing species; the flower globose, deep yellow, bordering upon orange, more than 2 in. in diameter. It is a native of Central Europe, where, on the slopes of the Carpathian Mountains, it forms a very conspicuous object; and in our herbaceous borders, it carries off the palm as unquestionably the most showy of the genus. T. sinensis is a very distinct plant; it is a native of Japan and China. The flower-stems attain a height of 2 ft. or 3 ft. The flowers are of a deep yellow, the sepals partially expanded. It blooms in month of July, and, in this respect, bears some affinity to the American variety of the Asiatic Globe-flower, to which it is in some degree related. Besides the foregoing, we have T. altaicus, T. caucasicus, T. intermedius, T. tauricus, and T. medius, all of which bear a very close relationship to either the European or Asiatic forms. So slight, indeed, is the difference, that in the species above enumerated, the ordinary cultivator will find all that is required, so far as the genus can supply, towards the decoration of the early summer borders; and with that selection he will not be disappointed.

A Carrot Basket.—A very pretty hanging basket can be made from 4 in. or 5 in. of the top or crown part of a large Carrot. The inner portion of this upper end of the Carrot is to be removed with a knife, leaving a shell about ½ in. thick. Three or four cords are fastened to the rim, and the basket is ready to hang up at a window. The cavity of the basket is to be kept well filled with water, and care taken that it does not become dry. After a while the Carrot will start into growth, and as the delicate, finely divided leaves appear, they will turn upward on all sides, and soon cover the little basket, with here and there the orange colour of the Carrot showing through with good effect. Should the leaves need training to arrange them satisfactorily around the basket, it may be easily done by means of a thread passed around them; or, a bent pin stuck into the Carrot may be used to hold a leaf in place.—*American Agriculturist.*

ROSES.

THE BEST ROSES FOR INDOOR CULTURE.

ROSES out-of-doors in June and July, all must admit, are unsurpassed in loveliness; but some of the best Teas and other varieties produced in spring under glass are equally beautiful. By "under glass" I mean when they are grown on the extension system—that is, trained against walls and up rafters, pillars, &c., when they produce blooms, not by the dozen, as when in pots, but by the hundred or thousand. We grow a good many pillar and wall Roses, and we have lately been cutting large quantities of fine buds and blooms from them. All Tea Roses succeed well under glass, but some bloom much freer than others. The best single Rose for clothing a pillar, wall, or any other extensive bare place under glass, is Gloire de Dijon; the blooms of this variety, although very pretty, are not so attractive, perhaps, as those of some others, but the length of time during which the plant remains in flower, and the succession of bloom which it gives in twelve months, is perfectly astonishing. As is now pretty well known, the blooms are very globular in shape, and a delicate fawn colour, shaded with salmon. This variety grows and blooms in any half-shaded position equally as well as any other variety will do in the best of situations. Maréchal Niel is another magnificent Rose under glass in spring, and if it only produced its flowers for an equal length of time in succession, as Gloire de Dijon, it would, in my opinion, be more valuable than all the other Roses in cultivation put together. When in bloom it is simply superb; but it does not remain in flower very long: our best plants produce from 400 to 700 blooms during April and a little while in May; then they are over for another nine or ten months. This is the only thing that can be said against this Rose, and that is not sufficient to deter any one from cultivating it; for if it only bloomed one week in the fifty-two, that would amply repay all the trouble that could be bestowed on it. The flowers, which are deep yellow, are very full in the centre, large when fully opened, exquisite in the bud state, and most deliciously fragrant.

Céline Forestier, a Rose strongly recommended by many, is with us useless under glass. It has grown freely enough, and has made abundance of healthy wood; but we get no flowers; nor have we seen it bloom well anywhere. So we place a black mark against it. Madame Falcot is a splendid Rose in the bud state. Like most other Tea Roses, it is very poor when fully open; but, leaving this objection out of the question, it is worth growing in quantity on account of the great value of its buds. They are deep orange, or I might say bronze-orange, in colour, and they are produced freely both on small and large plants. Niphetos is a favourite Tea Rose of ours under glass, as it blooms so freely, and produces its fine large creamy-white coloured buds and blossoms in such long succession. We would include it in the best half-dozen Roses which could be named for cultivating under glass. Devoniensis stands high in the list when the quality of the bloom only is taken into consideration; but, as regards number or free-blooming, as a rule it is simply "nowhere," and therefore it is not advisable to grow it, unless where space is unlimited. Cheshunt Hybrid is good, although not the best; but it is worth growing on account of its bright cherry-carmine colour. Belle Lyonaise is another fine climbing Rose, with beautiful canary-coloured flowers, deeply tinted with salmon. We find it better than Cheshunt Hybrid, inasmuch as it blooms freer and larger. Marie Van Houtte is also a magnificent Rose for indoor culture, and one which should be included in all good collections. Bouquet d'Or, Lamarque, and Solfaterre belong to the same Noisette section as Céline Forestier; but they all are much superior to the latter, and are well worthy of cultivation.

Roses under glass do best under much the same kind of treatment with regard to soil, &c., as that under which they succeed so well out-of-doors. Good loam, plenty of manure, and abundance of water at the root, consti-

tute their chief requirements. As to planting, that may be done at any time, provided the plants are in pots; otherwise spring is the best time to plant. A good bed or station should be made for them. The extent of rooting space is not of so much importance as having what is done done well. A good plant may be grown in a hole not more than 2 ft. square. Plenty of drainage should be placed at the bottom, and above that the soil should be rammed down firmly. In planting, the roots should be kept near the surface, and they should not be broken or much disturbed. Until growth has freely commenced water must be sparingly applied, but after that never stint the supply—a rule which should be closely adhered to, not only when the plants are in full growth, but also when they are at rest or growing little or none. This is one of the chief secrets of successful Rose culture under glass. Directions as to training must be left to those who have charge of the plants, as they know best what is wanted to be covered; but this much may be said—that the shoots should never be trained on the top of one another, and the greater the distance between them, reasonably speaking, the better they will succeed. The pruning of all Tea Roses should merely consist in thinning out the weakest of the shoots, and cutting in to keep the plant within bounds. Green fly is about the only insect to which Roses under glass are subject. It is particularly fond of attacking the points of the young shoots and bloom-buds, and should be cleared off them by close syringing before the blooms open; afterwards syringe them off as they appear, for the plants while in bloom cannot be syringed without injuring the flowers. C.

VEGETABLES.

Beans for Exhibition.—In gathering these care must be taken to have all the pods as nearly as possible the same length and age. They should be full grown, but young and brittle, choosing only straight handsome pods for the purpose. If enough cannot be got at one picking, some may be gathered two or three days previous to their being wanted, and if their stalks be inserted in shallow saucers of water and kept in a cool place, they will keep perfectly fresh and green. If required to be sent any distance previously to being exhibited, they may be kept fresh by packing them in tin boxes between layers of damp Moss, Spinach, or Ivy leaves. During summer, leaves of the Ice-plant answer well as a packing material.

Sticking Scarlet Runners.—Where procurable, common Pea-sticks are best adapted for Kidney Beans, but they require to be rather larger and stronger than for Peas; for unless firmly sticked, they are apt to suffer during rough windy weather. Where, however, such sticks are not obtainable, stout poles, 7 ft. or 8 ft. long, may be used, placing them firmly in the ground at intervals of 12 ft. or 14 ft. apart along each side of the row. Slender sticks cut the same length as the distance the poles are apart may then be tied lengthways along the poles 1 ft. or 1½ ft. apart; the plants will twine firmly round these, and thus support themselves.

Broccoli for Exhibition.—When Broccoli is required for exhibition, small plantations should be made in different situations, in order to make sure of having them in at the required time. For this purpose large compact heads are indispensable, though it is better to have them a little small and close than large and open. Trenches are sometimes dug for the plants, and it is a good system where time can be spared. The trenches should be dug 2 ft. wide and two spits deep; the top spit being taken out and laid on each side, then a good thick coat of fresh horse droppings, or rotten manure thrown in the trench, to be turned in and well incorporated with the second spit. The plants may then be put in, and as they grow the soil that was taken out of the trench may be put back round the stems of the plants and trodden in firmly. Good soakings of manure may be given them when the soil is dry, but after the heads are once formed it must be discontinued, or it will cause the flower to open. In cutting, the whitest and firmest heads should be selected, and the more they resemble each other in size and appearance the better; they should never be trimmed until they are going to be put on the exhibition table, and then not so severely as is often done. If it be necessary to cut the heads some time previous to their being wanted, the best way is to divide them with 5 in. or 6 in. of stem and stand them in shallow pans filled with cold water and put in a cool place. The leaves should be tied over the flower, and if an occasional sprinkling overhead be given them, it will help to keep them fresh. This will be found better than pulling up the roots and hanging them up in sheds and similar places.

Summer Lettuce.—Towards the end of June and through July sow Lettuce when possible on the north side of a wall, and thin the plants out according to the size of the kinds grown; 8 in. apart will be sufficient for Tom Thumb Cabbage Lettuce, whilst the larger kinds of Cos and Cabbage will require 10 in. or 1 ft. Sow in drills, as it gives facilities for frequently stirring the soil with the hoe. The thinnings may be planted elsewhere; but if the season be hot and dry, those not transplanted will probably be most satisfactory. When hot dry weather sets in, mulch with rotten manure, if possible, between the rows, laying it nearly up to the plants. A very great thickness will not be necessary; 2 in. or 3 in. at the most will be sufficient. This mulching saves a deal of labour in watering in a dry summer. In fact, without mulching, on some soils watering is worse than useless; it encourages, during the time the effect of the water remains, the production of fibres near the surface, and if the water be neglected for even a short time these fibres perish. Far better will it be on hot soils, if mulching cannot be resorted to, to deepen the soil in every possible way; keep the surface loose by frequent hoeing, and discard the waterpot altogether, unless a regular and constant supply can be given. But when the plants are mulched, a watering once a week or so washes the soluble portions of the manure down to the roots, and pushes on the plants rapidly.

Planting Broccoli.—Though June is the month in which most gardeners try to get their plantations of Broccoli finished, yet it is frequently July before the work is done. Plants put out in August will make nice heads, but the sooner the planting is done after the middle of June the better. Though planting early ensures the finest plants and largest heads, the time of sowing or planting does not materially affect the plants as regards the time they come into use. Though it is by no means an unusual thing to see nice little heads of Broccoli in cottagers' gardens where the soil is seldom turned over more than a spade's depth, and not over liberally manured, yet the plant likes a deep and rich soil. If practicable, the ground should be trenched two or three spades deep, or at least double-digged. When there is not time for doing either of these, then the ground must be dug over a spade deep only, taking care to break the soil up thoroughly, as deeply as a good spade will do it, and working in some well-decayed manure at the same time—the soil being broken up well in the trench, and the surface a little rough. Planting should be proceeded with as soon as the digging is finished. If the planting be done in June or July, from 2½ ft. to 3 ft. must be allowed between the plants; if deferred till August they need not be allowed so much room. If the weather be dry, the seed-bed or that from which the plants are taken should be watered well the night before, to soften the soil. The holes to receive the plants should always be made sufficiently large to admit of their being easily put in without breaking their roots. "Buttoned" and stunted plants are in many cases caused by bad planting. They are put in with broken and mutilated roots; and those that have a tap-root often have it bent double in getting it into the hole, and, instead of the point being at the bottom of the hole, it will be sticking up above the surface. No one should wait a very long time for wet weather in which to plant Broccoli: it is better to get the planting done, and water well once or twice, and the plants will then do till rain comes. When the plants are fairly established and have grown a little, they must be earthed up with the hoe, which will prevent the wind from twisting them about and disturbing their young roots.

Raising Mushrooms.—On looking over the "British Magazine" for 1760, I found the following quick method of raising Mushrooms, which may interest some of your readers. "Method to raise Champignons practised at Metz.—In a cellar, at a distance of 3 ft. or 4 ft. from the wall, raise a bed of horse, mule, or pigeon manure well mixed together. The bed must neither be flat nor raised in the middle, like the back of a trunk, but made sloping, and covered with ½ in. in depth of earth or mould. This bed, being watered from time to time, will produce Champignons for four years successively. The production of them will be hastened by watering the bed with warm water, and throwing into it the pickings of the same fruit. If you sow the grain that is found towards the foot of the Champignons among some cakes of what is called muckmould, the bed will produce the fruit on the third day after sowing; but the manure must be from horses fed with Corn. Muckmould is a kind of putrid horse manure, speckled with white spots and filaments. It may be made in any stable or shed exposed to the south by watering the mass from time to time with horse urine or warm water."—Hortus.

Mushrooms in Cocoa-fibre.—I wish to relate some experience I have earned in the growth of Mushrooms. Early in the spring I had a two-light frame made up with very light manure—in fact, it was little better than straw, there being almost next to no droppings amongst it. Under one light I had the manure covered with ordinary garden soil, and under the other it was covered with Cocoa-refuse to a depth of 5 in. or 6 in.; the frame was filled with pot plants, slightly plunged but not crowded. The whole was regularly watered and exposed to the sun and air. To my surprise, the Cocoa-refuse is one mass of Mushroom spawn, the Mushrooms coming up in clusters all over the bed in a way that astonishes all beholders; they are as pure a pink and white as you can imagine, and grow exactly like those gathered from an August pasture. The roots or fibres seem to revel in the refuse, and to extend some 3 in. or 4 in. in diameter in the refuse, but not deep down; in fact, the spawn seems confined to the refuse. Under the light where the soil is not one Mushroom is to be seen, nor is there a vestige of spawn. This is all unaccountable to me. Can any of your readers who are more learned in these matters than I am throw any light on the subject?—W. P. D.

An Asparagus Bed.—If any farmer were to read the directions given in the older works for making an Asparagus bed, he would at once conclude that Asparagus was a luxury not for him. A pit was to be dug, and oyster shells or brick-bats put in for a foundation; then numerous loads of manure were to be buried by trenching; and so much circumstance attended it that ordinary persons were frightened at the labour and expense. But of late years (says the *American Agriculturist*) our garden books do not copy English methods, and in nothing is the change for the better seen more distinctly than in Asparagus culture. Any one who can set out Tomatoes can plant an Asparagus bed. The first thing is to get the plants; good strong plants a year old may be had of most seedsmen. If one prefers it he can raise the plants, but those who buy them will gain a year. For family use the distance of planting varies. Where there is plenty of room, rows 3 ft. apart, with the plants 1 ft. distant in the row, is better than nearer. Choose good garden soil, and set the plants so that the crowns will be at least 4 in. below the general surface. At planting, give each root a spadeful of fine manure or compost, and trust to annual manurings to keep the plants in a productive condition, instead of the old method of manuring once for all future time. During the season keep the bed well cared for, the soil loose and free from weeds. As a general thing, the plants should grow two years before cutting.

Endive Running to Seed.—To avoid this at the present early season the seed should be always sown in a dung frame, grown rapidly, and planted out on the top of a heap of leaf-mould or dung. Even now Endive should be sown in a frame, the seed germinated as quickly as possible, and planted out as soon as ready on ground made moist with plenty of manure. Endive may be got up easily by simply sowing in heat, and pricking out and planting when

ready, as is done with early Celery. Thus treated, not 5 per cent. will run to seed.—C.

The Best Frame Potato.—I have tried a good many sorts of Potatoes for early crops under glass, but as yet have found nothing to equal the old Ashleaf Kidney. We have at present a long range of pits fit for lifting of a selected strain of the old true kind, and it is impossible to detect the slightest variation in a single plant.—J. G. L.

Late-sown Parsley.—Where large quantities of Parsley are required at this season, it is a good plan to make a late sowing—say between the middle and end of July. A large proportion of all biennials sown after midsummer fail to flower the following season, and in the case of Parsley it is a decided advantage to have a part of the crop in this condition, as it permits the supply to be kept up without cutting too closely the young spring-sown crop.—E. H.

Early Turnips.—For early Turnips I prefer Snowball and White Strap-leaf. When sown in succession they come in fine and tender all the season; and for late use a good breadth sown in August will keep up a supply during winter.—J. M.

GENTIANS.

THESE are considered supreme among Alpine flowers for their beautiful hues. Among the Rock Speedwells, the Gromwells, the Harebells, and many other families, we have numerous lovely blue and blue-purple flowers; but it is among the Gentians that we find blue flowers that startle us with the depth and brilliancy of their colour, and that sparkle in the early summer Grass as glowworms do in the dark wood. The Gentians are mostly mountain flowers, or of those open heaths, upland pastures, and wide-spreading bogs which in northern lands so often enjoy the fresh mountain air and its coolness. Occasionally they haunt the fringes of the stream, as in the case of the Bavarian Gentian, which is so exquisitely beautiful beside many thousand Alpine meadow-rills in Europe, and the nobler, if somewhat less vivid-coloured, Gentians which adorn the rocks and banks by the great North American rivers and streams. Usually they are dwarf in stature and compact in growth, but one very common species on the Alps, Gentiana lutea, may be classed with the most vigorous perennials. It, however, has not the charm of colour; but the lovely American fringed Gentians, while resembling our brightest European kinds in this respect, surpass them in size of blossoms, and spread forth into sturdy spreading bushes laden with fringed vase-shaped flowers. In a wild state Gentians do not by any means require peculiar conditions as to position or altitude. The same kinds frequently abound on high snow-clad ranges, hoary in much of their Gentian-haunted surface until far into the early summer, and hills not more frequently covered with snow than the uplands of Britain; generally, however, they love meadows and moisture rather than the rocks or sands, and they crowd most of all into those wide Alpine pastures where they have to struggle for standing room with sturdy little Primroses and silvery Cudweeds and large Violets that sometimes form an iridescent turf standing clear above their tiny leaves. In our gardens it is quite possible to enjoy the beauty of the Gentians without experiencing much trouble, though these plants are as yet but little grown. They may, from the point of view of culture in our gardens, be classed in two sections—the first, of strong easily-grown kinds, suitable for borders; and the second, of the dwarfer kinds, which should be grown on the rock gardens, or in borders or beds devoted to choice dwarf plants. The Asclepias Gentian, some of the American perennial kinds, and those with herbaceous shoots, generally grow freely in good moist soil in borders. So does the well-known Gentianella (Gentiana acaulis), which, however, being dwarf in habit and large and splendid in bloom, is used as an edging plant. It is well to form carpets of this in parts of the rock garden, planting in deep moist loam. The other type of Gentian, represented most familiarly by Gentiana verna, is by no means so difficult of cultivation as is commonly supposed. Want of moisture in the soil, want of free exposure to sun and air, and weak and imperfectly rooted plants are the main causes of failure. In the cool natural pastures and uplands, where the plant thrives in a wild state, it is rarely subjected to such drought as in a parched, cracked, and baked border. Deep, moist, sandy loam will suit it perfectly; if the

Gentiana acaulis.

surface be strewn with bits of broken stone, it is prevented from cracking and parching, as it often does when bare. Well-rooted plants should be secured to begin with. It is important that the plant be not overshadowed or overrun by tall or straggling border flowers. This is easily guarded against by associating with it plants

Gentiana cruciata.

somewhat resembling it in stature. These various conditions observed, the Vernal Gentian will soon spread into strong tufts and take care of itself from year to year, forming carpets on the rock garden and small beds or edgings on the level ground. The conditions it requires frequently occur in our gardens, particularly in elevated or sea-shore districts, and in these it

Gentiana asclepiadea.

may be grown as edgings to groups of dwarf shrubs, &c. It is quite easily grown in pots or pans of sandy loam plunged to the rim in the open air in a fully exposed spot in summer, and freely watered through the growing season.

Iris nudicaulis.—This has the vigour of the German Iris, which thrives so well on all soils in town and country, and the dwarfness of the old Crimean Iris. It is, however, much sturdier than this, and is second to no hardy plant introduced of late years. It is suited for the front ranks of the herbaceous border, and also well deserves a position among the more vigorous plants in the rock-garden, being so dwarf. It should be in every garden where early summer flowers are valued. I first saw it in the Paris gardens in 1867, and brought home some plants, which have since multiplied, so that the plant is now easily obtained.—W.

NOTES ON HARDY FLOWERS.

Aubrietias.—Some find these difficult to propagate; my practice is to pull off all the straggling side shoots now from the old plants, securing as much stem as possible, and breaking it off close to the main root; then a piece of ground is dug in a cool, shady border, into which is worked plenty of rough sand and leaf-mould; the shoots are then planted in lines, a little sandy soil being placed about the portion put into the ground, and all is trodden down firmly. The cuttings are then occasionally sprinkled and kept shaded from the sun, and thus managed, but few failures occur. One great advantage in getting the cuttings started now is that the plants become strong and dense by the end of the summer, and are well fitted for planting out. The best of the Aubrietias are Campbelli, Eyresi, græca, and the pretty variegated form of deltoidea; this requires careful treatment in the way of striking cuttings, which do best in pans of light sandy soil, kept moist and cool.

Dianthuses.—Among these there is the charming D. alpinus, dwarf in growth, and bearing large deep rose-coloured flowers. I find it does best in pots in a gritty sandy soil, and kept in a cool, shady place. D. barbatus, or the common Sweet William, is now blooming freely, and some of the improved forms are very beautiful. Sweet Williams generally are not sufficiently well cultivated, and the consequence is they fail to bloom so finely as they would do under better attention; I have seen some with flowers of great size and very handsomely marked. D. superbus, the flowers of which are deep pink and handsomely fringed, is a very valuable decorative plant, but sharing to some extent the prejudice which attaches to fringed flowers. It is now blooming with me in pots, and I am looking forward with some interest for the blooming of some seedlings. The showy annual Dianthuses, such as D. Heddewigi in particular, are beautiful both in borders and in a cut state. The latest selection is termed D. diadematus, the flowers of which are more or less handsomely marbled.

Foxgloves.—These look well as a background to mixed borders, associated with Larkspurs, Dahlias, Hollyhocks, and other tall-growing plants. I was looking over a bed of the improved varieties a few days ago, and very beautiful many of them are. Instead of only the ordinary purple and white kinds there can now be found flowers with rose, lilac, pink, and blush exteriors, the blossoms large and of fine form, and the throat or lip very handsomely spotted. It is in this rich, bold spotting that the beauty of the Foxglove so much consists. The small brown spots characteristic of our wild Foxgloves have been converted into large, rich, dark blotches and spottings, and when these markings are in combination with pure white tubes, the effect is strikingly beautiful. Foxgloves are now getting into full bloom, and in the case of extra strong plants there is first the massive centre or main spike, and then a number of side growths come forth later. Those who do not require to save seed should cut out the centre spike as soon as it gets shabby, and the side shoots will be considerably benefited thereby, especially if a good supply of water be given at the roots in dry weather. In the case of the best varieties a side shoot will supply an abundance of seed. If the seed be sown early in spring the plants will become strong for planting out in autumn, and will flower the following June. A good yellow Foxglove would be acceptable; but seedlings from D. grandiflora or D. lutea do not show any material improvement on the parental type.

Gladioli.—Gladioli, whether in masses or grown singly, require attention during hot, dry weather. In the case of a bed of fine seedlings the surface has just been gently stirred, and a mulching of 2 in. of good manure laid over it. The bed is well syringed every evening, and the falling water carries down to the roots much of the invigorating properties of the manure. Some of the shoots are coming up remarkably strong, and they are already being secured to stakes to

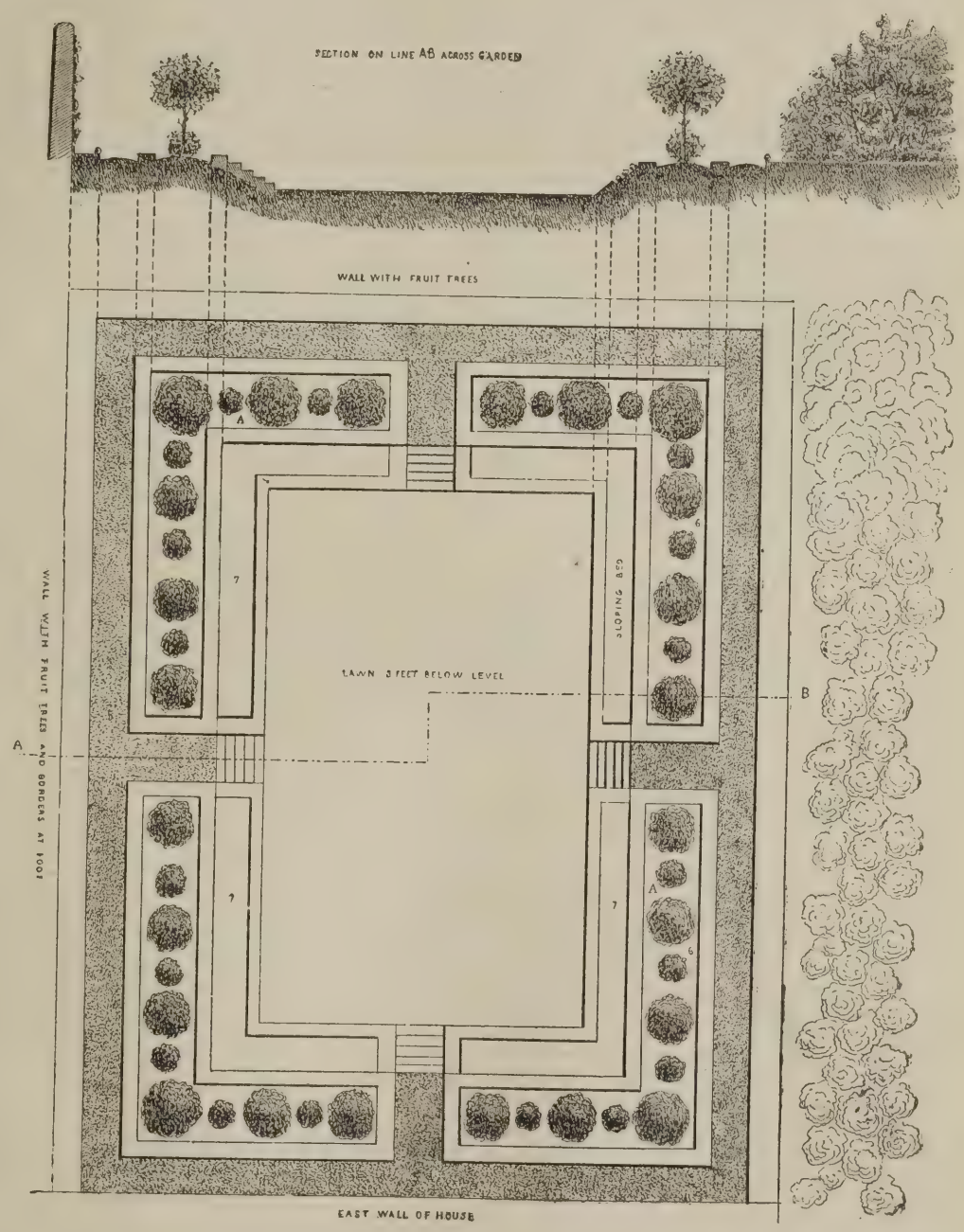
prevent them from being broken off by the wind. The following early-flowering species richly deserve a place in the mixed border, viz.—G. communis, the flowers of which vary somewhat, being occasionally white, blush, or pinkish-rose; G. cardinalis, red; and G. ramosus, rose, of which there are some very beautifully-coloured varieties.

Lathyrus.—Under this head we have the Everlasting Peas, among which L. grandiflorus is used largely for training on cottage walls, and it is already in full bloom in sheltered spots. It makes an excellent summer fence if planted against iron railings or anything of the kind that will afford it support; the flowers, which are of large size and handsome, are produced with great freedom; once planted, it will continue to grow up in spring and bloom in early summer for years. L. latifolius, the common Everlasting Pea, is so well known as scarcely to need mention, but it is, nevertheless, invaluable in gardens. L. Drummondi, the scarlet or carmine Sweet Pea, is much scarcer; it is extremely pretty, but requires to be somewhat in the shade, as the sun scorches its gay flowers and spoils their effect; like the others, it is propagated by seed and root division.

Mimuluses. — Mimuluses in pots should now be in a cool north house, as hot weather, when the plants are fully exposed to the sun, is very trying to them. By keeping them cool and shaded their beauty can be prolonged for a considerable time. Some seed sown now would yield plants that would bloom in August and September. Harrison's Musk deserves a word of praise. The habit of growth and character of the common Musk are maintained, but the flowers are spotted, large, and handsome. Musk is greatly helped by being potted from 2 in. to 3 in. deeper than usual, and then gradually filling up the pots with rich soil as the plants make growth; in this way fine examples of Musk can be had. I am treating the large kind in a similar way, and with good results.—D.

To Propagate Hardy Herbaceous Plants. — This may be readily accomplished either by division of the roots in autumn or spring; by cuttings put in on a shady border in summer; or, in some instances, by seeds sown in autumn or spring. Cuttings of the young shoots will root readily about June and July in a cool shady border. It is best to prepare a small bed by adding sand, road-scrapings, and leaf-mould, as the cuttings can be put in when convenient. Pansies, Pinks, Carnations, Phloxes, Penstemons, and all hardy plants can be propagated in such a bed. A few pliable sticks can be hooped over the cuttings, and a mat or some protecting covering placed over on bright, sunny days. The cuttings may be from 2 in. to 4 in. long, according to what kinds they consist of, and should be cut across just under a joint with a sharp knife; if the knife be not sharp, the tissues, instead of being smoothly cut, will be bruised, and so much damaged as to stop all circulation, and the cutting will probably damp off and decay instead of forming roots. Unless the leaves are large and flaccid, it is not advisable to remove more than the bottom pair, so as to give room to insert the cutting, for the leaves have a most important function to perform, and the more leaves a cutting carries, always provided they can be preserved from flagging, the sooner roots will be formed. Of course if a hand-light or a close frame be at hand to keep a close atmosphere round the cuttings, their rooting will be more expeditiously and certainly accomplished.

Dwarf Plants for Rhododendron Beds.—Numbers of beautiful dwarf plants may be grown with advantage in Rhododendron beds where peaty soil exists, as, for example, the Starflower (Trientalis), the white wood Lily (Trillium grandiflorum), variegated Partridge Berry (Mitchella repens), the Blood-root (Sanguinaria canadensis), the Podophyllum, the wood and the common Forget-me-nots, Rhexia virginica, Spigelia marylandica, Cypripedium spectabile and pubescens, Gaultheria procumbens, Linnæa borealis, Epigæa repens and Epimediums in variety, Acæna microphylla, Asperula odorata, Campanula hederacea, Cornus canadensis, Dryas octopetala, Erpetion reniforme, Hepatica angulosa and the varieties of the common species, Ionopsidium acaule, various Mimuluses, Nertera depressa, Nierembergia rivularis, Phlox reptans, Selaginella denticulata and helvetica, Smilacina bifolia, different kinds of Violas, and double Primroses in variety. For growing near the centres of large beds such plants as the Lilies, Gladioli, and Sparaxis pulcherrima are admirably suited.



Plan for a Spring Garden.

PLAN FOR A SPRING GARDEN.

THE accompanying plan is offered to the readers of GARDENING as a suggestion for bringing the whole beauty of the spring together in the flower garden as a prominent feature. When a suburban house is built in a rectangular plot of ground, set well back from the road, so as to have a good entrance court, there will be a space at least at one side of the house which is a little difficult to treat ornamentally. This space I suppose to be used as suggested. There are two fruit walls with continuous borders at the foot of them, in which wall fruit trees are grown,

and a shrubbery and plantation, screening the spring garden from the other pleasure grounds in summer when its beauty is over for the season. No. 5 is a continuous walk; No. 6, beds filled with standard Apple, Pear, Plum, and Cherry trees, with Currant and Gooseberry bushes or flowering shrubs between them; these beds are surrounded with Grass verges. No. 7 are beds on a slope with Grass verges. In the middle is a lawn sunk 3 ft. below the general level, and reached by flights of steps. The shrubbery should consist mainly of deciduous flowering trees and shrubs which flower early, such as Laburnum, Wistaria, Thorns, Almond, Double-flowering Cherry, Horse Chestnut, Daphnes, &c., &c., with an undergrowth of Wood Anemones, Scillas, and Hoteia japonica, and front lines on the north side of Christmas Roses, Winter Aconites, Hepaticas, Lily of the Valley, Columbines, &c. The borders 6 6 will afford sunny and partially-shaded positions for a selection of spring-flowering bulbs and annuals, but only those should be chosen which can either be lifted or will have entirely finished their growth by the time the fruit has to be gathered. The beds 7 7 will afford situations for a selection of the very choicest spring flowers—Auriculas, Polyanthuses, Primroses, hardy Primulas, Narcissi, Pansies, Anemones, Ranunculus, and Iris japonica. By the second week in June the gates of the spring garden should, metaphorically speaking, close for the season. J. D.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 21.—Potting Anne Boleyn Pinks; putting Cockscombs into their flowering pots; planting out some old Pink plants that have been forced; also Stocks, Asters, Perillas, Veitch's Autumn Giant Cauliflower, Snow's Broccoli, Savoys, and Scotch Kale; putting Lycopods in boxes for the conservatory; leaving abundance of air on Peach house in which the fruit is ripening; layering Strawberry runners and earthing up French Beans; sowing Snowball, Red Globe, and American Strap-leaf Turnips; planting out Capsicums in open spaces against south walls; potting on Balsams and Petunias; giving early exhibition Celery a little earthing; putting sticks to all flowering plants that require it.

June 22.—Sowing two rows each of the following sorts of Peas: Laxton's Omega, Ne Plus Ultra, and British Queen; planting out Borecole, Brussels Sprouts, and late Broccoli; putting in cuttings of choice sorts of Pelargoniums; giving all newly-planted bedding material a good watering, and pegging down any plants that require that attention; looking over Globe Artichokes, and cutting off all stems and heads not required for use; looking over Cucumbers and Melons and stopping the shoots; watering all newly-laid Strawberry runners; potting off young seedling Carnations; shifting large Coleus into larger pots; sowing Maclean's Wonderful Pea, Round Spinach, and Stone Snowball and the American Red Turnip; also French Beans and Lettuce; digging land in which to plant another crop of French Beans; nailing Apricot, Plum, and Peach trees out-of-doors.

June 23.—Planting out in the open air newly-struck Pink and Carnation cuttings; keeping floors of Vineries where fruit is swelling frequently watered; digging all vacant ground and hoeing between growing crops; tying in all leading shoots of espalier Pear and Apple trees; sowing Imperial and Heartwell Early Marrow Cabbage; also red and white Turnip Radishes; planting out Lettuces and Endive; cutting back Laurels encroaching on walks; pegging down and stopping Vegetable Marrows; thinning Turnips; putting strings round Peas that are forcing their way through the sticks.

June 24.—Sowing Giant White Cos, the Favourite, and All the Year Round Lettuces; planting out Celery and Cardoons; picking flowers off and tying out Fuchsias for exhibition; finish clipping all Box edgings; looking over all cordon-trained Apple trees, tying down leaders, and loosening any that require it; shifting Achimenes into their flowering pots; also dwarf Chrysanthemums; digging ground lately occupied by Lettuce for French Beans, adding plenty of well-rooted manure; syringing Ferns for thrips and green fly.

June 25.—Sowing Broad-leaved and Green Curled Endive; also Canadian Wonder Beans, Spinach, Mustard and Cress; stopping and nailing in Tomatoes; thinning out Parsley and Spinach; watering all newly-planted fruit trees; putting loose ties round all young Raspberry canes to protect them from the wind; pinching back the breast wood of Cherry, Pear, and Plum trees and nailing in the leading shoots; sowing some dwarf and Negro Long-pod French Beans; also various kinds of Endive; planting Broccoli amongst Potatoes; plunging Roses that do not require re-potting; thinning Salsafy, Scorzonera, and Turnips; potting old forced bulbs that have been well dried in hampers and storing them away; leaving a little air on Vinery all night where Grapes are changing colour.

June 26.—Potting Stocks, Heliotropes, and Carnations; thinning out Lettuces and Endive; also late-sown Carrots; nailing and tying in all Roses, creepers, and Ivy on walls and trellis work; placing sticks round Asparagus beds to protect the young growths from wind; watering all newly-planted Celery; putting large standard Heliotropes into their flowering pots; shifting scented Verbenas into 8-in. pots to grow on for cutting purposes; potting Arum Lilies, Gesneras, and Justicias; sowing Nonpareil Peas and main crop of Endive; pegging down Verbenas and Petunias in flower garden.

Glasshouses.

Plants under glass are now growing vigorously, therefore cold draughts must be avoided as much as possible; there must, however, be plenty of ventilation; abundance of water must also be given, and shade of some kind provided as a protection to plants in bloom, the beauty of which soon becomes impaired if exposed to sunshine. Give weak manure water to gross-feeding plants, and from specimens planted out in borders remove all superfluous shoots and suckers. Fuchsias trained to rafters require thinning, and Clematises tying to trellises. Do not allow deciduous climbers to intertwine with evergreen ones, as they apt to spoil the latter. Keep up a succession of Hydrangeas, zonal, show, and sweet-scented Pelargoniums, Fuchsias, Coleuses, Lobelias, Salvias, Cockscombs, Balsams, Schizanthuses, and similar plants, and transfer to frames or the greenhouse such plants as have done flowering. Heaths and some early-flowering hard-wooded plants may now be set out-of-doors on a bed of ashes. Old plants of Agapanthus umbellatus should have plenty of water and a sunny position. Cut in hard-wooded Veronicas that have done blooming, so as to encourage fresh growth. Pot off seedlings of Primula japonica and keep them out-of-doors, where they form stronger plants than if nursed under glass. Plants of Kalosanthes should now have some assistance in the way of stimulants, as should also Liliums that have formed their flower-buds, and some other soft-wooded plants. Erythrinas in pots should be grown in a cool and light house near the glass; they require plenty of water, and their main branches should have supports of some kind to keep them in proper position. Bouvardias that were cut back after flowering should now be making good wood; they must, therefore, be kept moist and warm for some time yet. Persian Cyclamens should be kept in cool and shady frames, or against north walls; they should receive a little water during the summer months: C. Coum and similar kinds should be kept moderately dry, but not too much so. Azaleas that have done blooming, and which have had their seed-pods picked off, should be re-potted, if necessary, and put into a warm pit, where heat, moisture, and shade can be given them. Camellias also make good growth under similar conditions, as do also Oranges of various kinds. Pinching in should be practised freely until the plants have attained the form it is desired they should assume.

Chrysanthemums.—The time of putting these plants into the pots they will bloom in will, as a matter of course, be regulated by the time at which they were struck. Such as are grown from cuttings put in about the close of the year, and which will produce a greater profusion of fully-developed flowers than the later struck ones, will, as already advised, be ere this in their blooming pots, and all the later propagated ones should at once have their last shift; for if kept confined in little pots too long the certain consequence is the loss of the lower leaves and a hardened condition of the shoots, both of which it is not possible afterwards to set to rights. Leaf-mould as a mixture with the soil is sometimes recommended for Chrysanthsmums, but when this is employed the plants have a greater disposition to make shoot growth than to flower freely. Good turfy loam, with a moderate addition of sifted rotten manure and sufficient sand will grow them well, potting firmly. As soon as they have got fairly hold of the soil stop the shoots as far as necessary, but not more, as this pinching is frequently carried much too far and resorted to too late, in which case it interferes with the blooming.

Auriculas.—The earliest potted plants are now making strong healthy growth, and afford a striking contrast to those not potted; the latter have also made growth, but the difference between the two is easily recognised, and the leaves are not nearly so richly coloured. A correspondent asks, "What am I to do with plants that have finished flowering?" The answer is, Pot them at once, and place them in a frame behind a north wall, or some similar position. Keep the frame close for a few days, but not quite close; tilt the lights at the back an inch or two. In potting remove nearly all the soil and examine the tap root; this is often in a state of decay, but whether it is so or not, it ought to be shortened. Let the soil be light and moderately rich; it should be composed of, say, four parts turfy loam, one of leaf-mould, one of rotten manure, and some sharp sand. The largest plants may be potted in 5-in. pots, and the smaller samples in 3-in. ones. Over-potting is a great evil.

Flower Garden.

As soon as fine weather sets in stir the surface soil of the beds, for the rains harden it to such an extent that if not moved it soon cracks, and growth is checked. A small hoe or hand fork can be used for this purpose, except in the case of carpet beds, which, being planted thickly, a hoe cannot be used; recourse must therefore be had to a sharp-pointed stick, with which a handy boy will stir up many beds in the course of a day. With an eye to effectiveness, let all ground work, edgings, and divisional lines be kept true to design by frequent and regular pinchings or peggings; if time thus to keep them in order cannot be afforded, no attempt at geometrical arrangements should ever be made; on the contrary, preference should be given to masses of colour arranged in lines or circles, broken at regular intervals by means of "dot" plants, in order to obviate the monotony of flat surfaces. All kinds of bedding plants will be the better for having their flower stems picked off till growth is established; at all events none should ever be allowed to seed, which Violas and Pansies are already doing, and if not picked over they will soon give up flowering. Calceolarias never fail to flower throughout the season if their flower stems be pinched off once after planting, and the same may be said of Lobelias, which we clip over with sheep shears. Tall bedding and sub-tropical plants will require support, which it is best to provide at once, ere injury accrues through storms of wind or rain. Small twiggy branches make excellent supports for all plants that do not exceed 2 ft. in height, such as Petunias, Perilla, and Calceolaria amplexicaulis; but all large-growing sub-tropical plants must have separate stakes proportionate to their height, and the same remark applies to Dahlias and Hollyhocks, the growth of which is more robust than usual. Standard Roses may also require renewal in the way of stakes lest their heads get overweighted and break off; keep them free from suckers, and in showery weather sprinkle the beds with soot or guano, as where neatness has to be studied surface mulchings of rotten manure—the best stimulant—are not always practicable. Keep dead and decaying flowers picked off, and as soon as any have done flowering, more particularly those of a straggling habit, shorten back the shoots in order to induce a second bloom. Complete the thinning and planting out of annuals; this has been a favourable season for such work, and if properly done a fine autumnal display may be expected—that is, if the plants be protected from slugs, which unfortunately are very numerous. As soon as planting is finished, there should be a general clearing up of walks, clipping and trimming of edgings, or any other operation that may conduce to neatness.

Peg down Petunias, Verbenas, old and leggy Pelargoniums, Tropæolums, &c., so as to render them as effective as possible. Bracken or small Beech pegs are excellent for this purpose. Have a stock of Lobelias in reserve to take the place of inferior kinds, which often appear where seedlings are used. Edgings of Cerastium should be gone over weekly, and all flowers cut off with a pair of shears; flowering shoots should likewise be picked off all plants of the variegated Jacob's Ladder, Golden Feverfew, and other plants grown only for the beauty of their leaves. A good supply of reserve plants for future stock should now be secured—for instance, Centaureas kept in pots during the summer time are better for propagating from than plants lifted out of the soil. See that the more common kinds of Carnations in beds and borders are kept clean; they are sometimes attacked by a maggot which eats into the centre bud. This, when perceived, must be destroyed, even if the bud has to be sacrificed.

Dahlias and Hollyhocks.—As Dahlias advance in growth see that they are kept regularily tied up. They should have three or four sticks to each plant, so as to keep them open and allow the sun and air to get to the centres. The

practice of tying these plants up to a single stick is bad and unsightly; it causes them to run up tall and affords little security against strong winds. To induce the plants to throw out strong side shoots pinch out the points of the leading growths. See that they are quite free from aphides, and if any are detected, syringe with Tobacco water. Hollyhocks must be well secured to stout sticks as they increase in size, for if they get blown over it spoils them. They do not require the sticks so long as those sometimes used, unless grown in very exposed places, in which they should not be planted. If the sticks are 4 ft. out of the ground, after being firmly driven down, they are high enough. Do not tie them so tightly as not to allow sufficient room for the stems to thicken. On the other hand, they must not be left so loose as to chafe with the wind against the supports.

Herbaceous Plants.—These being now in great beauty, a little extra care should be bestowed on them. Lift such Hyacinths, Tulips, and Crocuses as interfere with them, and spread them out to dry without removing any of the leaves. Cut over the decaying stems of Snake's-heads (Fritillarias) and similar early-flowering plants. Gather seeds of Squills as soon as they are ripe, and sow them at once. To plants that require support apply strong stakes, but Campanulas, Larkspurs, Pentstemons, Antirrhinums, Pyrethrums, and some others of a similar character look best when unsupported in that way. Transplant hardy Primulas kept in pots on to a shady border, where they should be kept clean and secure from slugs; P. japonica always grows better when planted out-of-doors than when grown in pots. A mulching of rotten manure, spent hops, Cocoa-nut fibre, or leaf-soil should be spread over the ground, and if its appearance on the surface is objectionable cover it with soil. Phloxes like plenty of nourishment, consequently a little manure water should now and then be given them. Everlasting Peas wintered in pots may now be planted out. Viola cornuta and other bedding Pansies should be kept well furnished with young shoots by occasionally cutting out the old ones, and the beauty of both English and fancy sorts will be greatly prolonged if they are grown in a moist and partially-shaded situation. Train Clematises in such a way as they will look best. Such herbaceous plants as have been wintered in frames may now be planted out, but in the case of plants intended still to be kept in pots, a shady position on a bed of ashes is best for them; and upon no condition should they become at any time perfectly dry. Remove decaying flowers, except in cases in which seeds are to be sown. Double Rockets which have bloomed should have their shoots layered, an operation which will soon induce the production of shoots in abundance, and these, when they have attained a length of 2 in. or 3 in., may be taken off and made into cuttings. Pyrethrums for late blooming, if cut down and allowed to grow afresh, will come into bloom during the later summer months. Hardy perennials generally which bear division may still be multiplied in that way, and where that is not applicable, cuttings should be inserted as soon as possible, in order to ensure their becoming well established before winter. Hardy annuals for late blooming should be sown in shady spots, to be transplanted hereafter to the positions in which they are to flower. Seeds of Brompton, Emperor, and Queen Stocks should also now be sown for flowering next spring. Continue to prick off perennials as soon as they are ready for removal. Plants in pots will require plenty of water at this season, and specimens of such plants as Phloxes, Pæonies, Pyrethrums, &c., will need attention in the way of staking and removing dead blooms. If not already done, lose no time in plunging the stock of plants in store pots in wood-ashes or sand.

Vegetables.

The cutting of Asparagus must now be stopped, and the beds will be much benefited by a good soaking of manure water; this, being a marine plant, enjoys salt, which, if it be added to the liquid at the rate of 2 oz. to a gallon, will materially assist Asparagus beds, especially such as have been long in bearing. Keep the beds quite free from weeds, which it is necessary in this case to remove by hand, as the use of the hoe would interfere with the plants. Beds that have been much cut should at the present time be encouraged by every means to make good growth, for on this depends their ability to keep up in years to come their producing powers, both as regards quantity and quality, in a satisfactory state. Asparagus often gets worn out much sooner than it otherwise would through suffering neglect after cutting has ceased. Advancing crops of Carrots should be again looked over to see that they are not left too thick, especially the main sowing. Turnips also will require attention in this respect; there are few crops suffer so much as this if allowed to stand too close together, as when in this state they run to leaf, forming bulbs that are not only small, but very poor in quality.

Thin the main crop of Beetroot before the plants get so large as to interfere with the growth. Some Colewort seed should now be sown; these will be useful for planting thickly late in the season after other crops are cleared off. In respect to this vegetable it is necessary that amateurs should make sure that they get the seed true, and not some small kind of Cabbage which is sometimes substituted for it, as the Colewort will turn in its leaves and make useful heads when planted later than any variety of Cabbage; it also may be planted under fruit trees when these are not grown too close. Of course they will not produce anything like the crop they will in an open situation; nevertheless, what they do yield is so much gain, and they help to keep down weeds.

Where dwarf French Beans are held in particular estimation a few more may at once be sown; these should occupy a south border, under the shelter of a wall, where, by a slight additional protection from September frosts, they will frequently go on bearing longer than those grown on more open situations. Autumn-planted Cabbages that have been cut and the stools left to produce a crop of Sprouts should, where the sand is at all poor or of a light nature, have a good soaking with manure water, by which, in addition to thinning out the shoots to some two or three to each stool, they will make small useful heads, that will come in through the autumn. Keep the hoe going on all favourable occasions amongst advancing crops of every kind.

Hardy Fruit.

Any trees that are fruiting freely, and which, on account of others being thin of fruit, must carry a heavy crop, should have assistance either in the way of manure water or a rich surface mulching, or an occasional sprinkling of guano. The application of such stimulants are doubly valuable when applied early in the season. As soon as the fruit has formed and is starting to swell is when they are most effective; after that period they are comparatively valueless—at all events as far as the present season's fruit is concerned. Pears and Plums on walls now need to have all the breastwood cut back to within two, or at most three, joints of the old wood; but previously select all new growths that are to be laid in as permanent branches, and tie, nail, or fasten them back temporarily with small sticks; then remove all the strongest-growing shoots from every part of the tree, and complete the operation at an interval of a week, thus avoiding the check that must necessarily ensue were all cut off at once. Finish thinning out any clusters of fruit requiring it, and let all wall trees be washed with clear water to dislodge the fallen blossoms and cobwebs. No time should be lost in keeping Strawberries off the soil by a thin layer of straw; this we never require to do, our practice being to give a thick mulching of fresh stable litter early in May, and this by the time the fruit needs protection is washed clean by the rains. All varieties have grown so vigorously that small twigs to support the clusters of fruit will be almost a necessity, and certainly of immense service against the ravages of slugs, which are numerous. Disbud, stop, and train in new growth on Vines in the open air where such is required, as in the case of indoor Vines; young canes produce the finest fruit, and provision should be made for the renewal of old ones, by occasionally training in new shoots to take their place at the winter pruning. The season will also be a short one for Figs, and the fruit will require all the aid that can be afforded in order to enable it to mature, such as exposure to full light and sunshine, by tying aside the leaves, and stopping all growths at the third or fourth joint, except those that are required to cover the wall. Such constant stopping not only represses growth and induces fruitfulness, but aids materially the swelling of the fruit. Loosen or untie altogether as may be requisite the ligatures of grafts; as a rule, it will be safe to dispense with ties altogether, and the only attention now requisite will be to keep the stock free from shoots and suckers; these latter should be persistently removed from all fruit trees.

House and Window Gardening.

Graceful Basket Plants.—Nierembergias are highly esteemed in London for furnishing small vases or window boxes, and deservedly so, for few plants are more graceful or better adapted for the purpose. N. gracilis, with small blue and white flowers and dwarf habit, and N. frutescens, possessing an upright habit, and bearing large white flowers with mauve-coloured eyes, are the chief kinds used, and it is satisfactory to find that by crossing these two kinds intermediate varieties have been raised which possess a better habit of growth than that of the parents, and by again crossing these with N. gracilis the result is good habit, large flowers, and fine blue, white, and mauve colours.

The Golden-edged Cocksfoot Grass.—This Grass is useful for many purposes, as from its perfect hardiness it may be grown

Golden-edged Cocksfoot Grass (Dactylis glomerata aurea).

as an edging in rows, or as isolated plants in open borders; and it is equally adapted for growing in suspended pots for the decoration of the greenhouse or conservatory, or in ordinary pots for edging or fringing plant stages. There are two variegated forms of this Grass—one with golden-striped leaves, the other with the variegation much whiter, and the stripes considerably broader.

Tuberous Begonias as Basket Plants. We find these Begonias to answer admirably when grown in hanging baskets; in fact, with us they both grow and bloom much more freely than when grown in pots. This is doubtless caused by the roots not being so much confined as in pots. The way in which we use them is as centre plants in the basket, employing some other plant to cover the outer surface. One basket planted in that way with a seedling variety very much like Vesuvius has seventy flowers now open, and the outer surface is covered with a dense mass of Harrison's Musk, which is also in full bloom. The pale yellow flowers of the Musk, and the scarlet blossoms of the Begonia produce a striking effect. We find it necessary to use baskets of a considerable size; ours are of a semi-circular shape, made of thin wire, and are about 11 in. in diameter at the top, and 10 in. in depth at the centre. The compost which we use is a mixture of equal parts loam, leaf soil, and fibrous peat.—H. J.

The Japan Primrose (Primula japonica).—For pot plants intended for windows, strong seedling plants, potted in September in a compost of turfy loam mixed with a liberal proportion of leaf-mould and rotten manure, are suitable. I use long narrow pots, 5 in. diameter at the top and 11 in. deep, such as are used for Hyacinths. It is a plant which requires a deep

pot, in order that its long thick, fleshy roots may grow downwards. It requires a great quantity of water, and should be supported with frequent doses of liquid manure. If grown out of doors, the flower-stems should be supported by small flower sticks, in order to protect them from injury from wind and rains.—H.

FRUIT.

SUMMER PRUNING FRUIT TREES.

IN the case of espaliers, or indeed any other trained or restricted fruit trees, summer pruning or pinching assumes very great importance, from the power and control it gives the cultivator over the trees. Should the bottom branches of the trees show any signs of weakness, leave them unpinched for a season or two, but pinch more closely and assiduously the stronger-growing parts, to divert the flow of sap into the weaker parts. By pinching the growing shoots of trees the flow of sap may be turned in any direction, in the same way that the flow of water can be regulated by a tap attached to a water-pipe. Pinching a shoot stops the flow, whilst leaving it unpinched encourages the flow in that direction. The question of summer pinching is deserving of very close study, not only in its application to fruit trees generally, but the best mode of treating each particular tree should be separately considered. There is too much variation in the strength of fruit trees to permit all to be treated exactly alike without in some cases causing derangement in the health of the trees; for whilst the strong grower must be repressed, it may be necessary to leave the weakly one untouched, and even by further means to encourage growth. Pinching, quite as much as root-pruning, enables the growing power to be repressed, and in a more natural and less hurtful way, because the check can be given gradually and at the right time. In most cases summer pruning is delayed too long, often till the young shoots are 1 ft. or more long and are getting firm at the base, and then perhaps they are cut back to three or four buds. But during the time of this rapid extension of wood the roots have felt the stimulating effect of so much foliage; and as in many cases cultivation is carried on almost up to the trunks of the trees, the roots have no chance but to strike downwards; and as this occurs year after year, the system of the tree gets out of order and refuses to bear fruit or blossoms, and of course when that condition is arrived at the only remedy is to lift, root-prune, and re-plant. But if the growth had been attended to earlier, a regular steady root action would have been carried on in proportion to the growth, for there is always a reciprocity of action between roots and branches, and when the latter are encouraged or allowed to extend themselves, the roots, to meet the heavy demand made upon them, must descend into the moist subsoil; and when that takes place, nothing but watery unripe wood will be produced till the tree is lifted out of the cold stratum, and its roots brought back nearer to the surface. In the meantime there is a season or two lost, and there is a possibility of the roots being trimmed in too much, and then the tree will require a year or two to recover its proper healthy and vigorous tone. In dealing with a well-balanced tree, the most reasonable way of proceeding would be to commence pinching when the longest shoots had grown 7 in. or 8 in., and shorten them back to five or six buds, going over them at intervals of three or four days until all were pinched or shortened back, making the time extend over three or four weeks. In this way no undue pressure would be placed on the roots, and the tree would be maintained in a healthy and vigorous state through both roots and branches; the sap that ran to waste in watery spray would be diverted into forming fruit-buds, and an early fruit-bearing habit formed that would tend still further to check any undue development of useless wood. When summer pinching is intelligently and well carried out, there is only in extreme cases any necessity to resort to root-pruning.

Figs Failing to Ripen.—As a rule, Figs do not succeed well in the north-western neighbourhood of London, as the soil is only clay, with perhaps 9 in. of good soil on the top. It may, therefore, be interesting to many of your readers if I inform them how I treated several of these trees successfully. I first took out the clay soil to a depth of 5 ft., and then put in 2 ft. of mortar rubbish—first, however, leading a drain to the bottom of the hole to carry off superfluous water. The hole was then filled with some loam, and a little mortar rubbish intermingled with it, in the proportion of about one barrowful of rubbish to a cubic yard of loam; and, after the soil had settled, the plants were put in. By careful training and summer pruning, the trees, which were old ones, bore very well the second year, and have since ripened good crops. I should add, perhaps, that the trees are in a close warm corner, facing due south, and that mats are thrown over them during winter.—W. J.

GLASSHOUSES AND FRAMES.

MANAGEMENT OF GESNERAS.

GESNERAS being for the most part tuberous-rooted plants, by judicious management can be had in bloom the whole year round. They are not difficult to cultivate; anyone having a Melon or Cucumber pit, or a stove house, which is better, and a Vinery or a warm greenhouse for summer quarters, can grow them well. They

Gesneria refulgens.

like partial shade and plenty of moisture when growing, both in the atmosphere and at the roots. A suitable soil may be made up of one-half turfy loam, the other half being peat, leaf-mould, and well-decomposed manure in equal parts; there should also be a liberal supply of silver and sharp river sand, and a good drainage of potsherds or pieces of charcoal. Gesneras should be grown for successional blooming, and as this can be done with a small collection, there should be a series of pottings of the roots. One tuber can be grown in a 5-in. pot, or three or four in an 8-in. pot. Some growers prefer single specimens, which speedily grow into good plants if properly managed, while others prefer large examples, when three or four tubers must be used. The tubers should be started into growth at intervals of from five to six weeks, beginning, say, with the middle of March, and continuing on to early in July, if space can be found for them. The soil should be filled up in the pots to within 1½ in. of the surface, so as to leave room for some top-dressing, and it should be gently pressed about the tubers. The pots should then be plunged in a gentle hotbed, if possible (but they will do without), in order to start the tubers into growth, and here they can remain till the shoots are about 4 in. in length, when they may be removed to a warm, dry, and light part of the stove near the glass. There must be no stint of water when required—in fact, Gesneras like plenty of moisture about the roots, so long as there is a free drainage, but they dislike the lodgment of water on their leaves, and therefore they should not be syringed overhead, as the leaves become much disfigured through water lodging on them. Each stalk should be tied to a stake, as the plants make a free growth, and require to be tied out so that the finely-marked leaves may be set off to the best advantage. After all, a single specimen in a pot is better than several of irregular growth; besides, a large pot containing small plants frequently has a confused appearance. There must be no neglect after the plants have done flowering. Indeed, to keep Gesneras in robust health, they must be well attended to after flowering, for then the bulbs for the following season have to be matured. In order to effect this, they must be carefully tended, giving them occasional waterings with weak liquid manure; but as the foliage begins to decay, less water will be required, and when the growth is finished, water must be entirely withheld. After this, though requiring to be kept dry, they must not be baked, but should be stored away in their pots in a cold dry place until again required. It is a common practice to shake the soil away from them when dry, and to store the bulbs in dry sand; but the best system is to leave them in their pots, and just start them into growth in the old soil before repotting, for by this treatment the bulbs are not so liable to injury, and the plants consequently flower much stronger. The following varieties are all well worth cultivating, viz.:—Barlowi, the leaves of which are bright green, covered with crimson hairs; the flowers are a delicate shade of salmon, slightly spotted on the throat. Chromatella, a kind with dark velvety leaves and elegant erect spikes of drooping rich yellow flowers. Cinnabarina, a variety with green leaves, and brightened with flame-coloured hairs; the flowers bright and cinnabarred, with a pale throat. Doncklaari, a kind with large darkly-tinted leaves and bright vermilion flowers. Exoniensis, a sort with large rich, dark velvety leaves, covered with minute red hairs; the flowers deep orange-scarlet, with yellow throat. Lindleyana, a sort with rich deep velvety green and red leaves; flowers rosy-pink and yellow, freckled with red. Nigrescens, a variety with large dark velvety leaves; dark red flowers, the throat light orange spotted. Zebrina splendidissima, a kind with leaves handsomely marbled with dark bright orange-scarlet flowers. And the one depicted in our engraving, G. refulgens—a handsome kind, both in foliage and flowers.

A FEW ORCHIDS FOR GENERAL CULTURE.

EVERYONE has not facilities for growing Orchids as a collection, and some are deterred from attempting their culture by the idea that they are very difficult to grow. To a certain extent this is true. Most species require special treatment and a good deal more attention than can be afforded in gardens where the labour is limited; but there are a few Orchids, nevertheless, about the culture of which there is nothing very difficult, and which might be advantageously included in any ordinary collection of warm greenhouse plants. Some of these are old and some new, but we will only mention a few that are good growers, free flowerers, and worth cultivating. The first on the list is the old Phajus grandifolius, otherwise known as Bletia Tankervilliæ, and which is a free-growing and vigorous subject, and very ornamental when it throws its magnificent spikes of flower in the spring. It succeeds well in the ordinary stove, and needs but little attention. When the plants need re-potting, the operation should be performed after they have done flowering, and just when they begin to grow. It delights in good strong turfy loam and peat, or leaf-mould, together with sand and plenty of lumpy charcoal and good drainage; in other respects it may be treated like any ordinary stove plant—neither kept too wet nor too dry either in summer or winter; and during the growing season it should have occasional waterings of liquid manure.

Calanthe vestita.—This, though belonging to a different class, is not unlike the first named in miniature, and requires similar treatment. It is a very pretty Orchid, and popular even among Orchid growers. Healthy bulbs, potted two or three together in 6-in. and 7-in.

pots, make nice little specimens. Light turfy loam and peat, with charcoal, form a good compost for it. The bulbs should not be buried in potting, but placed pretty firmly in the soil, and room left for watering. The finest lot of plants of this kind that we have seen were firmly potted in what appeared to be almost pure loam, pressed as firmly about the roots as we would a Strawberry plant. In summer the plants require moderate shade from strong sunshine; and in winter water should be sparingly given, but not entirely withheld.

Cœlogyne cristata.—This is one of the best Orchids for general culture; in fact, it should be grown in batches like the Chinese Primrose or the Cyclamen—and no doubt would be, if it was as easily procured. It grows freely in the stove or intermediate house, and produces its lovely white flowers in great profusion. It may be grown in a basket or pot, or on a block; but the pot is most convenient. Good drainage, fibry peat, Sphagnum, and lump charcoal are essentials; and these should be raised in a firm mound above the rim of the pot, and the plant pegged down upon it. Small plants will make good specimens in a short time, being easily divided, and small plants may be soon propagated when it is desirable to increase the stock.

Dendrobium nobile and its Varieties.—These still rank amongst our finest Orchids, whether regarded for the beauty of their flowers or the profusion in which they are produced. They are very easy to cultivate, and succeed best in fibry peat and loam, Sphagnum, and charcoal, packed pretty firmly together about the roots, and raised in a mound above the rim of the pot in the usual way. Plenty of drainage is necessary. Spring is the time to re-pot, after the plants are out of flower. As a rule, the strongest shoots spring from the base of the old stems; but sometimes they break away from the tops also and elsewhere. The best plan in any case is to peg all growths down to the soil, and encourage them to root into it. An ordinary stove treatment and plenty of water during the summer will easily produce a fine growth by October, when water should be almost withheld; and, unless the plants are wanted in flower early they may be transferred to a cooler house during the season of rest, but not starved or exposed to cold and damp. A friend of ours, who grows large specimens for the room vases, transfers them to his cool Vineries in autumn. In potting, as we should have mentioned, care must be taken to avoid burying the base of the stems; leave all but the roots clear and above the surface of the soil.

Dendrobium Farmeri and densiflorum are two fine species that succeed in the stove or intermediate house, and which, according to our experience, continue to grow and flower under very adverse circumstances. We have known plants that had remained in the same pots for years, and been long subjected to a low temperature during the winter and spring, that hardly ever fail to flower annually. They, however, repay genuine culture, and require the same treatment as D. nobile, except that they are better left in their summer quarters during the winter. None of the three are troubled much with insects or disease.

Odontoglossum cirrhosum. — This comparatively new species is described as one of the most lovely Orchids we possess, and we think it deserves the compliment; but what gives it most value is that it is a free grower, and prefers an intermediate house, or even a warm greenhouse, to the stove. It would perhaps be better wintered—at least in the last-named structure—after its bulbs are perfected, otherwise they seem inclined to make a second growth if left in heat. Its free growth is remarkable. Living Sphagnum chiefly and bits of peat mixed seem to be all that it requires in the way of compost. The plant delights in plenty of moisture at the root during summer, and should not be dried off altogether in winter, but the soil should be kept sufficiently moist to keep the Sphagnum alive. The leaves are not nearly so sensitive to damp as O. vexillarium. It is, in short, an uncommonly hardy intermediate-house plant, of easy culture, and should be in every collection of flowering plants.

Cypripedium insigne, insigne Maulei, barbatum, venustum, and niveum.—All these except the last are robust-growing kinds, easily kept in health; and their flowers, which are abundantly produced, are very ornamental and useful for cutting. The old insigne is an exceedingly free grower and flowerer, and Maulei is a very superior variety of it. They all grow freely in fibry loam, peat, sand, and charcoal, and should be potted tolerably firm, and well watered while they are growing. To attempt growing them in the usual Orchid compost, consisting of Sphagnum and poor peat, is simply to half-starve them. The pretty little C. niveum is a slow rather than a weak grower, and requires the same treatment as the others. Those named are perhaps as cheap and as easily procurable as any; but there are a number of excellent varieties, both new and old, which are equally good growers. Among some of the fine kinds may be named—Dayanum, Argus, Domini, Sedeni, Fairieanum, lævigatum, Roezli, Pearci, Lowi, and villosum.

Zygopetalum Mackayi and crinitum.—Both of these are free-growing plants and sure bloomers, and succeed in fibry loam, peat, Sphagnum, and charcoal. The pots should be well drained, and in potting the plants must be set pretty well up above the rim of the pot, and the compost packed neatly and firmly up to the base of the bulbs to keep them erect. Stove heat and plenty of water at the root during the growing season will suit them, but moisture must be nearly withheld during the winter.

Miltonia spectabilis and its Varieties.—M. spectabilis is a beautiful and popular plant, of easy culture. It succeeds in the same compost as the above, but without the loam, and is best grown in a shallow pan. It does not require a very high temperature, and should be shaded from strong sunshine, which turns the foliage yellow. We have seen a good specimen growing in a Vinery under the Vines, where it stood for some time after the fire heat was withdrawn, and was as green as Grass, and healthy, and flowered well.

Lycaste Skinneri.—This is another of those popular Orchids which is recommended for general culture. There are numerous varieties of it, all of which are more or less attractive. It requires ordinary stove treatment, and a compost of Sphagnum, peat, and charcoal to grow in, and good drainage. It should be grown extensively.

Cool Orchids (Odontoglossum).

Lælia purpurata.—A magnificent Orchid, and one not very difficult to grow; it thrives in the same kind of compost as the Lycaste, and requires much the same treatment in other respects.

Here ends our list. No doubt it might be added to; but we have chosen to enumerate only a few of the easiest cultivated and really useful species, and such as might be added to any mixed collection of stove or intermediate-house plants. When anything like a collection is attempted, and a house cannot be set apart for them, the best plan is to devote a shelf of the stove to them alone, in order that their wants may be more conveniently attended to, putting such as require most heat at the warmest end, and *vice versâ*. As regards moisture and shading,

&c., what will suit the generality of stove plants will suit the Orchids; but, as far as practicable, the latter should have the special treatment they require as regards watering and potting. S.

ANSWERS TO QUERIES.

2300.—**Insects on Plants.**—When plants become much infested wiih red spider, the foliage should be well sponged. This pest only appears when the atmosphere is very dry, and may easily be hindered from establishing itself if sufficient moisture is created in the structure either by means of damping down the paths and stages or frequently syringing the plants. The red spider makes its home on the under surface of the leaves; it is therefore advisable to occasionally thoroughly moisten every portion of the foliage. One or two good washings weekly will do more to dislodge the enemy than two or three daily sprinklings. The great point is to keep this plant foe at a distance by maintaining those atmospherical conditions which are inimical to its welfare. It may be safely asserted that where red spider has been allowed to spread, but little pains has been taken to ensure the conditions necessary to the welfare of the plants. In a healthy genial growing atmosphere red spider cannot live. Scale is often the result of indifferent culture—a starved, unhealthy specimen being more liable to be infested with it than vigorous-growing plants. At the same time, there are certain plants peculiarly susceptible to its attacks. Its appearance must be watched for, clearing each insect off before it has time to breed. When a plant has become much infested, only time and patience will clear it.—J. C.

2301.—**Propagating Gloxinias.**—The best time to propagate is as soon as the flowers fade. Take off healthy leaves, cutting them off with a sharp knife at the joint where the leafy portion terminates; reduce their proportions by cutting away about a third of their length, and insert them in fibrous peat or Cocoa-nut fibre round the edge of a 4-in. pot; keep them in a close house, maintaining the soil in a moist condition, avoiding heavy waterings; by the end of the season little bulbs will have formed at the base of the leaves. Gloxinias may also be propagated from seed to be sown in early spring in a warm house; the soil should consist of well-sanded peat, should be pressed down firm, and watered, the seed sown thinly thereon, and very slightly covered; cover the pan with a pane of glass until the young plants appear.—J. C. B.

2287.—**Autumn and Winter Flower-beds.**—The list of plants flowering during the late autumn and winter months is not a very extensive one. There is the large and varied family of Chrysanthemums, which flower until the advent of severe weather. There is Lobelia fulgens, with beautiful scarlet flowers; and the extremely effective Anemone japonica and its white variety. A good arrangement for an autumn bed would consist of Chrysanthemums in the centre, around them a row of Lobelias, then Anemones, mixing the colours, next to them Christmas Roses, finishing off with a neat edging of Cerastium tomentosum.—J. C. B.

2236.—**Acacia and Pampas Grass.**—As soon as the Acacias are large enough to handle, pot them off singly into small pots in a compost of half leaf-mould and half loam, adding thereto a good portion of silver sand. Place them in a frame or greenhouse where they may be kept rather close for a time until fairly established. If the pots get filled with roots, in the course of three or four weeks the plants may be shifted into the next-sized pot; otherwise it will be better to defer re-potting until next March, when they may be placed in 2½-in. pots. During the summer months keep them under cover, sprinkling in hot weather, and shading from hot sun. During September expose to the full air both night and day, merely sheltering from heavy rains; and towards the latter end of the month place them in a cool greenhouse, ventilating freely in favourable weather, but avoiding cold draughts. The Pampas Grass, when large enough, should be pricked out in the open air in a nice mellow piece of soil. Plant them about 9 in. apart, keep them clean during the summer, and water in hot weather. If well attended to, they will make nice little plants by the autumn, and may then be planted in any desired situation. It would, however, be preferable to allow them to remain in the nursery bed until spring, as there it will be an easy matter to protect them—a necessary precaution in the case of such young plants. April and May are good months for transplanting; if moved before growth commences the roots are apt to perish.—J. C.

2295.—**Lily of the Valley not Flowering.**—To obtain good flowering roots of Lily of the Valley the soil intended for their reception should be well stirred, richly manured. and if of a heavy nature, should in addition receive a dressing of leaf-mould, wood ashes, or some such light material. The Lily of the Valley revels in a free porous soil; at the same time where the natural staple is of very sandy or parching description it will be much benefited by the addition of a portion of good loam. The ground intended for planting should be deeply dug anywhere during September, laying it up roughly for a week to sweeten. It should then be gone over again with a steel fork, working in the manure and any other material which it may be considered advisable to apply, and breaking all the lumps. By the middle of October the roots may be planted in lines, some 18 in. apart, allowing 6 in. from plant to plant. Choose a dry time for planting, and tread each sort in firmly. In dividing the roots keep the strongest crowns by themselves, as if planted together, less difficulty will be experienced should it be desired to select any for pot culture. The following March, hoe well between the rows, and mulch with some manure, Grass, or litter of some kind. Keep the plantation free from weeds during the growing season, and water copiously in hot weather. This treatment cannot fail to produce abundance of flowers of excellent quality.—J. C., *Byfleet.*

2251.—**Plants for Sunless Windows.**—Ferns, Mosses, and other foliage plants will grow in the north window, or, to come to details, try the following:—Ferns—Asplenium marinum, Lastrea filix mas cristata, Polystichum angulare cristatum, Scolopendrium vulgare multifidum, Adiantum pedatum, Cyrtomium falcatum. Moss—Lycopodium denticulatum. Grass—Isolepis gracilis. Foliage plants—Cyperus alternifolius, Dracæna indivisa, Farfugium grande, Ficus elastica, Grevillea robusta, Coprosma Baueri, Abutilon Thompsoni. Many of the dwarfer forms of Cacti will do, if kept dry and moved into the sunshine a month or two to ripen their growth. All the Mimulus family will flower in the north, including Harrison's Musk.—E. H.

2247.—**Rose Trees not Growing.**—It is not good practice to cut back and repot at the same time. The check has probably been too severe, as just at the time leaves are required to stimulate the roots into activity they are absent. Either repot and get the roots into action before pruning, or else prune first and get up a new growth before re-potting. The result in either case would have been better, but this advice is like locking the stable door after the steed has been stolen. The plant will probably recover sooner if placed in the open air, and not watered too much—just merely keeping the soil moist till it is again growing vigorously.—E.

2269.—**Pruning Fruit Trees and Shrubs.**—The best time to prune pyramid fruit trees is from Midsummer to the first of September, commencing at the former date to stop robust growths to four leaves, and thin out others where too thick; and finish off at the latter date by pruning away all useless surplus wood, instead of leaving it to be done in winter. In pruning there is, or should be, a happy mean between leaving trees to run wild and pruning so close as to cripple them; and this can only be arrived at by studying each tree and treating each case on its merits separately. All evergreen shrubs should be pruned in spring, just as the sap is rising; but the use of the knife should not be abused. Simply stopping runaway shoots is in most cases all that is required. Where things have run wild, cutting down may sometimes be necessary.

2254.—**Plants for Window Boxes.**—I think I should use Harrison's Musk instead of the Golden Feather. The boxes need not all be planted alike, but Musk and Ivy-leaved Geraniums planted alternately along the front would have a pretty effect hanging over the blue boxes. Stocks, scarlet, white, and Pink Geraniums, with a few foliage-plants, such as Abutilon Thompsoni and the variegated Cocks'-foot Grass Dactylis elegantissima, would look well mixed with the flowering plants. The dwarf growing Tropæolums, with Nierembergia gracilis to hang over, will form a pretty combination. Some of the largest leaves should be picked off the Tropæolums to show the flowers to better advantage, as well as permit the Nierembergia to show itself—H.

2273.—**Shrubs for Cold Locality.**—The following list of shrubs will probably suit "H. P.": Forsythia viridissima; Hypericum calycinum, H. floribundum; Cerasus Padu's in the background; Lilacs, white and purple; Ribes sanguinea; Syringa; Daphne Mezereum; Venetian Sumach; Pyrus japonica; Spiræa ariæfolia, S. callosa; Laburnums; Thorn, Paul's Double Scarlet; Brooms, white and yellow; Honeysuckles; Deutzia gracilis, D. scabra; Cytisus elongatus; Berberis purpurea, B. aquifolium, B. stenophylla; Pernettya mucronata; Althea frutex; and Japanese Privet.—E.

2272.—**Gooseberry Trees with Rank Growth.**—Thin out the rank shoots now on the Gooseberry and Currant bushes to let in the sunlight and air to ripen the wood; and at the autumn or winter pruning thin out the growths a little more if necessary, but do not shorten those shoots which are left, and there will be an abundance of fruit. It is a great mistake to prune Gooseberries too hard on strong soils; their time and strength is frittered away in useless wood production when such is the case.—E. H.

2306.—**Ivy as a Border Plant.**—The broad-leaved Ivy should succeed if properly planted. The chief reason why it is not so much employed for edging as the small kind is that on account of its naturally rank growth; it does not form so neat a bordering. Stir the soil deeply, and if very poor or sandy add to it a little rotten manure. Plant any time now and water freely in hot weather. For this purpose we should prefer free young plants that had not been grown in pots. Strong shoots taken off now and laid in closely in a shady place would become well rooted by the autumn months. In planting bury the stem quite 9 in. in the soil; a large amount of fibres will then be produced with the effect of inducing a vigorous growth the first year. Plant thickly and peg each shoot down as it increases in length. In this manner a good thick edging will be formed by the second season.—C.

2250.—**Asparagus Beds.**—It need not cost anything extra if the land has hitherto been well cultivated. Somehow the idea seems to have taken possession of most people's minds that Asparagus is an expensive plant to grow. To trench the land up as deep as it will bear, at the same time well manuring it, is good practice, not only for Asparagus, but for all vegetables; and that is all that this plant needs. Plant in rows 3 ft. apart and 18 in. from plant to plant. The best way is to open trenches 6 in. deep and wide enough to lay the roots out straight. If the land is heavy, cover the crowns 1½ in. deep with the compost formed by the waste matters which accumulate at the rubbish heap; but let it be rotted down to mould. The cost of the bed will be just the cost of the plants if they have to be purchased, or the seeds if seeds are used. Although it is full late for both planting or sowing yet, good results have been obtained by late planting, if the plants are procured near, and water and mulching be well attended to. If two-year-old plants are used, some Asparagus may be cut the second year after planting.—E. H.

2323.—**Flies in Rooms.**—Being much pestered with flies in my smoking room, I hung a piece of net, 1-in. mesh, outside my window. I had read of this in a work on Egypt. I then by means of a leather flapper, 5 in. in diameter, tied to a piece of cane, killed about one hundred flies; and from that time to the present, many years, have never had a fly in the room, except a stray one coming in at the door. I found this so successful, that I had made a light deal frame with net, ¼-in. mesh, nailed on, and fitted to the windows of the drawing and dining rooms, and we never have a fly, but I found they came into the hall. I then had made a door frame,

put on to the front door with hinges, and a spring to keep the door shut on people going in and out, and we are now free from flies in the house. This was tried by hanging a net over the door of a dairy, and reported ineffectual, but the reason was, servants going in and out took flies in with them, and no doubt often kept the net away from the door. I can safely assert this plan certain, but at the same time regard must be paid to prevent servants especially from allowing the nets to be opened. In my drawing-room upstairs I have three windows in front, and I have a frame with ¼-in. mesh put on with hinges, so that the window can be cleaned; it is in two pieces, and I keep the window open to let in fresh air, the other two windows being kept shut. I have a Tobin's ventilator also in the room. For a bedroom I have adopted a most efficient ventilator. Instead of a wire gauze blind I had a frame made about 2 ft. high and ground glass inserted, and fixed inside at about 1 in. from the window; the lower part of the window is opened about 3 in., and the air comes in between the frame and window and goes up, causing no draught. It is as well to have a sand bag to put over the upper part of the sash, as the wind coming in there might cause a draught.—OLD INDIAN.

2252.—**Hardy Perennials.**—The following are the names of a few perennials that just occur to me, which may be sown in July and August. All such seeds may be sown as soon as ripe, that being their natural season:—Lupinus polyphyllus, L. macrophyllus, Foxgloves (spotted varieties), Dictamnus fraxinella, Linum perenne, Delphinium formosum, Veronica spicata, Lunaria biennis, Columbines, Antirrhinums, Anchusa italica, Rudbeckia Newmanni, Campanula pyramidalis, C. nobilis, Alyssum saxatile, Violas or Pansies, Doronicum Clusii, Primula japonica and others, Dracocephalum austriacum, Trifolium rubens, Hollyhocks, Sweet Williams, Centaurea montana.—E. H.

2255.—**Hollyhock Leaves with Red Spots.**—The red spots on the Hollyhock leaves are indications of a fungoid disease that has been destructive to that class of plants of late years, especially in dry seasons. Pick off the badly affected leaves and burn them, and wash or dip in a solution of Gishurst Compound, 3 oz. to the gallon, with ½ lb. of sulphur added to each gallon. This dressing should be repeated as often as necessary; and at the same time the plants should be encouraged to make new growth by mulching with manure and liberal supplies of water if the weather continues dry.—E. H.

2296.—**Drying Wild Flowers.**—Get as perfect specimens as possible of each plant; it should have good leaves, radical and upper; also flowers and, if possible, fruit or seeds. It is often well to have a second specimen having seeds. Spread it in as natural a manner as possible between sheets of stout blotting-paper, and leave it in press under a moderately heavy weight until quite dry, *i.e.*, from a few days to two or three weeks, tender plants taking a short time, woody ones longer. The blotting-paper must be changed if it gets wet. When dry fasten to sheets of white paper with narrow slips of gummed paper. "Lessons on Elementary Botany," by Professor Oliver (Macmillan), will give full information on the subject.—A LOVER OF FLOWERS.

2298.—**Flowers for Button-holes.**—Lantanas of various kinds, and Ageratums (both blue and white), Verbenas, Paris Daisies, Cuphæa platycentra, are all suitable subjects for the purpose. They will, however, thrive much better if grown fully exposed to sun and air. Plant them in a box and place the same on the window-ledge; they will flower profusely during the summer months.—C.

2268.—**Sawdust for Blanching Celery.**—Fresh sawdust will not do for blanching Celery, as it would—especially if from Pine wood—impart an unpleasant flavour. But when it has laid up in a heap for 12 months, I have used it with advantage, and the Celery turns out from it beautifully clear and free from speck or blemish.—E. H.

2246.—**Rhododendrons not Flowering.**—If the seed-pods are not picked off the plants immediately they have ceased flowering, bloom-buds another year need not be expected; this I have proved over and over again.—R. H. P.

2270.—**Bottom-heat for Frames.**—*W. S. J. D.*—The consumption of oil (petroleum) is 6 quarts; at 1s. per gallon, retail, comes to 1s. 6d. per week. The reason the lamp is made to hold two quarts is, lest by any oversight it might be left for more than thirty hours without being filled. Paraffin is cheaper, and is sold from 9d. to 10d. per gallon in Ireland.—PETROS.

2347.—**Camellias in the Open Air.**—Might Camellias grow out in the open air all the year round in the south of Scotland? and if so, should they be covered up in winter?—NITH. [When once established, we believe the Camellia would grow in the south of Scotland, as it is much hardier than many other shrubs generally planted.]

2348.—**Marechal Niel Rose.**—Will a young Maréchal Niel Rose 3 ft. high flower this year planted on back-wall of greenhouse?—J. H. T. [We should say not; but it might flower early next spring.]

2349.—**Plunging and Watering Balsams.**—Would Balsams flower well if plunged in sawdust kept damp in a greenhouse? Being from home during the day, I have sometimes found them flagging on my return. Is liquid sheep manure good for them in a strong state? and how often should it be given?—PETROS. [Ashes, Cocoa-nut fibre, old tan, or hops, would be better than sawdust, as the latter is apt to breed fungus in the soil. You cannot have anything better than liquid sheep manure for watering them with. Apply it in a weak state at first two or three times a week, and gradually increase its strength.]

2350.—**House for Tuberous Begonias.**—As I intend building a glasshouse, and devoting it to the culture of tuberous Begonias, would you say which is the most suitable situation for such a structure?—J. H. S. [If a span-roofed house, let the ends face north and south; if a lean-to, south, you cannot get too much light and sun in early spring; in summer you will have to shade the plants slightly. You can, however, grow very good Begonias in a house with any aspect.]

2351.—**Planting Creepers.**—At what season of the year should I plant Clematis and other creepers to climb on some old Apple trees?—E. H. B. [In spring or autumn.]

2352.—**Strawberry Culture.**—Last autumn I planted some Strawberry runners, and this year only about two-thirds of them are flowering. Ought I to pull the non-flowering ones up and replace them with fresh plants? or, will they flower and fruit next year when they are stronger? My soil is very sandy, but I want to get them as fruitful as I possibly can. When should manure water be applied to them?—TREMADOC. [As the plants are weak, it would be well to give them another year. Apply manure water as soon as the fruit is set.]

2353.—**Cucumbers Fruiting.**—Will Cucumber plants bear fruit in a frame without anything being done to them? I have heard that there is what they call a male and female bloom, and that there is some mode of treatment without which they will not bear any fruit.—XERXES. [They will bear fruit freely enough at this time of the year without artificial fertilisation, which is the treatment you have heard of. In winter it is sometimes necessary.]

Melons Ripening.—*Constant Reader.*—You will easily tell when a Melon is ripening by the perfume it will emit on opening the frame in the morning. When this is observed, examine the fruits; and when you find them begin to crack round the base of the stalk cut them at once, and put them in a cool place till wanted.

Young Vine.—*J. H. T.*—If the Vine is growing rapidly it will not injure it in the least to cover up part of the rod at the base with soil. It will soon emit roots from the stem and assist growth; but it would be best to do it a little at a time—say 6 in. of soil added would be plenty at once.

Camellia Leaves Curling.—*C. H. W.*—Perhaps they are dry at the root. Place the pots in a tub of water for half an hour or so, and if the plants have made their growth, place them out-of-doors in a shady situation, but not under trees. Syringe them daily throughout the summer.

Moving Virginian Creeper.—*E. S.*—If the plant is a small one it might be moved now if well watered first, and dug up without breaking the soil from its roots; but if a large plant you had better leave it till the leaves die down in autumn.

Gladioli Leaves Turning Yellow.—*Learner.*—The weather may have something to do with it. Be careful not to get the soil in the pots sodden with over-watering, and be equally careful not to let it get dust, dry.

Vine Leaves Shrivelling.—*Novice.*—The leaf sent appears to be completely scorched up. It also appears to have been grown without ventilation. Give plenty of air. If the soil is well drained give plenty of water; not often, but when you do water, give a thorough soaking.

Herbaceous Plants.—*A Lady.*—Mr. Ware, Hale Farm Nurseries, Tottenham; Mr. Parker, Exotic Nursery, Tooting; Messrs. Backhouse & Sons, York; Messrs. Dickson & Sons, Chester; or any other good hardy plant nursery.

Calystegia pubescens.—*A Lady.*—This is a hardy perennial. If you obtain plants at once they will flower well this season. It is easily increased by division of the root in spring.

Insects in Peas.—*J. B.*—It is a common thing in Peas this year. The insect in its grub state is in the Pea before it ripens in autumn, and comes to life in spring. There is a small hole in each Pea containing an insect.

Pelargoniums with Small Blossoms.—*E. G. J.*—If your plants are in a shady place, the blooms are sure to be poor; Pelargoniums want plenty of sun.

Cleaning Flower-pots.—*One who Wants to Know.*—The best method we know of is that described in GARDENING, May 1.

Platycerium alcicorne.—*J. C.*—Syringe it well daily, and occasionally throw it into a tank of water, and let it remain for a quarter of an hour.

Centaurea cyanus minor.—*M. G.*—The seed of this is easily obtained at any good seed-shop.

Brugmansia.—*M. G.*—From any good London nursery; we do not know the price.

Young Beginner, Rugeley.—The question asked can only be of interest to yourself, and if you will send us your address we will advise you.

W. Thompson.—Your question is altogether out of our way.

Fuchsia Riccartoni.—*G. G., Manchester.*—Apply to Messrs. Backhouse & Sons, The Nurseries, York.

C. F.—The Camellia leaf is scorched. Shade the plants from the sun, and admit abundance of air.

Auriculas Out-of-doors.—*A Lady.*—A top-dressing of good mould will do the plants much good.

Tomatoes.—*G. S.*—See GARDENING, May 22 of this year.

A. S. W.—If of any practical value.

Happy thought.—See our advertising columns.

Names of Plants.—*J. B.*—The Fern is Pteris serrulata. We cannot name such flowers as Fuchsias or Geraniums.——*A. M. T.*—1, Centaurea jaca; 2, Goutweed (Ægopodium Podagraria).——*St. R. B.*—1, The scented Woodruff (Asperula odorata); 2, Centaurea montana; 3, Aquilegia vulgaris.——*H. C.*—1, Symphytum asperrimum; 2, Veronica (alpine species); 3, Veronica repens.——*Tyroni.*—Equisetum palustre; 2, Listera ovata; 3, Sagina procumbens; would do for a rockery.

QUERIES.

2354.—**Honeydew.**—It is well known that the aphis is an invariable precursor of honeydew, but it is not so well known how it is produced. One authority declares it to be ejected from the insect itself, and that it is "erroneously supposed to be an exudation from the leaves on which it is found." Another says, "The strange notion is entertained that this matter (honeydew), is exuded by the aphis itself, when in reality it is emitted through the upper pores of the leaf." Can any doctor among your readers decide this knotty point for me?—H. D.

2355.—**White Flowers for Cutting.**—I propose to plant out in cold frames Gladiolus Colvilli albus, and Narcissus poeticus fl.-pl. Are they perfectly hardy under this protection? and how many of each would go in a space 16 ft. by 6 ft.? What month should they be planted to get them in as early as possible? and is there any other white bulbous flower that would do and sell better under same conditions?—AMATEUR.

2356.—**Spotted Mimuli.**—I have one of these plants—or rather four or five, in the same 8-in. pot—whose branches have in ignorance been allowed to grow to the length of about 20 in., in consequence whereof the plant had an unsightly, straggling appearance; and, with a view to improving it, I about ten days ago surrounded it with a supporting wire guard about 18 in. high, pinched off the point of each branch to stop further length, administered soot-water to the roots, and removed it from a small window facing east, without much sun, to a much larger one facing west, and since then the plant has flagged. Can any one account for this? and could I safely cut the plant down to within 5 in. or 6 in. of the edge of pot? and could plants be raised from such cuttings? It was fresh and flowered freely up till then. I removed the seed pods at same time.—FLY ORCHIS.

2357.—**Making a Pond.**—Can any reader kindly give me any information to enable me to construct a small round pond, say 6 yards round and 4 ft. deep? How must the bottom and sides be coated to keep the water from getting away. Soil is clayey.—CASSIOWARY, *Edmonton.*

2358.—**Camellias Out-of-doors.**—Will some one tell me if Camellias would succeed near Bedford in the open-air? Our Laurustinus this year were all cut down to the ground. Also please give the names of a few of the hardiest kinds, with hints as to cultivation, soil, when to be planted &c. Do they require covering in winter?—W. G. LOVELL.

——I intend to act on "Omega's" advice, and plant Camellias out-of-doors. Will some one kindly quote twelve of the best various colours, hardy, and best fitting for the purpose, and the proper time for planting out?—W. S., *Cornwall.*

2359.—**Cool Orchids.**—When should the following Orchids flower in a cool house: Epidendrum vitellinum majus, Dendrobium japonicum, Lælia autumnalis, Pleione Wallichi, Odontoglossum Rossi majus, O. Insleayi leopardinum, and O. cirrhosum? What should be their treatment now as regards watering, &c.—L. N.

2360.—**Guano for Flowers, &c.**—I have an equal quantity of guano and superphosphate of lime mixed together. How many ounces of this mixture should be put into a gallon of water to make liquid manure for flowers? and what proportion of dry earth should be mixed with this mixture of guano and superphosphate, so as to enable one to sow it broadcast in the garden?—ROYSTON SUBSCRIBER.

2361.—**Winter Lettuce.**—Will some reader inform me of the two largest and best Cabbage Lettuces to stand the winter?—J. B. F.

2362.—**Making a Vinery.**—I am erecting a small span-roof Vinery, 24 ft. by 12 ft. I wish to know if it is necessary to make a border for the Vines, as I am building it in a kitchen garden, where the soil is, I imagine, pretty rich; subsoil is dry, being on limestone rock. If necessary to make a border, when is the best time to do it, and how? How should the house be heated—by flue, or hot water?—AGRICOLA.

2363.—**Fruit Trees for South Coast.**—Will any reader kindly tell me the names of half-a-dozen Pear and Apple trees, also Plums, suited to grow on the south coast in Sussex? and also if there is any good fruit nursery in this county?—EASTBOURNE.

2364.—**Standard Roses in Pots.**—I wish to grow some standard Roses in a greenhouse for decoration. Would any reader kindly give me the names of a few good sorts for that purpose?—MIDDLESEX.

2365.—**Malmaison Pinks.**—Will your readers tell me the best way to grow the Souvenir de Malmaison Pink, so as to ensure good flowers. Last year we had fine plants and promise of flowers in the open border, but the wet season spoiled all the flowers as fast as they began to come out. We therefore took the plants up, potted them in good loam, and kept them in a cold frame during the months from November to March. They were in March put in a greenhouse for forcing—the temperature about 60° to 65°. After the buds were formed and the flowers well advanced, the stems of all the plants became dry and brown, and many of the plants died, evidently from the stalks just above and some below the soil rotting off. The plants were kept moderately damp, and twice had liquid manure. Any information on the right culture of this plant will be gratefully received.—BURY ST. EDMUNDS.

2366.—**Worms in Gardens.**—Can any one inform me what is the best means of getting rid of worms in a garden? Although I pick out all I can when digging the ground, yet my Onion and other beds are completely overrun with them. The beds are a mass of holes, and I suspect it is owing to the worms that my Onions are so thin. I suspect also that they get at the Peas, Scarlet Runners, &c., when sown, by the scant produce I have. B. TAYLOR.

2367.—**Mortar for Greenhouse Flue.**—Will any of your numerous readers kindly inform me how to make a good adhesive mortar for fixing a flue in a greenhouse? I find many kinds I have used crack as soon as they are exposed to the heat. I want a mixture that will not do this.—J. W. K.

2368.—**Grafting Wistarias.**—In my garden against a west wall is a very fine specimen of Wistaria sinensis growing to the eaves of a tall building, and covered with its beautiful lavender blossoms, though they are rather damaged by late frosts. In the catalogues of some of the leading nurserymen are the names of no less than eight varieties of this beautiful climber, of which we may get small plants, but not sufficiently advanced to blossom, and therefore the purchasers are left quite in the dark as to whether the varieties are worth cultivating or not. I should like to have the whole of these kinds grafted or budded on my strong-growing sinensis, if worth the trouble. I think the effect would be very striking if judiciously done, but where are the blossoms to be obtained? If the editor of GARDENING ILLUSTRATED will kindly apply to his very numerous subscribers to send one good raceme of each variety of these beautiful plants to his office, and will give his opinion as to the merits of each variety, truly he will be conferring a great boon on all possessing large specimens of Wistaria sinensis, for then the lucky owners can have the whole series grafted or budded on one tree, which would give a most pleasing variety to the beautiful lavender blossoms of the main stock I have thought of this for years, but could never see my way until the article on the Wistaria appeared in GARDENING ILLUSTRATED lately, and the plants should be all in full blossom now. —F. NASH.

2369.—**Children's Flower Show.**—We, the teachers of a Sunday school in this town, are going to hold a flower show this year some time in September and as the majority of the exhibitors will be children, I should like to have some practical advice as to the things most likely to succeed. We are just starting the thing. In your advertising columns I see Balsams at 1s. 6d. dozen. Now, I think that will be a thing our scholars can grow, as they do not require heat after the seed-pan treatment. Will some one give directions how to treat them, as the majority of amateurs grow them as long unshapely specimens? Asters, again, may, I think, do; and will Fuchsias struck now be plants by that time? These are my own thoughts, but I humbly ask for advice in the matter. I myself shall go in for a vegetable collection. Can any one give me advice when to plant for that time? I have a large garden, can put up a frame. and willing to give time as long as I can succeed. Can we manage Phlox Drummondi from seed sown now? Will it bloom in pots for September?—W. G.

2370.—**Sparrows Eating Pyrethrum.**—Can any one tell me how to prevent sparrows eating my Pyrethrum?—ONE WHO WANTS TO KNOW.

2371.—**Prickly Comfrey.**—Would Prickly Comfrey be good as food for hens, ducks, and pigs? and if so, what is the best way of preparing it?—T. J. S.

POULTRY.

Nests for Sitting Hens.—In making a nest for a sitting hen it is best to make the nest on the ground in the corner of an out-house, stable, or in the yard, and away from the other hens: a large turf of Grass placed at the bottom, and on the top of this some hay or straw, and with a few bricks put round to keep the eggs from rolling out. If the weather is dry, the whole—eggs, turf, and hay—should be well drenched two or three times a week with slightly warm water. We prefer taking the hen off the nest each morning to feed and dust, rather than leaving her to come off of her own accord.

Best Kind of Fowls to Keep.—As T. T. Ewing requires a hardy and prolific fowl, we should say try the cross between the Brahma and Dorking—a Dorking cock and Brahma hens. The offspring of these grow very quickly, are hardy, and make splendid table fowls, and are excellent layers. Hens seldom lay away if a sufficient number of nests are provided and a dummy egg is placed in each nest.

Black Combs.—The colour in the comb often changes if the weather is cold and the atmosphere dry but with a warm shower they soon regain that coral redness which is a sign of good health and condition. Birds also become white in comb as they are about to discontinue laying, but as "F. F.'s" fowls are healthy and lay well, there cannot be anything the matter with them.

Unfertile Eggs.—We should advise "A. P. K." to change the cock, and let the hen have all the run possible.

AQUARIA.

White Slime on Fish.—The white matter may arise from overcrowding, too much sunlight, or the presence of decaying matter in the water. Take the fish as soon as it appears, and put them in a soup plate, with a few stones at the bottom to rub against, and place under a gentle flow of water for a few hours. More snails might help to prevent it if it arises from the last-named cause.—T. CHADBURN.

Covering Aquarium.—If the aquarium is exposed to dust, or if you have any beetles in it, it is best covered. Gravel well boiled will answer. If the bottom is not deep, plant in pots.—T. C.

Water for Aquarium.—Soft water is best, but the ordinary drinking water will answer. If properly stocked you need not change the water for twelve months.—T. C.

Caddis Worms.—Your caddis will feed themselves if left alone, and by-and bye they will close up the mouth of their cases, and go into the "pupa" state, after which they will emerge in the form of a four-winged fly.—T. CHADBURN.

Fishes Fins.—Can any reader say why some of the fish in my aquarium do not raise the fin on their backs? I think it must be a sign of ill-health. My aquarium is a propagating glass, 13 in. in diameter, with sand and shingle, and a few plants in, two or three snails, three gold fish, two roach, and two minnows. I do not change the water, only take a little out with a siphon, and add fresh with a fine rose watering pot, and I do not feed the fish. I shall be very much obliged for any information.—CAMPION DAWSON.

THE HOUSEHOLD.

Asparagus Cooking.—A hint about boiling Asparagus is worthy of mention, since the proper method is rarely followed by English cooks. Asparagus of the stouter sort, always when of the "giant" variety, should be cut of exactly equal lengths, and boiled, standing ends upward, in a deep saucepan. Nearly 2 in. of the heads should be out of the water—the steam sufficing to cook them, as they form the tenderest part of the plant: while the hard stalky part is rendered soft and succulent by the longer boiling which this plant permits. Instead of the orthodox twenty minutes allotted to average Asparagus lying horizontally, in the English manner, which half cooks the stalk and overcooks the head, diminishing its flavour and consistence, a period of thirty or forty minutes, on the plan recommended, will render fully a third more of the stalk delicious, while the head will be properly cooked by the steam alone. One reason why it is not uncommon to hear the best produce of the fields of Argenteuil insufficiently appreciated here, and our own Asparagus preferred, is, that the former is rarely sufficiently cooked at English tables.

Peas Flemish Fashion.—For the following receipt we are indebted to Sir Henry Thompson: Put 1 pint of Peas, 1 oz. of butter, and ½ lb. of flour, into a stewpan; stir well over the fire until the butter is melted, add a little Parsley, three or four small Onions cut up, and two Lettuces sliced rather fine, and ½ pint of Stock, a teaspoonful of sugar, and some salt. Put on the lid, and stew for half-an-hour. Take out the Parsley, add a little more butter, and serve.

Cooking Green Vegetables.—To prevent green vegetables from having an unpleasant scent when cooked put them into plenty of boiling water with a little salt, and throw on the top of the water a stale crust of bread, and let it remain in the water till the vegetable is cooked.—DOT.

FLOWER SHOW AT KENSINGTON.

THOUGH in many respects the four days' show which was opened at South Kensington on Tuesday last was inferior to the corresponding exhibition last year, it was nevertheless a good one, the classes on the whole being tolerably well filled, and for the most part well represented. The absence of the fine banks of Clematises which formed a noteworthy feature last year was conspicuous; there was only one group of pot Roses (probably owing to the show being nearly a fortnight later), and this, added to the remarkably poor show of Azaleas, gave the large tent a subdued, if not a sombre appearance, more especially as the places of these bright-coloured subjects were filled by banks of fine-foliaged plants relieved by very little flower. A four days' show ought to be a good one, but probably it would be better if the time was curtailed by a day or two, for both private and trade growers do not care to exhibit valuable plants for so long a time; for instance, not a single exhibit came from Messrs. Veitch & Sons' nurseries, which generally contribute largely to the display; and the absence of other fine collections was noticeable. Opposite to the entrance of the large tent Messrs. Radclyffe & Co., High Holborn, exhibited a display of Ferns on rustic rockwork, at the top of which was a statuette fountain. A group of Roses from the Cheshunt Nurseries occupied a bank at one end of the tent, while the opposite one was devoted to fine-foliaged plants, which were unusually fine, and produced a grand effect. The Roses, from their elevated position, presented a fine appearance. The central mounds were occupied by show and fancy Pelargoniums on the one side, while on the other was a fine bank of Coleus and other fine-foliaged plants from Messrs. Carter, Holborn, backed by a fine group from Mr. Bull. The groups of plants arranged for effect were unusually numerous, one class occupying a large space in the large tent, as did also the specimen stove and greenhouse plants, of which there were about a dozen collections. The non-competitive groups of plants in the large tent were very effective, and notably that of the General Horticultural Company, which consisted chiefly of their fine hybrid Dracænas, each of which formed a handsome specimen. One half of the long tent leading from the large one was devoted to the ten collections of Orchids, the tuberous-rooted Begonias, hardy flowers, &c.; while the other half nearest the council-room was occupied by fruit and vegetables (of which there was a remarkably fine display)—cut flowers on one side, and new plants and groups on the other. Miscellaneous exhibitions were numerous, but amongst them were fewer implements, appliances, and structures than usual.

Horticultural Shows.—It has often occurred to me that the advantages derived from these exhibitions would be much more decided if the weight of some of the prize fruit and vegetables were made known. At a small show prizes are won, in Strawberries for instance, by fruit which is nothing like what might be grown; and the only criterion of excellence in size which the people of the district have is that afforded by the prize-winning dish of fruit. I would suggest, if the editor of GARDENING is willing, that the secretaries of some of our exhibitions should have the prize exhibits weighed where practicable, and send the number of fruit exhibited in the prize dish, with their weight, for insertion. We should thus be able in out-of-the-way places like where I live to form a better idea of what real excellence is.—TREMADOC, *North Wales*.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 6s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 1s 6d to 2s; Strawberries (early forced), per oz, 4d to 6d.

Vegetables.—*Per 100.*—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 9d to 1s; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 6s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 9d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 2d to 5d. Broccoli (Cornish) per crate, 10s to 18s; Broccoli (Sprouting), per bushel, 2s 6d; Savoys, per score, 5s; Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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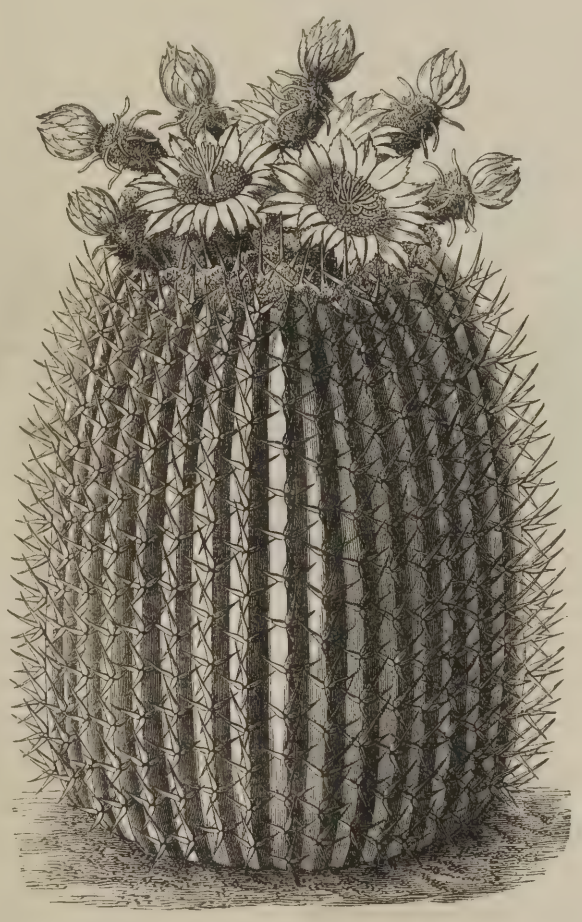
CACTI FOR WINDOWS AND GREENHOUSES.

Most people are acquainted with the tall-growing free-flowering Cacti, or Phyllocactus as they are botanically called, of cottage windows—plants which require only a sunny place and a little water sometimes to make them expand their blossoms, which in texture and brilliancy even the choicest Orchids cannot rival, but everyone is not aware that there are many other very different forms of Cacti, which may be grown with little trouble in windows and greenhouses, and which are a source of interest on account of their peculiar forms, and at the same time produce brilliant blossoms. Nearly all kinds of Cacti may be bought in a miniature state in Covent Garden or elsewhere, and if carefully tended they will in time develop into something like the plants represented in our illustrations. "Cacti are more curious than beautiful," say some. "What freaks of Nature these are!" say others, alluding to the plants in the succulent house at Kew, a house that everyone interested in Cacti should not fail to visit; others think all Cacti beautiful, and derive as much pleasure from them as do other amateurs from collections of other kinds of plants. The so-called night-flowering Cereuses rank amongst the finest of all flowering Cacti. The plants belonging to this class are climbers, and do best in a warm greenhouse, in a soil consisting of good rough loam and peat, with a dash of sand in it. Where it is necessary to move them about, a good plan is to grow them on an old Fern stem, or to get a wire cylinder and fill its centre with Moss and peat for them to root in; and if managed in this way they will do well in very small pots. To insure their flowering give them plenty of light, and do not fall into an error, which is unfortunately too common, viz., that of starving these plants. A drop of manure water at times will be found to be of great help, as will also surfacing the pots with some dried cow manure, and the syringe should be freely used during the summer time. The best flowerers are Cereus McDonaldiæ, creamy-white; C. triangularis, the same in colour and one of the largest; C. grandiflorus; C. hamatus, cream-coloured; C. Schrankii, rose; and C. pterogonue, a dwarf climber, with white flowers, the purest white amongst the Cactus tribe. Next come the Phyllocacti, just alluded to, all of which do well in a window or greenhouse. They may be trained on a trellis or in pots, with wires or sticks, but sticks are best, as the iron rusts and injures the roots. They like a rough but strong soil and plenty of water when growing, but when they have made their growth they should be well exposed to light and air. The best sorts are P. crenatus, white; P. Ackermanni, deep red; P. Edwardsi, rose; P. phyllanthoides, rose; and P. nitens, cream-coloured. To the more rigid forms of Cacti, Cereus vallidus, a kind with flowers of a pale rose colour, is a grand addition, and possesses a most delicate scent. All the kinds of Echinopsis have good flowers, and they are plants which can be grown very easily. Echinocactus Ottonis, yellow; E. mammillosus, white; and E. bicolor, rose and purple, are gems only requiring to be seen to be admired. The Tooth-pick Cactus depicted in our front page is one of the noblest of the genus to which it belongs. Its flowers, which are produced in profusion on the woolly apex, are straw coloured, their base or ovary being densely clothed with wool. The spines, which are in sets of from eight to ten, are very strong, and 1 in. or 1½ in. long, flat, and ribbed, and make very good and perfectly harmless tooth-picks. The plant grows freely in sandy loam, is moderately hardy, and will therefore grow in any airy window. The little dwarf Cactus (Echinopsis Pentlandi flammea) on p. 196 bears flowers 2 in. long, which are very showy. The plant itself, which is almost hardy, does not succeed in a hot dry house, in which it becomes affected by red spider, otherwise it grows freely. Mammillaria elephantidens, on p. 197, is a somewhat corpulent-looking species; each mamma is ½ in. long and 2 in. round, terminated by a cluster of from seven to nine pale brown spines. The flowers, which are large for those of a Mammillaria, are straw-coloured. Plants belonging to this genus are apt to become affected by red spider; therefore they do best in the open air during summer. They only grow about 6 in. high, and are, as a rule, favourites with those who are fond of Cacti. Mammillaria erecta, on p. 198, as its specific name implies, is an erect, narrow-growing plant, which attains a height of from 12 in. to 18 in. Its spines, which are yellow, are in whorls of from eight to twelve, the central one being



THE TOOTHPICK CACTUS (ECHINOCACTUS VISNAGA).

of the same length as the others. It has yellow flowers, and is nearly related to the Echinocacti. Cereus candicans, page 5, is a vigorous-growing kind, the stem of which, when about 5 ft. high, is often 3 ft. round, and the angles large and shallow, rendering the plant solid and heavy-looking. The spines, which are in sets of from twelve to twenty, are yellow, from 2 in. to 4 in. long, and very acute. It may be increased by offsets, which it produces freely from the base, and it is easily grown in almost any soil. The flowers, which are pure white, are but sparingly produced; but it is the spines, rather than the flowers, which constitute the chief beauty of this species. Stapelias are a kind of Cactus which may be easily grown. They are succulent, leafless plants, the branches of which are generally four-sided, toothed, and covered over with dark tubercles, which give the plants a grotesque appearance. Their singular and often beautiful flowers, which spring from uncertain points of the stems, exhibit a variety of colours, forming exquisitely marked or dotted patterns; and, notwithstanding the repulsive carrion-like odour which almost all the varieties possess, they are extensively cultivated because of their beauty. In addition to the above there are a great many other types of Cacti which are well worth growing, and a visit to Kew Gardens would offer a good opportunity for selection.

Phlox Drummondi splendens grandiflora.—This fine Phlox is well worth the attention of all who admire lovely flowers in windows. In pots or in the open ground it is equally effective, but I specially recommend it as a decorative pot-plant, as from the time when it begins to flower in the middle of June until the end of October it is never out of bloom. Its flowers are perfect in form and of an intense, rich, crimson-red hue, with a prominent white eye; the habit of the plant is robust and branching, and it is admirably adapted for cutting from without injury. Seed of it should be sown in pans in a cool house or frame early in April, and when large enough the young plants should be pricked out into other pans or boxes until sufficiently strong to be transferred, with a ball of soil attached to them, into pots. Four good plants are enough for a 6-in. pot, which they will fill thoroughly. Heat should be avoided as much as possible, but they like plenty of light and air.—A.

Petunias.—These make excellent window plants and are very showy, especially the flaked varieties, both single and double. To have them stocky and short-jointed they should be grown out-of-doors, fully exposed to the sun, and be stopped frequently, to induce them to break back freely and form bushy plants. When grown under glass the stems become drawn, which they likewise do in the greenhouse while producing their blooms. To obviate this as much as possible they should be placed in light, airy positions, where they only get a small amount of shade, if any at all. By cutting back any that have become straggling and drawn, and replacing them out in the open air, they soon break again, and flower with great freedom, so that a constant supply may be kept up by growing a few plants and treating them in this way. While out-of-doors the pots should be plunged, so as to prevent the sun from drying the roots.

Wild Flowers for Table Decoration.—Our native flowers and Grasses make extremely pretty table decorations, and during the spring, summer, and autumn months we frequently employ plateaux with an undulating surface covered with green wood Mosses, which form an effective and natural groundwork for wild flowers. Some of the rough Sedge-like Grasses, either taken up with roots or tied in bunches, are then introduced, and whatever kinds of wild flowers are in season are associated with them in irregular groups. Amongst these are the large Horse Daisies of our meadows, the Primroses and Bluebells of our woodlands, the aquatic plants that garnish our streams; and one plant, the Wild Carrot, that in Suffolk grows freely on dry banks and waste places, is so extremely pretty with its large flat heads of the most delicate little flowers, and looks so light and pretty, that I find it well worth cultivating, as I have not observed it growing wild in this part of Kent. Last season I sowed some seeds of this plant in good garden soil; and the size and quantity of bloom which they produced would convince anyone that even common native plants are capable of responding to liberal culture and producing better results than ever they do in a state of nature. And, to show how little our native plants are known and appreciated, I may mention that although many visitors well versed in exotic plants admired the light aërial beauty of this native flower, it was unanimously set down as a new and rare plant until seen growing accompanied with its well-known foliage, when it was at once recognised.—J. G.

Character in Gardens.—Were each to consult his own taste in the garden, instead of imitating his neighbour, every garden, large or small, would assume a character of its own. This would give variety and the sense of novelty or individuality to each garden, which could hardly fail to enhance the pleasure to be had from it. The garden is the very place in which to ride a hobby. It is much safer to do so than in any other occupation; for horticultural hobbies are always innocent, harmless, and, relatively to others, cheap. One lady, for instance, delights in Lilies—let her garden, therefore, be mainly a garden of Lilies. Another cares for nothing but Roses—what more charming than a garden of Roses! Another rejoices in spring flowers above all others—let hers be a spring garden. And so with all other plants, trees, shrubs, and flowers. Each man and woman's garden should mirror forth, as it were, the individual's taste. By amateurs selecting to grow most of those they like, room enough would be found to do their favourites justice.—T. F.

Dwarf Cactus (Echinopsis Pentlandi flammea).

Making Asphalte Walks.—A land agent at Warminster makes these as follows:—Living within a reasonable distance of the Cranmore Quarries, I obtain from them the mixture known as asphalte, viz.—gravel or stone chips mixed by machinery with tar to a certain consistency, which is then laid by two men upon a properly prepared bed of stone; the asphalte is separated into two qualities, the rougher and the finer, and laid in two courses to the depth of 1½ in. to 2 in.; this is sprinkled with sand and compressed with a heavy roller. Total cost in our neighbourhood varies from 1s. to 1s. 6d. per yard.—*Journal of Forestry.*

The Cottager's Hotbed Light.—Make a slight frame of 2 in. or 3 in. wide, to the size of a box, and tie across it strings, dividing it into squares of about 15 in.; paste together sheets of cartridge paper or newspaper sufficient to cover the whole, then paste and afterwards tack this to the outside of the light frame, letting it rest upon the strings. When perfectly dry take a brush or sponge and saturate the paper with linseed oil, which, when dry, will afford a congenial light to Cucumbers, or even Melons, retain the heat of the bed, draw the sun, and yet throw off the rays, and resist the weather for at least one season. Cucumbers grown under such a light have carried the first prize for flavour at horticultural shows.—A

THE SHRUBBERY.

Mock Oranges.—Syringas, or Mock Oranges, rank among the most effective and beautiful of all perfectly hardy and deciduous-leaved flowering shrubs. All of them have white or cream-coloured highly-fragrant flowers, and they are all very similar in foliage; hence, a selection of three or four species or varieties is sufficient for all purposes, except where the object is to form a collection. The principal thing to observe in selecting varieties for general planting in mixed shrubberies is their season of flowering. For instance, at the end of June the earlier-flowering ones are over, and the latter ones just coming into bloom. The earliest is Philadelphus coronarius, which, as a rule, begins to flower about the middle of May. For gardening purposes it is one of the species that we should recommend, because it is the first in bloom. The flowers, though much larger than those of the Orange, have a general resemblance to them, and they are also very odoriferous, without possessing the delicate perfume of the Orange blossom; indeed, their odour is too powerful for them to be employed extensively in bouquets, though agreeable to most people in the open air. There is a double-flowered variety which, in our opinion, is not superior, if even equal, to the common single kind. To alternate with P. coronarius, a pretty and very distinct species or variety, P. Satsumi, sometimes called P. chinensis, may be selected. It flowers almost as early and quite as profusely as P. coronarius, and it is likewise sweet-scented. Another fine form is P. tomentosus. It comes into bloom early in June, and bushes of it were literally covered with clusters of large flowers about a fortnight ago in the neighbourhood of London. P. grandiflorus is a tall-growing shrub, from 8 ft. to 12 ft. high, with irregularly-toothed leaves and fragrant flowers, nearly double the size of those of P. coronarius, and, as already mentioned, it does not begin flowering until the latter is nearly or quite over. These shrubs succeed in almost any soil and situation, but they appear to bloom most abundantly on a poor light soil. They are also exceedingly ornamental, particularly the early-flowering ones for a wall, sunny aspect, trellis, or arbour. Where only a small number is required, P. coronarius, P. Satsumi, and P. grandiflorus may be selected. All the varieties bearing the names included under P. grandiflorus are good. The Mock Oranges are not very rapid coarse-growing shrubs, and may easily be kept within reasonable compass by the judicious use of the pruning knife. But care should be exercised in the use of it, whether for the purpose of giving them a comely shape or reducing their size. The main branches of a bush may be cut away to the base or shortened; and it should be remembered, when pruning wall or trellis plants, that it is the short lateral branchlets which bear the flowers. Mock Oranges are grown largely in glasshouses by some florists for supplying cut flowers in early spring.

Double Crimson Thorn.—I noted some young trees of this Thorn in full flower at Tottenham a month ago, and could not but admire their beauty. It so happened that I passed the trees as the sun was declining in the west, and the bloom being lit up with softened mellow light the colour was charming. The double kind has, under any condition of light, much the deepest colour of all the Thorns, and as regards depth of hue is almost unrivalled amongst hardy flowering trees. It should therefore be universally planted, especially in villa gardens of moderate dimensions.—D.

The Mezereon (Daphne Mezereum).—This is unquestionably the earliest-flowering shrub we possess, and yet it is much neglected and but seldom met with in good condition in modern gardens, although in point of beauty and habit there is nothing left to wish for. Being of moderate growth, its best position is alone or on the turf, where its blossoms in early spring are admired by every one.

ROSES.

Pruning Climbing Roses.—The climbing varieties of Tea and Noisette Roses need but little pruning if they are required to cover a house or to furnish large quantities of cut flowers, as strong growth, and the laterals from this growth, are most productive of blooms. The lateral growths should be pruned back to the stem as soon as the flowers are cut; fresh buds will then be sent out from the same stems, and liquid manure should then be applied to assist the plants in providing nourishment to the buds, which thus produce finer flowers. It is not to be supposed that these Noisettes or strong-growing varieties will remain well furnished if they are not thinned out at the proper time. If a plant is required to furnish a greenhouse or wall, the young shoots must be encouraged, and a few of the weaker shoots thinned out, and then by training the growth horizontally instead of perpendicularly, as in most cases is the practice, it will be found that the laterals will break more evenly and the plants will not be so bare at the base. I have found that, by reversing the direction in which the strong shoots are growing before they break into flower, buds that have been quite dormant will be formed. If a plant of Maréchal Niel is required to cover a conservatory, it is advisable to carry one or two strong growths as high as the spring of the roof, and then direct the points horizontally, right and left. The shoots that spring from these may be carried, at equal distances apart, to the apex of the roof. If the shoots are carried at once perpendicularly, and without check, to the ridge of the house, they are sure to be very bare at the bottom, as the strong varieties of Teas and Noisettes do not break so freely as the Grape Vine does when treated on the same principle. If the above advice be carefully attended to, the plants thinned out, and the flower shoots pruned back, it will be found, with watering and keeping the plants free from blight, that the Maréchal Niel, Devoniensis, and Lamarque Roses will flower twice in the season.—G.

Layering Roses.—Roses are mostly layered either in the autumn or early spring months. Perhaps November is the best month. Some varieties root readily if the shoots be only pegged down firmly to the ground and covered over with 1 in. or 2 in. of earth. Others, and the more slow-rooting kinds, have a tongue slit or opening made at the base of the bud where roots are expected to be produced. This opening or cut may be made under or over the shoot to be layered. Either way, in covering, a small stone or wedge should be placed in the cut so as to keep it partly open. Roots are then formed and sent forth from the end of the cut portion just as if it were a cutting. The weaker side shoots are the easiest to bend down to the earth; they also root most freely, and consequently form the best layers. The layering of Roses should not be attempted later than March. Many, however, prefer layering the half-ripened wood in June and July. If branches with later shoots be layered at that season, most of the side shoots may be made to root and form independent plants before winter. There is thus the gain of a season; for layers of ripened wood formed in the autumn or spring will not be sufficiently rooted to form independent plants till a year after, whereas summer layers form plants in a few months. There is yet another simple mode of layering dwarf Roses. At the winter pruning bend down and bury the heads of the side branches a few inches in the earth. Most of these will speedily form masses of roots, and send up strong shoots when the growing season comes round; and the plants from such layers can, of course, be detached from the parent stools in the autumn.—T. F.

Cats in Gardens.—As there has lately been a little correspondence on this, and on "the law on the subject," in Gardening Illustrated, I may inform "W. H." and "Major" that on looking over an old number of the *Exeter Gazette* (June, 1878), I find the case of a gentleman heavily fined at Brixham for shooting a cat while destroying one of his fowls. As a fowl is possibly of more value than a few seeds scratched up or displaced, "W. H." and "Major" may also some day find such a stop to their amusement of destroying what may be their neighbours' pet animals, even though they have sometimes a habit of running beyond their owners' grounds.—Justicia.

Paraffin as an Insecticide.—We have on the roof of the stove here a large plant of Stephanotis which was infested with mealy bug, and I syringed it with a mixture of one wineglassful of paraffin to four gallons of cold water, keeping the same well mixed by driving every alternate syringeful back into the pail again. The bug was destroyed and not a leaf was injured. Large plants of Gardenias were treated in a similar manner, and with equally good results.—W. T.

Draining Pots.—I am tempted to submit for the consideration of more experienced gardeners than myself a plan which I have never once found to fail during the last three years, and which, moreover, is very expeditious and easy. It is to put one crock over the hole and then an inch, more or less, of Cocoa-nut fibre refuse. You can no more choke this than you could a sponge.—H.

Elephant Cactus (Mammillaria elephantidens).

VEGETABLES.

CROPPING FOR WINTER.

From May till September is a period of the year of which possessors of gardens should make good use, or they will be short of many things which are needed most between Christmas and June.

Broccoli.—This is one of the most important of winter crops. The summer Cauliflower does well if it lasts till Christmas, which in tolerably mild autumns and early winters it sometimes does with the aid of the Walcheren—the hardiest of its class—Grange's Autumn Broccoli, and Veitch's Giant, and a little attention in the way of protection; but it is most commonly over before November is out, and then we look for the Broccoli coming in to carry on the supply till next midsummer. Notwithstanding successional sowings and planting, however, Broccoli cannot always be got to come in so regularly at any time as to prevent blanks occurring in the supply: everything depends on the weather after all. If the temperature keep above the growing point the plants will grow apace, and keep dropping in slowly; but if the thermometer drop sensibly below 40° and remains so, the supply will doubtless come to a standstill. We cannot say that sowing at any period between February and the middle of April in a late district ever gave us heads either earlier or later in the winter, for we have paid attention to the matter often. The wisest course is to select a goodly number of varieties, which should comprise the best and hardiest only, from the very earliest to the latest. The next point is to sow thinly not later than the end of March, and to plant out from the middle of May till the end of June in late situations, and till the end of July in more favourable districts, putting the earliest varieties out first. This is allowing a pretty wide margin as to time; but we may state that though we have had tolerable heads from plants put out in August, and many cannot get the work of planting done before then, still we always contrive to get all finished by the end of June, and all the varieties are planted at the same time. If the weather be dry at planting time, and for a while after, time is lost, for the plants hang fire so long before they begin to grow. Much, however, depends on planting. If the plants be got up carefully, with long top roots, and if these be let straight down into a good deep hole made with the dibber, and one thorough watering given at the finish, there is not much to fear. In warm growing seasons we have had young Broccoli plants with roots 12 in. or 18 in. long before they could be attended to, and they were planted thus:—A man with a broom-handle went along and made the holes deeper and wider than required, and another came behind and put them in and filled up. These plants always did well, and made giants before winter. Trenching, deep digging, and manuring of the ground is almost executed if it has been occupied by any of the Brassica tribe just before. When Broccoli begins to head and come in in a regular way, the supply is often greater than the demand. When this is the case, the heads should be cut with a good quantity of leaves to them and set in sand in a cool, dark shed, or behind a north wall, with a mat spread over them, or they may be put into the ice-house. Here we have kept them for a month, but after ten days or thereabouts they begin to taste when cooked.

Brussels Sprouts.—If the ground be clear, these cannot be planted out too soon. The longer the period of growth they have, the taller they will be and the more sprouts they will bear. If very large Sprouts are desired, then high culture, as for Broccoli, will be necessary, and the kinds which produce the largest Sprouts must be grown, such as the Dalmeny and Dalkeith; but with high-class cooks, and those who like to produce artistic dishes, the small hard Sprouts are preferred, as being most useful, and because they cook whole and green; large and loose ones, divested of their outside blades, are faulty in these respects. A distance of 2 ft. or 2½ ft. is enough between the plants when put out in good time, but the shorter the season of the growth before them the thicker they should be planted.

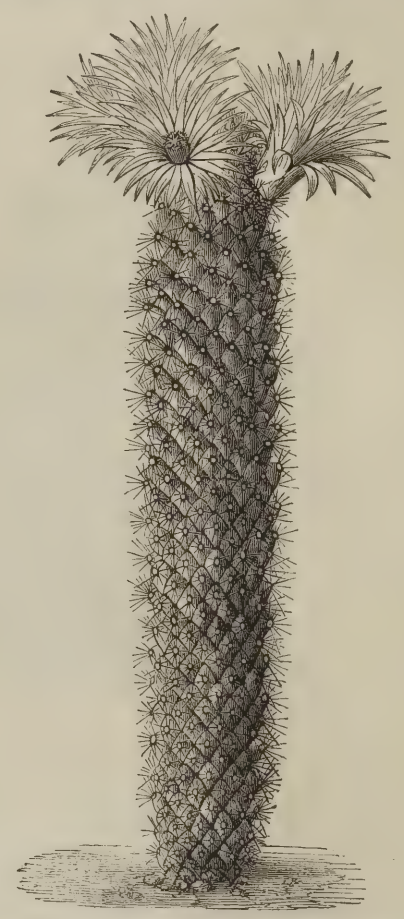
Savoys.—This excellent winter Green is preferred to Cabbage, and is much esteemed in some places. Only after it has received a touch of frost is the Savoy considered in season, and it is good to use it in early winter while it lasts, for the heads suffer sooner from frost than either the Brussels Sprout or the Cabbage. For bulk of crop, the old and somewhat coarse Drumhead is the best, but for better garden crops the Dwarf Green and Early Ulm are among the best, being early hearters, and tender and good. These kinds may be planted almost as closely together as Dwarf York Cabbage, and they will heart, though put out as late as the beginning or middle of August even in the north, but a month earlier enables them to produce larger and firmer heads. The Savoy likes liberal treatment like the rest of its tribe.

Cabbages.—As to these, a good breadth planted late in autumn or early in spring should—between the first cut heads and the hearted sprouts which they bear after—carry the supply well through the summer and winter; but, as a precaution, a sowing should be made in July or August of any of the early dwarf kinds, and also of the early Enfield, to succeed the first lot. It is well to have a good supply of tender Cabbage in the winter months.

Curled Greens.—These are not the least important of our winter crops. They are run upon when others fail, and are always in demand from the beginning of winter till near the end of June. "Be aye stickin' in a tree" was Dumbiedyke's advice to his son; and we would say, "be always putting in Greens as long as you have any spare ground to fill." There are always plenty of families ill-provided with vegetables during winter who are thankful for a "boiling" if they can get them, and it is wrong to waste them, as is often done, simply through letting them run to seed. It is not necessary to manure highly for Greens, but the ground should not be too poor. Still, we have planted the same ground for years in summer with Greens, giving them only the leavings of the manure heap, and have never had reason to complain of an ill crop. It is seldom that the planting of them can be done before August, and we continue to put them in till September, as Potatoes and such like crops are cleared away. It may just be mentioned that there is no vegetable of the kind of which more is sold, and sold profitably, than Greens, especially in the provincial towns and their neighbourhoods. Hawkers carry them far and wide for sale in the populous districts in the north of England.

Winter Turnips.—A good supply of these is a great desideratum during the winter and spring months. It is difficult to gauge the exact time to sow, but, making allowance for difference of climate, the main winter crop should be got in between June 20 and July 20, sowing earliest, of course, in late districts, and later in the south and in early localities. Two sowings, however, are best, allowing a fortnight between them, and then a good standing winter crop is almost certain. Winter Turnips should not be above half grown when winter overtakes them, as they then stand frost and alternations of the weather better. Mature, full-sized roots are the first to give way. Moderately rich ground and a deep litter should be afforded them; and when the plants are past all danger from fly, they should be thinned out to 2 ft. apart each way if sown broadcast, and if in drills, which is the best plan, the rows should be that distance asunder. Turnips which are thick on the ground never stand the winter well. Some people sow a later crop between the first and last weeks of August to succeed the first, but such a crop should not be trusted to. They may form usable little bulbs in spring, but the chances are that they will never come to anything, and run to seed the first thing when growth commences. Behind a north wall is a good situation for a winter crop of Turnips, as they are always in the shade during the short days, and, not being so often frozen and thawed, they last better. Chirk Castle is by far the best variety for winter, being very hardy, white-fleshed, and good.

Tender Cucumbers.—It is hardly too much to say that in nine cases out of ten Cucumbers are not cut until they are a long way past their best. Two-thirds grown is about the best size for Cucumbers. Beyond that stage they deteriorate. It is somewhat surprising that they should be allowed to do so; for Cucumbers are invariably sold singly, by the brace, or by number; none, unless pickling ones, are sold by pound, stone, bushel, or ton. Neither is there any loss of weight by cutting Cucumbers early. On the contrary, there is a great gain. The earlier the fruit is cut, the more will be produced and the longer the plants continue bearing. There is nothing like early cutting for perpetual fertility. Each fruit removed at one-half or three-quarter size is succeeded by two or three more. A second fruit will almost be fit to cut before the first would have been removed under ordinary circumstances. Early cutting also maintains the plants in the highest health and fullest strength. Of course, no one thinks of ripening Cucumbers, unless for seed. But there is much strain on the plants a long time before perfect maturity. By early cutting we almost hinder the seeds from being formed at all, and this also conserves the quality of the Cucumber, for it cannot have failed to attract notice that the finest-flavoured Cucumbers are those without seeds. Seed-bearing is fatal to tenderness, crispness, and sweetness. For this additional reason we would therefore advise the early cutting of Cucumbers. It is well, also, to pick off all the male blossoms as soon as they appear. This would effectually prevent seeds being formed. Cucumbers without seed are more uniform in size and more delicate in quality than those producing seed. It used to be thought that Cucumbers would not grow freely unless they were impregnated. This is quite a mistake. They swell equally well, and in fact are better for eating if all the male flowers be removed from the first. There is yet another plea for small Cucumbers—they can hardly be eaten too fresh. Cut and eat at once should be the rule. Almost the smallest household can eat up a small Cucumber at a meal or in



Erect Cactus (Mammillaria erecta); flowers yellow.

a day. A large one would last several days or perhaps a week. From the moment it is cut it begins to deteriorate, and by the time that it has been cut several days a Cucumber is hardly worth the eating, becoming stale, flaccid, or insipid.—D. T.

Strawberries and Peas.—I divide my garden into two portions; one I keep chiefly for Peas, with Strawberry borders; the other for roots and Beans, Potatoes, Carrots, Beet, &c. The Strawberries bear very well for five years, but some renew in three or four years. When I want to renew, I portion out a part of the ground (in which I used to sow late Potatoes as a rotation crop) and plant Strawberry runners. In the first spring I go over all the plants and root out the barren ones; and in the autumn I remove the bearing plants to the borders, and I have remarkably fine Strawberries, all bearing plants. Till I adopted this plan I found I had many barren plants in the borders. I also water the Strawberries by a shallow trench on each side, so that the roots get well watered; I likewise give one or two waterings of guano water—a tablespoonful to a gallon—when the plants begin to grow, and when in flower I generally tie up the fruit-stems to a stick, so as to get the sun, and use old tan and Cocoa-nut fibre. I tried Grass mowings, but the Grass heated and destroyed the fruit. I may mention also that one year I dug up some four-year-old plants, and, instead of throwing them away, divided the roots and planted in some spare new ground, and I never saw a finer crop of Strawberries. I dug them up after bearing, much to the disappointment of my gardener, who wished me to try another year; but I wanted the ground for Peas. I find the best plan for sowing Peas is to make trenches 6 in. below the surface, even for early Peas; they are nearer moisture, and can be easily watered, and are protected from cutting winds, and they can be earthed up if necessary. For succession I find sowing on March 1 best with Alpha, Wonderful, and other Peas, according to height (2½ ft. to 6 ft.), G. F. Wilson, James's Prolific, and I find I have Peas every day. Of course, a second or third sowing can be made much on the same principle; it enables you to have a variety. You might sow only one kind, say Wonderful, and as one crop comes up put in another; but this is not so good, as I often found Peas sown a month later than others came in almost at the same time.—OLD INDIAN.

FRUIT.

SUMMER PRUNING FRUIT TREES.

Pinching Trained Trees—Pears and Apples.

THE object of pinching off the tips of shoots is to diminish their vigour; only those of a moderate strength can be converted into fruit twigs. As soon as the shoots of the year are about 6 in. long and have made six or seven well-developed leaves, not counting the rosette of small leaves at the base of the shoot, pinch off the extreme point of the shoot beyond the sixth or seventh leaf. If pinched shorter—say at three or four leaves—and there should happen to be no latent buds at the axis of the lower leaves of the shoot, which is a characteristic of certain Pear trees, such as the Beurré Diel, the Jargonelle, and the Doyennés, the shoot would be destroyed and a void left in its place, at least for a time; while, should there be buds at the axis of the lower leaves, pinching so short would be likely to develop these buds into so many anticipated shoots—the very buds which we desire to transform into fruit-buds—it being our object to obtain the fruit as close to the main branch as possible. Therefore, we say pinch the shoots when about 6 in. long, leaving from six to seven well-developed leaves. Shoots so treated will frequently produce an anticipated shoot from the axis of one of its last leaves. This shoot must be treated in much the same manner as the shoot from which it springs, pinching off its extreme point when about 4 in. long.

When more than one anticipated shoot is developed the primary shoot is shortened, so as only to leave one anticipated shoot upon it at any time. If any of the shoots may have escaped observation until they were more than 8 in. long, it will be too late to pinch. In this case cut the shoot off close to its base, leaving a small portion of the base about ⅛ in. long. Two shoots should presently be developed from latent eyes close to this base; remove the stronger and retain the weaker; it is likely to be well constituted for being formed into a fruit-bearing twig. It is important that the end of the mother branch from which all these productions spring should be kept growing. Never pinch the shoot which forms the continuation or prolongation of a branch; on the contrary, it must be favoured, and for this purpose, if necessary, turned upwards, to be cut down to one bud at winter pruning; if the branch has reached its determined limit, the same operation to be repeated yearly.

All strong shoots growing vertically from the upper surface of a branch trained horizontally are removed, as are the shoots in a corresponding position on a branch trained obliquely; they are cut back close to their bases, and from the latent eyes at the base are obtained weaker shoots, or shoots growing in a more lateral direction Strong shoots must be pinched longer than weak ones; also shoots on some varieties of Pears and Apples require to be left longer than those on others. According to this method trees will require continued attention all the

summer, but principally during the months of May and June. OMBU.

Air Roots on Vines.—What are known as air-roots on Vines are the root-like growths which push from the wood above ground. They generally appear in the greatest quantity near the spurs, and less frequently upon the clean wood or stem. They usually number from two to a dozen, or even more, sometimes coming in bunches, and sometimes in rows. They resemble earth roots in some respects, but they do not often divide into rootlets; they begin to grow with the rise of the sap, and continue growing until it descends again. All varieties of Vines are subject to them, and it is often said they do no harm, which may perhaps be correct so long as they are few and small; but there is reason to believe that where they occur to any great extent they at all events do no good. I was lately requested by an amateur to come and see his Vines, as he could not understand why he had no Grapes on them this season. I ascertained that for some years air roots had been annually increasing and the crops diminishing. This year they hang down over 1 ft. in length, and there is not a vestige of fruit on one of the Vines. There can be little doubt that these air roots have, in a great measure, brought this about, and if their influence in this case has been antagonistic to fertility, it may be assumed that they will always produce effects which will be more or less injurious in proportion to the frequency of their occurrence, for the nourishment which supports these roots, or other superfluous growths, is that which should properly go towards the formation of fruit-bearing wood. Air roots should, therefore, be regarded and treated as any other Vine disease. They are the production of an imperfect root action in the first place, and a damp atmosphere encourages their growth afterwards. Young Vines are not so liable to become affected as those that are middle-aged or old. Vines on which the berries shank generally form air roots; but they also occur on those that are quite free from this disease. Their growth is often very vigorous when the Vines are first started, especially if they are kept close; afterwards, when more air is admitted, their points get starved, and further growth ceases; where this is the case, they do not do so much harm as when they continue growing throughout the season; and this they always do if not checked in time. Cutting, or rubbing them off, when they are growing vigorously, does no good. The points do not start into growth when once broken; but a second batch is invariably pushed from the base of the first. It is as well to let those that do appear remain and grow until the end of the season, when they may be cut away with a sharp knife while pruning. Vines with their roots in borders which are damp, or in which all the fibre of the soil has decayed, generally produce plenty of air roots, as a close adhesive soil is not by any means conducive to the healthy development of any Vine. When air roots appear in quantity, no time should be allowed to pass without making an examination of the border. Fresh drainage, where necessary, must be resorted to; and a quantity of fibrous turf and lime rubbish is of service in sweetening the soil. After the border had been thus renewed, the atmosphere of the Vinery should be kept dry during the early growth of the Vines.—J. M.

Mulching Outdoor Strawberries.—Although this is generally done to keep the fruit clean, it in reality answers an even more important purpose, viz., that of keeping the ground moist and cool; and, with this twofold end in view, a good mulching of fresh stable litter should be put on not later than March, before the young foliage gets far advanced in growth. If roughly shaken over the beds, and regulated by hand round the crowns, it soon settles down, and the spring showers wash it quite clean before the fruit is ripe. If left until the Strawberries are in bloom, it is much more troublesome to apply, and in a dry season like the present the retention of moisture in the soil by retarding evaporation will go far to carry the crop on to a finish; and any supplies of liquid manure given during the early stages of growth will prove much more beneficial than in the case of exposed beds. Mulching is an operation which a few wet summers bring into disrepute, but in dry weather it has to be resorted to. For bush fruits I find it to be a most serviceable help; also for many kinds of vegetables, and for wall trees in particular; but in all these cases it is best applied in good time, before the soil has become dry. If not already applied, a good soaking of water in addition to the mulching will be found of great service to the trees; as, in addition to the protracted drought we have had, there has been an almost continuous arid wind that extracts moisture very rapidly if not counteracted by external coverings.—J. G. L.

Thinning Pears.—The only way to ensure full-sized specimens is to thin out early in the summer. With Apples, Pears, and Peaches, this thinning can be done in July, the smallest ones being pulled off, and the more advanced and perfect left. In orchard management I have often plucked off half of the Pears on the trees, literally covering the ground with partly-grown fruit. When gathering time came, what were left on would measure and weigh quite as much as if none were taken off, while their market value would be two-fold at least; I have known of cases when it would be four times as much, with no injury to the trees. There are some kinds of Pears that will be more responsive to thinning than others, and will pay liberally for the labour. Kinds that set thickly, like William, Louise Bonne of Jersey, Duchesse d'Angoulême, Belle Lucrative, and Doyenné Boussock, should always be thinned when the fruit is the size of a Walnut. When two Pears come close together one may be pulled off, and the remaining one, at the end of the season, will equal the two in size and be greatly superior in quality. High culture and careful thinning of Apples and Pears are the only sure roads to success.—P. D.

Melons Splitting.—There is no doubt that the splitting of Melons just before ripening proceeds from different causes. In a Melon pit here I used to have many fruit split, but at last I found out one of the causes of the evil, from which I have since been nearly free. When the fruits hanging from the trellis began to get heavy they were supported by a thin, square bit of wood, suspended by wires fixed at each corner to the trellis. Owing to the fruits resting on their ends on this piece of timber when the plants were syringed, the water lodged between the board and the fruit, and caused them to split just at the end. Now the syringing is given over before the ripening process takes place, and the fruits, being placed on their sides on the boards, never split as they used to do. —W. T.

Cereus candicans; flowers white.

HERBACEOUS PÆONIES.

FOR nearly a month our garden borders have been enlivened with the beautiful and showy blooms of the herbaceous Pæony. Planted among Conifers, flowering shrubs, and ornamental trees, their gay-coloured flowers produce a charming effect. On our grounds we have a border, 200 ft. in length and 15 ft. in width, which contains a choice collection of ornamental trees, conifers, shrubs, Roses, Pæonies, and hardy border plants. The tall-growing trees and evergreens form the background; the shrubs and trees of medium size come next; with the Pæonies, Roses, and border plants in the foreground. The assortment of Pæonies when in flower is undoubtedly the most interesting feature of the collection.

In our nursery grounds a large circular bed about 20 ft. in diameter, planted with the most showy and distinct varieties, has, during these beautiful sunny days, attracted great attention. It is surprising that so noble a flower, almost rivalling the Rose in brilliancy of colour and perfection of bloom and the Rhododendron in stately growth, should be so neglected. Amateurs seem to have entirely lost sight of the many improved varieties introduced within the last few years, and our finest gardens, perfect in other respects, are singularly deficient in specimens of the newer kinds. In the hope of popularising to some extent this valuable class of plants, I will briefly refer to their many desirable characteristics of growth and flower, and at the same time furnish the names of a few choice sorts.

The first point in their favour is hardiness. It may be truly said of them that they are "hardy as an Oak." In the severest climates the plants require no other protection than that which they afford themselves. Then their vigorous habit and healthy growth, freedom from all diseases and insects, are important arguments in favour of their cultivation. Growers of Roses know well that their flowers are obtained by great vigilance and care. Not so with Pæonies, with which when once planted all is done. Each succeeding year adds to their size and beauty. The foliage is rich and glossy and of a beautiful deep-green colour, thus rendering the plants very ornamental even when out of flower.

The newer varieties produce very large, handsome, regularly-formed cupped blooms, resembling large Roses. The Pæony may be planted either singly on the lawn or in borders. Where the lawn is extensive a large bed makes a grand show, almost equal to a bed of Rhododendrons. The following are six of the best and most distinct kinds:—Modeste, deep rose, very large, cupped like a Rose; Delachii, dark purplish-crimson, the best dark variety; Ambroise Verschaffelt, purplish-crimson, very full, fragrant;

Papilionaceæ, white, superb large flower; Humei, deep rose with purple shade, very full and double, one of the latest in bloom; Whittleji, white centre, slightly yellowish, fragrant. For a dozen add the following:—Chas. Verdier, lilac-rose, of perfect form, cupped; Monsieur Boucharlat, bright rosy-lilac, large, full, fragrant, and very late; Dr. Bretonneau, rosy-violet, large and of fine shape; fulgida, crimson, profuse flowering; delicatissima, flesh colour, delicate and beautiful; Festiva, pure white, with a few marks of carmine in the centre. Early-flowering varieties—tenuifolia, single dark crimson, leaves beautifully cut; rosea, double crimson at first, changing to rose, beautiful; and pulcherrima plena, crimson, with purple shade. —W. C. BARRY, in *Brief Essays*.

Climbers.—Roses, Clematis, Honeysuckles, and other plants of a similar character covering walls, will, as they make growth, require nailing, tying to wires, or securing in some way; but do not allow the shoots to grow too long before this is done, or they are certain to get broken or chafed by the wind, and it is the more necessary to attend well to this in the case of any that have not yet covered their allotted space. It frequently happens that plants intended to cover walls, however desirable it is that the object should be accomplished with as little delay as possible, do not receive sufficient water in dry summer weather; even when enough rain falls to moisten the soil sufficiently where it is open, it does not always reach the roots of plants so situated, especially where the walls are high. In such cases good soakings of water should be given when it is dry. The blooming of Roses that cover large spaces on walls is often of very short duration, on account of the deficiency of moisture at the roots, and not only is the flowering affected, but the foliage is scanty, and becomes a prey to aphides and red spider; the use of the garden-engine or syringe is here indispensable, as the leaves, from their position, receive little benefit from being washed with the rains. As the first flowers of the Hybrid Perpetual section are over they should at once be removed, or they will seriously interfere with the later blooming. Keep the foliage clean and healthy by repeated use of the syringe; this will greatly assist them in producing flowers through the season.

Perennial Larkspurs.—When in suitable soil these throw up strong shoots and splendid spikes of flowers, which are remarkably showy during June, July, August, and September. The tallest are well adapted for forming back lines to mixed borders, while the dwarfer growing sorts come to the front, and, by judiciously arranging the colours, a pleasing effect may thus be obtained. Beds of Larkspurs are also very effective, the tall growing sorts being in the middle and the dwarfer ones on the outside. They vary also in time of flowering, some being early, others late, and so a succession may be had through a considerable period. In height, Larkspurs vary from 1 ft. to 6 ft., and the colours include bright scarlet, as in Delphinium nudicaule, pure white, pale lavender, and every shade of blue, from clear azure to deep indigo and almost black. Some have pure white, others brown and black centres. The flowers vary considerably in form and size, and the varieties include single, semi-double, and perfectly double imbricated flowers, and the flower spikes vary in length from 1 ft. to 3 ft. All are perfectly hardy, and may be cultivated in any ordinary garden soil. A deep good loam suits the Larkspur well, especially if assisted by occasional dressings of manure and leaf soil, which should be placed on the beds as a top-dressing early in spring, and forked in during April. If I were preparing a piece of ground for a plantation of Larkspurs, I should deeply trench and well pulverise it, giving a good dressing of manure as the work proceeded; and, previous to planting, a good dressing of leaf-mould, forked in and mixed with the top spit, would be of service. In the case of soils that are tenacious and wet, thorough drainage must be resorted to. Depth of soil is of great importance in the culture of the majority of herbaceous plants. If shallow, and lying on a hard sub-soil, their bloom will be comparatively poor and short-lived, especially in dry seasons and localities. Some recommend Larkspurs to be lifted annually; but if a top-dressing be supplied in spring, moving once in three or four years will be enough. The plants may be divided at lifting time in order to increase the stock, but no roots should be divided till they are strong. If a few side shoots be taken away in the autumn, and potted in some fine rich soil, and kept in a cold frame during winter, they will root readily; or if taken off early in spring and put into a slight bottom-heat, the cuttings soon make roots, and grow into plants that flower at midsummer or soon after. These Larkspurs supply hues of blue not found in other plants, and when well grown have a fine effect.—O. U.

Violets for Winter Blooming.—We have at present a row of Czar Violet in patches at the bottom of a south wall. These flower freely and long in spring and early summer. The runners are chopped off with a spade several times during the season to keep the shoots vigorous, which get a good size in a single season, and about November and onwards we take up a number of patches at a time, pot them in 8-in. pots, and put them into the Vineries or anywhere convenient where there is a gentle heat. Thus treated, flowers quickly make their appearance, large and sweetly scented; and, though the plants do not continue to bloom for a very long time, we have plenty of them to fall back upon, and therefore introduce another batch.—S. W.

Hints on Pruning.—No subject is of greater importance to gardeners and those who are amateurs than that of pruning. I shall not accuse gardeners of ignorance, for to do so would be akin to pedantry; but I must say many of our gardens are wholly spoiled by the wholesale use of the lopping-knife and pruning-scissors. If there is a vice in the art of gardening, it is that of stumping all things, from a Pansy to a Pear tree. Half the fruit and flowers of our gardens are destroyed by that insatiable thirst for show; and in order to bring one Pear to extraordinary size—or a Gooseberry, for example—the whole crop is sacrificed on a tree. I do not believe in allowing trees or shrubs to run wild—far from it; but I ask, is modern gardening at all calculated to increase the produce of fruit trees? I say, no. My garden has been spoiled for years by the vicious system of over-pruning; and many of my trees are standing objects of such treatment. My advice, if it is at all of use, grounded as it is upon experience, is not to prune excessively; and above all things do not let the so-called professional gardeners spoil your fruit trees. They only want mild treatment; and if any of your readers will only look at old orchards, Nature, by lopping off branches, does the pruning herself, and supplies us with an abundant fruit harvest. If gardeners only exercised common sense, they would not spoil our gardens as they do now. Cottagers get three times as much produce as we, who habitually are compelled to employ professionals because we cannot do the work ourselves, and cannot always superintend. My remarks must not be construed as those of outspoken censure, but plainly as a kind of admonition, given in a friendly spirit, and which should be accepted as kindly advice.—HENRY BROWN, *Northallerton*.

How to keep Birds off Small Fruits.—Small and cheap fireworks—squibs and, better still, crackers—have been found very efficacious aids in my garden in the season of small fruits. Though we use nets freely there is much that cannot be so guarded; and as birds have always reared their young and ceased singing by the time Strawberries, Currants, and Raspberries ripen, we drive them away by crackers and squibs, discharged early in the morning at intervals, and again in the afternoon. The birds betake themselves to the Turnip and Potato fields to feed upon the slugs there, as they were allowed to do in the garden previously, which is consequently never injured by those slimy visitants. It is hardly necessary to say that sparrows may be scared just as easily by squibs and crackers, which lie smouldering and emitting an alarming scent of gunpowder long after the explosions have ceased.—R. C. E.

Destroying Gooseberry Caterpillars.—I have adopted the following method of getting rid of this pest for twenty years, and never knew it to fail. To half-a-pound of white hellebore powder add about twelve quarts of water, and mix them well. Take the syringe, with the jet end on, draw it full of the water and powder mixed, and force it out into the bottom of the can, making the water and powder boil up, as it were; again draw the syringe full whilst the liquid is in motion, and, with your finger on the end of the jet, thoroughly damp over every part of the tree affected. If the pest has made headway, a second application is sometimes necessary. It is best to apply the mixture on a quiet, still night. About a week after, damp all the trees with clean water should the weather be dry. Let them remain for half an hour or so, to loosen the powder on the leaves and fruit, and then give them a brisk syringing, which will leave them quite free from both caterpillars and powder.—J. S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

June 28.—Sowing Canadian Wonder and Long-podded Negro French Beans; pricking off seedling Violas; planting out Ten-week Stocks and Asters; thinning out Spinach and Turnips; stopping and nailing in shoots of Tomatoes; taking up early Ash-leaf Kidney Potatoes and spreading them out in the sun to ripen well for early crops next season; mulching Morello Cherries and watering them; potting Thyrsacanthus, Poinsettias, double Wallflowers, and Amarantus; planting verandah boxes with Stocks; putting out main crop of Celery, Chilies, and Chervil; putting in cuttings of Poinsettias, staking Carnations, and removing superfluous shoots from espalier Pear trees; earthing up Brussels Sprouts.

June 29.—Sowing Early Horn Carrots and red and white Turnip Radishes; potting off herbaceous Calceolarias, Primulas, and Cinerarias; mulching late Peas with rotten manure and well watering them; thinning out Chicory, Dandelion, Salsafy, and Scorzonera; planting out Lettuces and Endive; also Marjoram and Sweet Basil; watering all newly-planted Broccoli and Brussels Sprouts; taking nets off early Cherries and putting them over Currant bushes to protect them from birds; turning over gravel walks where covered with Moss, to give them a fresh appearance; potting Victoria Stocks, and putting winter Carnations into their flowering pots; sowing Campanula seeds, Parsley and Intermediate Stocks; planting May-sown Lettuce and Snow's White Broccoli; putting Heliotrope cuttings to make plants for winter flowering; digging land for late Peas and Broccoli; putting Amaryllis in sun to ripen their bulbs.

June 30.—Sowing All the Year Round, the Favourite, and Giant White Cos Lettuces; also Green-curled and Batavian Endive; potting first batch of Strawberries for forcing; planting out Celery and Cardoons; giving Asparagus beds a light dressing of salt; mulching and watering Peach trees on walls; staking Peas and getting them earthed up; thinning Early Horn Carrots; planting Autumn Giant Cauliflower and Savoys; taking up Hyacinth bulbs and drying and storing them; nailing in Peach, Plum and Pear tree shoots; thinning Turnips.

July 1.—Sowing Omega and Ne Plus Ultra Peas; potting on small plants of Dracænas and Pandanus Veitchi for table use; planting out Cauliflowers and late Broccoli; giving early Celery a little earthing, also Leeks; clearing off Cauliflower stumps, manuring the ground, and getting it dug up ready for other crops.

July 2.—Sowing Early Snowball and American Strap-leaf Turnips; planting out a four-light pit with Tender and True Cucumbers; sticking late-sown Scarlet Runner Beans; forking and Dutch-hoeing amongst all growing crops; salting walks to keep down weeds; putting Chrysanthemums into their flowering pots, and potting young Heliotropes and scarlet Pelargoniums; re-potting Canterbury Bells and Intermediate Stocks.

July 3.—Sowing late crop of Broad Beans; also Mignonette for autumn flowering; putting in cuttings of choice Pelargoniums; potting on Balsams; drawing drills for Turnips, and well watering them previous to sowing; renovating linings round all manure frames; nailing in leading shoots on Apricot and Plum trees; giving Peach trees in early house a good washing with soft soap, sulphur and Quassia-chip water, to keep down insects; potting Selaginellas for conservatory decoration, and putting young Vines into 10-in. pots; planting a border with Ten-week Stocks and Asters; looking over Gooseberry bushes and destroying caterpillars; putting all spring-flowering bulbs that are dried off into hampers and storing them away in a cool place; hoeing among Onions, Carrots, and Beetroot.

Hardy Flowers.

Carnations and Picotees.—It is necessary to devote careful attention to these just now, as any check to their growth would be fatal to the development of full-sized, well-marked flowers. Tree Carnations now making good growth must be shifted into larger pots as they require it. The largest plants may be permitted to flower in 8-in. pots, and smaller plants do well in 6-in. and 7-in. ones. What they require to grow in is good turfy loam, well enriched with rotten stable manure and crushed bones, and they must be well supplied with water at the roots all through the growing season. At present they succeed best out-of-doors; the pots should be placed on a hard bottom, in order to prevent worms from getting through. Never at any time use manure water; the only time when

this is useful is when the plants have become exhausted from flowering freely.

Pinks.—This is now the best time to put in pipings. The smallest growths strike root most freely, and if the weather is dull and showery at the time when they are taken off, they may be put in in a shady position quite in the open ground. It is rather more difficult to propagate the Pink in the south than in the north, and in dry sunny weather it is best to place the pipings in boxes, and to strike them on a very mild hotbed. They must be shaded from the sun until roots are formed.

Pansies.—It is a good plan to put in some cuttings now to form a late autumn bed. If it is intended to have good flowers for an exhibition or other purpose on a given date, pinch off all the flowers that are open or nearly so—indeed, even buds that are showing colour—about a fortnight before the date on which they are required. No flower degenerates more rapidly than Pansies, and the only way to maintain them in good condition is to occasionally denude them of flowers and apply surface-dressings to the beds.

Phloxes in Pots.—The utility of these for conservatory decoration has already been alluded to, and they must now be well attended to, in order to have them very strong at the time of flowering. The Phlox is a gross feeder, and absorbs an enormous quantity of rich stimulants, either in the way of surface-dressing or manure water, not too strong. Tie the growths to stout sticks as they advance, and place the plants where they can obtain plenty of light and air.

Asters and Stocks.—Successional plants of these may be planted out, and by putting in a later batch the bloom may be kept up further in the season. Asters, especially, are so useful for cutting, that it is desirable to have them as late as they can be had.

Gladioli.—If hot dry weather should set in immediately mulch the beds with rotten manure, and apply water freely if thought needful. It is also necessary to place sticks to the plants in the earliest stages of the spikes, as the broad leaves are much acted upon by gales of wind, and if the roots get loosened the plants soon fall over.

Tulips.—The roots of these ought to be lifted at once and stored in a dry place until planting time. Regular Tulip growers have drawers fitted with boxes, divided into compartments, into which each variety is placed and numbered. We simply lift the roots and clean them, placing each variety in a small flower-pot, which is stored in a dry loft, and thus managed they keep in good condition until planting time.

Ferns.

There is certainly no season of the year when Fern houses have a more beautiful appearance than at present, when the different tints of the young green fronds are in most cases developed. Everything possible should be done that will tend to preserve them in good condition. Unless these plants be free from mealy bug, scale, and thrips, it is impossible to keep them in a satisfactory state all through the year; the two former, from their glutinous excretions, to which the slightest dust adheres, soon causes the fronds to look black and dirty; and the thrips, though easier to kill, not only disfigure the fronds, but also cause them to die off prematurely. The fronds will not be in a state now to bear a strong enough application of any insecticide to kill scale and bug, and these should be sought for and removed by sponging. Tobacco water is the safest remedy for the thrips. Any plants in small pots or tubs, particularly of the Tree species, will be much assisted by frequent applications of manure water moderately strong. Where a large collection is planted out, it is necessary at this time of the year to see that the strong growers do not encroach upon the weaker ones; this can be effected by cutting the older fronds away freely, which will at once reduce the size of those that are to come. The advantage of this during the season of growth, when replanting cannot be carried out, will be obvious.

Fruit.

Vines.—When Grape-thinning has been brought to a close, the main requirement will be to keep the lateral growths well stopped back, in order to prevent overcrowding. Should there be no danger of this through the Vines being at long distances apart, then allow the laterals to grow till such danger appears. Inside borders of Vines swelling their fruit will take any amount of manure water, and, as soon as applied, the borders should be mulched with 2 in. or 3 in. of fresh stable litter in order to retain the moisture and supply the atmosphere with ammonia. More than this quantity would prove too powerful and injure the foliage. Ventilate freely in the early part of the day and shut up early in the afternoon, making free use of water to engender atmospheric humidity; give a little air at 7 p.m., and leave it on all night. Grapes that are ripe or ripening cannot have too much air, unless the wind prove exceptionally harsh, which is rarely the case at this time of the year. Usually all atmospheric moisture is recommended to be withdrawn when colouring begins, but we have come to regard a moderate amount as beneficial, inasmuch as it prevents an undue development of red spider should that pest have gained a footing. Pot Vines intended for early forcing next year should now have completed their growth, which will now, as it were, require to be consolidated and ripened by the fullest exposure possible to light and sunshine. Keep lateral growths closely pinched, but the main shoot may still be allowed to grow on unrestrictedly. The plants should still have abundant supplies of root moisture.

Strawberries.—The forcing of these is barely over, and yet preparation must forthwith be made for that of another season. We always layer our first Strawberries in 5-in. pots, in which they are allowed to fruit, and which they do much better than those layered at the same time in larger pots, the reason being that the pots get sooner crowded with roots, and this induces earlier ripening of the crowns, which, as a matter of course, must fruit earlier than they otherwise would do, and as they are forced at a dull and sunless period of the year, no inconvenience arises from their requiring to be watered oftener than those in larger pots. We layer the general stock in 3-in. pots, and as soon as the roots reach the sides of the pot we shift into 6-in. pots. The best soil is moderately stiff loam without any admixture, except a small proportion of bone-dust or horn shavings. Careful crocking, to admit of free drainage, is imperative, as is also firm potting. After potting place the plants in an open position, well supply them with water, and keep all runners picked off as soon as they are produced.

Peaches and Nectarines.—Go over these out-of-doors, and if the fruit is still too thick remove more, as also superfluous shoots, but on no account take away too much leaf, for in the season this is worse in its effects upon the trees than the opposite extreme of neglecting to disbud them. Continue to use the garden engine or syringe two or three times a week, wetting the under sides of the leaves. If this is attended to little injury will be done by thrips and red spider, the worst enemies these fruits are affected by, and which not only materially injure the present crop, but weaken the trees, thereby seriously affecting them in after years. These fruits will be benefited by mulching the ground with half-rotten manure. This is easily applied where the borders are not cropped with anything over the roots.

Keep the hoe at work amongst bush fruits, so as to destroy weeds as they appear. It sometimes happens that there is negligence in this respect, under the impression that the bushes do not suffer from the presence of weeds as culinary vegetable crops do. So far as intermediate effects go this may be the case, but, wherever they are allowed to grow, they exhaust the soil much more than ordinary cultivated plants do; and to let any part of a garden become foul is simply a direct waste of the manure used, of which even bush fruit stand in need, although not to the same extent as vegetables. It is well to observe that if any portion of their garden, however small, be allowed to become a nursery for weeds, the seeds will be scattered by the wind in all directions, and will cause endless trouble afterwards, whilst the pleasure derived from the appearance alone of an orderly, well-kept garden is worth consideration and all the care that can be bestowed upon it.

Vegetables.

It frequently happens that at the time of preparing the ground there may have been a scarcity of manure, of which some crops have not received a sufficient quantity. Where this has been the case, make up the deficiency by the timely application of liquid manure. This should take place at the middle stages of growth after the plants have taken a fair hold of the soil and are growing away freely, and when strength will be imparted at the time it is most required. It is, however, necessary to be cautious in the use of manure water; it must not be applied too strong, for plants, unlike animals, have not the power of rejecting the food that is given them, which in a liquid state goes direct to the roots, and is of necessity absorbed by them, even if their destruction be the result. If manure of a solid character—such, for instance, as that of fowls in a crude state, or guano that is lumpy and insufficiently broken—be dug into the soil, the case is somewhat different; the roots will not enter it, but will run in other directions to escape, as it were, the dangerous diet set before them. A little reflection upon the nature of the particular plant to which manure water is to be applied will, in a great measure, be a safer guide as to the strength of the solution it is able to bear. As a rule, rampant-growing subjects will stand a much stronger mixture than weak growers—Rhubarb, for instance, being benefited by it at a strength that would injure Peas. Runner Beans may receive it stronger than the weaker-growing dwarf varieties; but in all cases it is better to be on the safe side, and rather make the solution too weak than too strong.

Parsley.—A little Parsley should now be sown on well-prepared rich ground; sow in rows 15 in. apart. This will not be disposed to run to seed so soon in the spring as that which was put in earlier. Thin out the early-sown plants, leaving them 9 in. or 10 in. asunder. If this is attended to, in time there will be little to fear from canker at the root, which usually occurs when the plants are overcrowded. When Parsley is given sufficient room it can be kept through the winter with half the trouble and much greater certainty than where it is starved and weakly.

GLASSHOUSES & FRAMES.

LOBELIAS FOR WINTER FLOWERING.

I WOULD call attention to the fact that the bedding varieties of Lobelia form excellent subjects for the embellishment of the conservatory or cool greenhouse during the late autumn and early winter months. When the outdoor season for flowers is past, anything in the shape of bloom is welcome, and the fact of there being a scarcity of blue flowering plants at that time of year renders the Lobelia especially valuable. Not only does it form a pleasing contrast to the other flowering inmates of the structure, but the individual blooms, when mounted up in small clusters and surrounded with appropriate foliage, may be employed with good effect in the formation of hand bouquets. Where the Lobelia is much employed for bedding-out there generally remains a surplus stock of plants, which, if potted at once into 6-in. pots, will in the course of the summer grow into good specimens. Pot them in a free, rather rich compost, and plunge the pots up to the rims in an open sunny situation. About the middle of August cut all the blooming shoots off. As soon as the plants break again administer manure water twice a week, and by housing-time fine masses of foliage will have formed, capable of producing continuously up to Christmas a quantity of fine blooms. The effect of these masses of blue when seen in combination with other plants is very good. When the plants have done blooming they should be cut over and placed in a light situation in a cool structure.

If they consist of named varieties which it is desired to propagate, they will, if introduced into gentle warmth about the middle of January, furnish a quantity of sturdy, healthy cuttings. Such plants as may not be needed for this purpose should be shifted by the beginning of February into 8-in. pots, to be placed in a warm house near the glass, and brought along into bloom at an early date; or they may be kept in a cool house. These large specimens, coming into bloom as they do at an early period of the year, really produce a grand effect. If well and liberally treated, the foliage droops down and partially clothes the sides of the pot, in which conditio

they are especially well adapted for furnishing small vases, jardinières, &c. Where it is desired to create an immediate and brilliant effect in the flower garden, such specially-grown specimens will prove of great service. A collection of varieties, well grown in early spring, carefully hardened off and planted out at the same time as the ordinary run of bedding plants, and placed in the open air, would form a telling feature at a time when small plants had scarcely commenced to grow away freely. Those who may not have plants to spare might sow seed, and put three or four good healthy young plants in a 6-in. pot. J. C.

Campanulas for Growing in Pots.—The dwarf perennial Campanulas merit much more attention than they commonly receive. Equally pleasing either in pots or borders, they are especially useful for the former on account of their neat, dwarf, compact habit and portability. My collection is not a large one, but it includes several very fine kinds, of which C. turbinata is the chief parent, and some of the smaller but hardly less effective sorts. These Campanulas are eminently summer-blooming plants, and therefore need no house protection; they thrive well in large pots, and are especially suited for a large vase until the bloom is over. One of the most pleasing kinds, and specially useful as a vase plant, is the semi-trailing C. Barrelieri; small plants of this planted close up to the side of a vase would make a pretty edging for some of the white sorts, such as C. pumila alba and Henderson's White, both possessing great purity of colour, and being free bloomers. These Campanulas may be readily propagated either by division of the roots early in the year, or by cuttings made of the young growth when about 2 in. in length. If these be taken off with a sharp knife just beneath the mould, and be placed in sandy soil in a cool house or frame and shaded for a few days, they will soon become rooted, and make good flowering plants the same season. Perhaps the earliest is the well-known Campanula garganica, a dwarf and slightly-spreading kind. Its foliage is rounded and somewhat laciniated, its flower-stalks about 6 in. in height, and bearing a great profusion of small pale blue bells with curved lips. This variety generally blooms in June. Next comes the pretty pure white C. pumila alba, which is even more dwarf than the preceding, and produces in great abundance flower-stems 6 in. or so in height, bearing many pure white bells: this is a real gem. C. turbinata is the parent of several kinds, and is itself a variety of great value. In habit it is exceedingly dwarf and dense, the foliage not reaching a greater height than from 2 in. to 3 in. The flower-stems do not exceed 4 in. in length, and are surmounted by large erect bells of a bluish-purple colour about 1½ in. in diameter. Well-established plants of it flower freely. C. turbinata hybrida has a dense, but more robust growth; its flowers are borne in great abundance on stems 9 in. in length. They are about the size of those of C. turbinata, but are rather more expanded and slightly paler in colour. C. turbinata macrocarpa has larger foliage of a pale green hue; its flowers, too, are larger than those of the preceding kind; they are borne on stems 12 in. in height, and are in colour intermediate between the above two sorts. C. turbinata cœrulea has a close, robust habit, with flowers the size of those of C. turbinata, opening white, and deepening to a pale mauve; they are borne on erect stems, from 7 in. to 8 in. in height; it is a very pleasing kind. C. turbinata floribunda is a very pale blue form of C. macrocarpa, not quite so robust, but a perfectly distinct kind. C. turbinata Dicksoni is a very beautiful variety, moderately robust in growth, and has large, almost pure white flowers, borne on stalks 9 in. in height; a very effective kind. C. Hendersoni alba has a neat, erect growth, and pure white flowers of medium size, borne on stems about 10 in. in height; a very charming variety. All Campanulas of the turbinata section produce upturned bells on erect or nearly erect stems. Last of the collection is the pretty C. Barrelieri, the latest to flower, coming in about a week after C. turbinata. It has a dwarf creeping habit, producing medium-sized, mauve-coloured bells in great abundance, and admirably adapted for vases or hanging-baskets.—A.

Fuchsia fulgens.—Just now we have several very fine specimens of this plant in full flower, and I certainly think this is one of the best of the Fuchsias a person can grow. The flowers are produced in bunches at the end of the shoots, and are about 2 in. in length, of the most brilliant scarlet, while the petals are of a much darker hue. The leaves are very large, and when fresh of a bronze shade, gradually becoming a light green. This Fuchsia flowers freely; it is easily grown, and should be in every greenhouse.—W. A. G.

BEGONIA SCHMIDTI.

THIS is a species which has been named by Dr. Regel, of St. Petersburg, in compliment to Mr. Schmidt, of the firm of Haage & Schmidt, of Erfurt. It grows about 1 ft. high, and is of a half shrubby habit, with rather slender branches, which in June and July are covered with a profusion of white and rose-tinted flowers. Its leaves, which are rather small and hairy beneath, are of a dark metallic-green above, and the branches and stems have a reddish tinge. Messrs. Haage & Schmidt remark—"The longer we grow it the better we like it, for the plants which were raised in July, 1878, from seed began flowering in March, 1879, and since that time they have not ceased to bear flowers, not only a few single ones, but rich trusses of very graceful pale pink blooms, which will be much valued for cutting when it becomes better known." It is

Begonia Schmidti; showing habit of plant.

a kind which will doubtless find favour among owners of small greenhouses and window gardens. It can doubtless now be easily obtained at any good London nursery.

MIGNONETTE IN WINTER AND SPRING.

IT is needless that I should dwell upon the merits of the Mignonette. The fragrance which the flowers exhale is of such a sweet and refreshing nature as to render the presence of the lowly, unassuming plant almost indispensable in gardens, large or small. There are few who do not attempt the culture of this fragrant flower during the summer season; but from what I have observed I am inclined to believe that comparatively few make the attempt to secure a supply of it at that period of the year when its grateful perfume would be doubly welcome. There is really little more trouble in producing good Mignonette during the winter months than at any other season of the year; it is a question of sowing seasonably, the after treatment presenting no more difficulties than that accorded to the ordinary run of bedding plants. Amateurs and growers generally who may possess but the convenience of a small greenhouse may rest assured that they need no further accommodation for the growth of Mignonette in the winter season. Even those who have only a cold frame may undertake its culture with a fair prospect of success, provided that frost can be excluded, and that strict attention is paid to cleanliness. Damp is a great enemy to the Mignonette; consequently, those who winter it in cold frames must exercise much more vigilance than is necessary when the pots stand upon a shelf in a light airy house. There is one fact which must be borne in mind, and that is, that the Mignonette does not bear transplanting well; consequently, the seed should be sown in the pots where the plants are intended to bloom. The Mignonette also, though rejoicing in a rich compost, dislikes, and never thrives kindly in, soils of a retentive nature. The French market growers, who grow their plants remarkably well, make an almost exclusive use of decayed manure, some four years old, and which has been well turned and sweetened by frost and sun. The Mignonette roots with great freedom in this compost, and attains great luxuriance of foliage, with correspondingly fine heads of flowers. For spring-grown plants I would advise the employment of such a rich mould.

When the functions of the plant are active and the soil dries out quickly, there is but little danger of its becoming sour. In the winter season, on the contrary, unless very careful watering is practised, the roots are apt to become torpid, and the foliage turns yellow. I would, therefore, prefer a compost which might be relied on to remain in a sweet condition, even if somewhat deficient in nutritive properties. A mixture consisting of half leaf-mould and half loam and decayed manure in equal proportions, adding thereto a goodly portion of silver-sand, will, if all the ingredients are in a sweet condition and well incorporated with each other, and if ordinary care is exercised in watering, suffice to form an excellent and safe-rooting medium. I should advise that pots not larger than 4½ in. across be employed. They should be well drained and the soil shaken down firmly—not pressing it down, however, with the fingers, and making the surface firm and level. The first sowing may be made about the latter end of August. The plants from this sowing will be in full bloom about the time when flowers in the open air will have become scarce. It is a good plan, where cut flowers are in much request, to sow a good number of pots at this time, and in the first week in September. As soon as the first frosts arrive they may be sheltered in an orchard house or some such place, and will furnish an abundance of bloom during the late autumn and early winter months. Successive sowings, made weekly during September up to the first week in October, will keep up the supply, the plants of the last two sowings coming, as a rule, into bloom early in the spring. As soon as the plants are fairly up, thin them out to three or four in each pot, with the exception of the two latter sowings, which may be left rather thicker. Place the pots in a sunny situation, attend carefully to watering—encourage them, in fact, to make sturdy, robust growth—and allow them to remain in the open air until the advent of frost or inclement weather, when they should be placed in a cold frame, so that heavy rains may be warded off. About the last week in October is the proper time for placing the plants in their winter quarters, the best place being a shelf, where they get the advantage of every ray of light, and where they at the same time enjoy a free circulation of air around them on all favourable occasions. Thus situated, the foliage will retain its verdure, and the flower leaves will develop satisfactorily. On no account should artificial heat be resorted to to hasten its progress. The house must be kept quite cool, ventilating freely on all favourable opportunities.

The Mignonette is subject to the attacks of an enemy which, if not destroyed in time, will in the course of a few days completely ruin the plants. This is the larva of a moth, the eggs of which are deposited before the plants are housed, and, being of much the same colour as the foliage, is not easily perceptible until it attains large dimensions. Where the slightest trace of disfigurement is observable the plant should be at once examined, and the culprits will be found concealed on the under surface of the leaves. If the convenience of a light warm house exists, those plants which were raised too late to admit of their flowering in the winter may be placed therein about the beginning of February. They will give a certain amount of bloom, maintaining a supply until the spring-sown plants come into flower. For the spring forcing of Mignonette nothing is equal to a light pit, where the tops may be plunged quite to their rims in leaves or tan. There, in the enjoyment of the

necessary conditions of light, air, heat, and moisture, the plants develop healthy luxuriant foliage, and flowers of the finest quality are formed.

There is a vast amount of difference between a well-grown pot of Mignonette and one which has not received the proper treatment. A perfect specimen should be clothed quite to the rim of the pot with broad green leaves; the growth should be vigorous, yet compact and dwarf, and the flower-spikes should be broad and of good substance. This perfection of growth is only attained when the plants make an unchecked growth, and never know the need of food. As soon, therefore, as the roots touch the sides of the pots, regular waterings of weak manure water should be given. The Mignonette is naturally a free-growing subject, delighting in an unrestrained root-run in generous soil; but, like many annuals, if once the wood becomes dry and hard no amount of good treatment will induce it to make free growth again. A free rich soil, with plenty of moisture, both at the root and atmospheric, are the conditions essential to the successful culture of the Mignonette during the spring months.

J. C. B.

CULTURE OF AZALEAS.

THE Indian Azalea (A. indica) is one of the best hard-wooded plant that an amateur can grow. When once good plants are obtained they give little trouble, require very little heat in winter, and never fail to produce a sheet of blossom in spring and early summer.

General Cultivation.—In regard to the general cultivation of these plants, any that it is desired to get up to a useful flowering size as quickly as possible should at once receive a shift into larger pots, and be placed where they can obtain a little shade with gentle moist heat to urge them on. In potting, make choice of good tough, fibry peat, and see that is in proper condition for use, which is rather on the dry side than otherwise, and then it will admit of being rammed firmly around the old balls without danger of rendering it close and pasty; mix with it a sufficient quantity of sharp silver sand to keep it open and porous. As Azaleas require liberal supplies of water when growing, efficient drainage is the first consideration; but this should in no case be carried to excess, as from 1 in. to 1½ in. of finely-broken crocks is ample, and all beyond that is needless, and occupies room that should contain food for the roots. It often occurs in potting plants of this class that the ball is dry in the middle, and when that is the case it is seldom, if ever, it can be properly wetted through afterwards; and therefore if any doubt exist as to their condition in this respect it is advisable to immerse them for a few hours previously in a tub of water, afterwards standing them to drain. By this treatment, and keeping the balls in a healthy, moist state before potting, the necessity of watering before they get hold of the fresh soil is obviated, which is a great advantage, as it is otherwise apt to become sour from the repeated requisite wettings for the plants. In order to keep them in a free-growing state during the summer, the house or frame in which they are grown should be shut up early in the afternoon, and have a good heavy syringing, so as to wet both the upper and under portions of foliage. As the object is to fill the pots with roots, and to develop the plant in a short space of time, the flower-buds ought to be nipped out, when the shoots will start again; but in no case should any of these be stopped unless they appear unduly strong and are robbing the remainder; and even in that case it is better to bend them down, so as to check the flow of sap and divert it elsewhere, for with a frame or foundation thus laid it is an easy matter to furnish or fill it up after. By the end of September discontinue the syringing, and keep the plants in a temperature of about 40° by night till the beginning of March, when the same course of treatment may be again pursued till the plants have obtained the desired size.

Treatment after Flowering.—In respect to old plants that have done flowering, the first thing to be done is to pick off all the seed-pods. Small and unimportant as these may appear, there is nothing so exhausting to the plants as seed-bearing; and therefore it is of the greatest importance that they should be removed immediately the flowers fall, that the whole energies of the plants may be concentrated on the growth of young wood and in the production of bloom-buds. In the case of those already in pots as large as it is desirable to have them, they may be greatly assisted by giving them an occasional watering with weak liquid manure made from the droppings of deer, sheep, or cows; but whenever this is used it must be perfectly clear, or it will seal up the surface of the soil and render it impervious to air, which will soon throw the plants out of health. Another way of limiting the size of the plants to the pots and keeping them in good condition after they have exhausted the soil is to cut away a good portion of the old ball equally all round and re-pot in the same size again. This may appear an extreme measure to adopt, but Azaleas do not resent it in the least; indeed, after they have attained a certain age, and under the above conditions, they are considerably benefited thereby, and with such treatment old plants may be kept for many years in perfect health and vigour. When this course is adopted it should be done early in the season, just as they begin to grow, when the formation of fresh root-fibre and young wood and foliage will go on simultaneously. After this treatment keep the plants heavily syringed and shaded, and in a house where they can be kept close for a time till they fairly start. It is surprising the amount of heat Azaleas will stand and enjoy while making their growth and setting their flower-buds, provided the moisture they receive is in proportion; and it is from lack of these two essentials that we so frequently see the flowers so diminutive in size, as the buds do not receive the proper amount of assistance to develop them fully before winter sets in. This being the case, they should be kept under glass and treated in the same manner as to water, syringing, &c., as those that have had their balls reduced till the end of July, or even later if the buds do not appear well up, after which they may be ranged in some sheltered place out-of-doors, where they can be shaded by a tree or tall-growing shrubs for a few hours during the hottest part of the day. There they will enjoy the genial night dews and ripen up their growth better than if they remain the entire season in a house; but when out-of-doors there are two things to be guarded against, viz., continued heavy rains, that often set in towards the autumn, and dryness at the roots, caused by the hot air acting on the sides of the pots. The first may be guarded against by leaning the plants on their sides, and the second by putting them in a pot a size larger than the one in which they are growing, and by frequent examinations as to their condition, making sure at all times to give them sufficient water when they require it to thoroughly soak the whole of the ball. Plants that are not potted may be put out-of-doors some weeks earlier in the season, provided they have made good growth.

S.

Spray of Begonia Schmidti.

Cool Orchids.—Now is the time to keep these cool. Anything in the shape of oppressive heat, during July and August particularly, will do more harm than indifferent treatment for the other ten months of the year. Our climate in summer is, if anything, too hot for such Alpine Orchids as Odontoglossum Alexandræ, Pescatorei, and triumphans, and similar kinds; consequently abundance of moisture, particularly in the atmosphere, must at this time prevail. To keep down the temperature shading must be resorted to, and it will add much to the coolness of the house if the shading be raised 2 ft. from the glass, in order that a current of air may intervene between the two. Attention to this will prove highly beneficial to the plants, which, thus treated, will distend their pseudo-bulbs to a great size, other conditions being favourable. The leaves will become broad and dark in colour, and will stand up instead of falling down by their own weight, as is too often the case. If the atmosphere be properly supplied with moisture, there will not be much necessity for giving

great doses of water at the roots. I find a layer of Sphagnum an excellent bed in which to plunge the pots half-way down; it keeps them moist and looks well as it grows into a cushion of emerald velvet, encouraged to growth by the constant supply of moisture.—J. A.

ANSWERS TO QUERIES.

2334.—**Pelargoniums for Show.**—Three seasons of growth are necessary for the formation of a Pelargonium for exhibition. As soon as the rooted cutting is potted off and has made some five or six leaves, the point of it should be pinched out; side shoots will then be formed, which, if the plant is shifted on as needed and kept growing freely, will speedily attain strength and substance. These shoots must in their turn be stopped back. Supposing that the cuttings have been potted off in October, stopped the first time, and the plants kept growing along gently in a light airy house in a temperature of 55° by day, they will need shifting in December, and may be stopped the second time in January. By March the pots will again be full of roots, when a further shift may be given, pinching back the shoots once more and for the last time as soon as the necessity for so doing is perceived. By the middle of July growth will have been completed, and the plants may be turned out into the open air to mature their wood. As soon as this has attained the proper amount of ripeness, the shoots should be pruned back to the firm hard wood, placing them where they can be sheltered from heavy rains. When they have fairly started into growth shake away the old soil, prune back the old roots slightly, and replace in a size smaller pot. Keep close for a few days until root-action has commenced, and then gradually inure the plants to full exposure. House them by the latter end of September, and by the end of October they will, if all has gone well, be ready for shifting into 8-in. pots. A piece of wire should then be fastened round the rim of the pot, and a few stout stakes being laid across the pot and attached firmly to the wire, a piece of Willow may be run round and attached to their extremities, thus forming a trellis, to which the shoots may be tied down as they grow. The operation of training must be conducted with caution, tying down a few shoots at a time and keeping them as widely apart as possible, so that sun and air may play freely upon the wood, thus rendering it short-jointed and vigorous. Towards the middle of November pinch out the shoots, after which time no further stopping must take place. These plants may, if so desired, be shown the following summer; but it is better to allow them another season's growth. Treatment the second and third year will be pretty much the same, only that those plants which are intended to be shown in May and in the early part of June must not be stopped at all, whilst those reserved for July exhibitions will need to be pinched in December. For the early shows, early flowering kinds must be grown; and the temperature must be regulated so that the flower-trusses are well up by April. During the early spring and summer months free ventilation must be given, avoiding cold draughts, and frequent waterings with clear soot water or liquid manure of some kind should be administered as soon as the pots get full of roots. Every flower-truss should also be tied to a neat Willow stake as soon as the buds begin to open. Zonal Geraniums require a somewhat different treatment. Cuttings struck either in the autumn or spring should be grown along in gentle warmth during the early spring months, stopping them as required. By the end of May shift into 6-in. pots and place in the open air, plunging the pots up to the rim in ashes or Cocoa-nut fibre. Attend to watering, stop back the stringent shoots and tie them out, bringing them down as much as possible to the rim of the pot, at the same time picking off all flower-trusses as they appear. House them in a light structure, not allowing the temperature to become too low. In October they may be shifted into their blooming pots, and should not be stopped after that time. With respect to the time of flowering, that has to be regulated by the temperature maintained in the structure. As a rule, the flower-trusses will be showing about the beginning of April, the plants then requiring about two months to come to perfection, that is to say, by the beginning of June. If required at an earlier date a higher temperature will have to be maintained.—J. C., *Byfleet*.

2322.—**Raising White Thorns.**—Collect the berries when ripe, and store them away in dry sand until the next spring twelvemonths; by that time the fleshy portion of the berries will have decayed. Sow in March in drills about 9 in. apart in well-stirred ground, or prepare a bed some 4 ft. in width, well breaking the soil with a steel fork. If the natural staple is of a heavy adhesive nature, lighten it by the addition of some leaf-mould, wood ashes, or something of a like description. Choose a dry day in March for sowing. Scatter the seed broadcast, tread it well in, and cover with about 1 in. of fine mould, finishing off by patting the same down firmly with the spade. Keep the bed free from weeds during the summer, and as soon as the foliage drops, set the young seedlings out in lines in deeply dug, well manured ground, about 15 in. apart, and 9 in. from plant to plant. By the following autumn they will have grown into good strong plants, fit for making hedges or for any desired purpose.—J. C. B.

2331.—**Failure of Rose Trees.**—If the plants in question are not growing they are probably dead, having succumbed to the severe winter. The best way will be to root them up and replace them with others. There is a great mortality amongst Roses this year, their constitutions having been so weakened by the sunless summer of 1879 and the severe frosts of the succeeding winter, that they have been unable to resist the drying winds which we have experienced this spring.—J. C. B.

2319.—**Vinegar Plant.**—You labour under a false impression with respect to the Vinegar Plant, which is simply a fungus which forms spontaneously upon vinegar or upon wine which may be turning acid. A portion of this fungus placed upon any liquid which it may be desired to turn into vinegar will facilitate the operation. Its botanical name is Penicillium glaucum. There is no known plant which will supply vinegar.—J. C.

—— This is of the same class as the Yeast plant, and flourishes in the bottoms of vinegar in casks.—ACETUM.

2271.—**Oleanders not Blooming.**—I have always understood that the roots of this plant throw out a poisonous matter, which is prejudicial to their blooming in the same soil more than one year. I usually remove my plants from the pots in March, and, placing them under a stream of water, thoroughly cleanse the roots, and then repot them in peat, loam, and sand, and have never failed. They should be watered at the root twice a day and syringed overhead every morning.—W. E. LEE.

2325.—**Marechal Niel Rose.**—"Salopian" complains of Maréchal Niel losing its buds. I have one covering 21 ft. of south wall. It is worked on the Dog Rose. I give it no protection in winter. I have had an abundance of the finest blooms since the first week in May. I have had the plant about fifteen years. Let "Salopian" try my plan.—T. J. BLOFELD, *Norfolk*.

2255.—**Prickly Comfrey.**—About one hundred crown sets of the new Russian variety, would, if planted in a clay soil, yield sufficient food for a horse and pony. It must be planted 3 ft. between each crown; there would be sufficient to spare some leaves for the poultry. At the first break in winter the leaves come forth, and they will stand several degrees of frost if it is dry weather.—T. C.

2333.—**Bouvardias for Bedding.**—Bouvardias would not be satisfactory thus employed. They are winter-flowering subjects, being of great value for conservatory or room decoration during the dull months of the year. They may be grown in the open air either in pots or planted out during the summer months, but should be placed under cover by the middle of September.—J. C.

Although the following questions are answered by the Editor, we shall be obliged to any of our readers who may think well to answer them again.

2372.—**Cucumber not Growing.**—I have got a Cucumber which I planted a month ago in a cold frame; it has not grown at all since. I have watered it every day.—D. [The cause is want of heat. Sprinkle it every afternoon with tepid water, and shut up the frame, say, at three o'clock. Keep it rather close during the day, and shade slightly from hot sun. It will probably grow as the weather gets warmer.]

2373.—**Loam.**—What is the soil so often described as loam or sandy loam, and how to be procured?—A. H. L. [The top spit of a pasture laid to rot for a year is the best kind of loam. Sandy loam means, of course, loam containing a quantity of sand. Yellow loam is the best, and may be bought ready for use. See our advertising columns.

2374.—**Bottom-heat for Plants.**—*Mark P.*—Geraniums, Fuchsias, Petunias, Calceolarias, Balsams, Verbenas, Coleuses, Scarlet Salvia, Alternantheras, Primulas, require no bottom-heat. Place them on coal-ashes in your frame; keep them near the glass; give plenty of air and water.

2375.—**Lily of the Valley.**—Ought large and thick beds of Lily of the Valley to be left alone or transplanted? if the latter, when is the best time to do so?—H. B. [If the plants flower well we would let them alone, applying in autumn a coat of rotten manure.]

2376.—**Stopping Cucumbers.**—When is the right time to stop the growth of Cucumber plants, so as to throw off side-shoots? or would you allow the main shoot to run out and have the fruit on it instead of the side-shoots? My frame has two lights of about 6 ft. by 3 ft. each.—W. G. L. [Stop the leading shoots at once, and also stop all side-shoots at one joint past the fruits when they show themselves.]

2377.—**Strawberry Layers.**—Some of my Strawberry layers planted last year have borne no blossoms this spring, while others with exactly the same treatment are crowded with fruit. Should I dig the barren ones up, or keep them on? I have been told that only those layers which grow nearest their parent plant are fruitful; is this so?—METHUSELAH. [Dig them up and replace them with runners from your fruitful plants. It matters little whether a runner is near the parent plant or not; but runners should always be taken from fruitful plants only.]

2378.—**Best Time for Planting.**—What is the best time for planting Hepaticas, Christmas Roses, and Belladonna Lilies?—R. A. B. [September.]

2379.—**Filling Blanks in Asparagus Beds.**—Can roots be put in to fill up blank spaces in October? The books say spring is the best time, but the vacant spaces are not distinguishable; whereas by putting in before the heads are cut down in October the vacant spaces can be perceived. [Could you not place a stick, or in some other way mark the vacant spaces? Spring is decidedly the best time.]

Zonal Pelargonium.—*Kappa.*—We advise you to wait until the exhibition of the Pelargonium Society, which takes place on June 29. Specimens should reach the superintendent of the Royal Horticultural Society's Gardens, South Kensington, on the morning of the show.

Tree Mignonette.—*Lover of Mignonette.*—Sow at once in small pots, placing about three seeds in the middle of each. When well up pull out the weakest, leaving one only. Pot into larger pots as necessary, keeping all flowers regularly pinched off, and also occasionally stopping the shoots to get the plant bushy and of good shape. If standards are needed keep all the shoots but the centre one rubbed off, and when the desired height is reached, stop the centre one also, and in turn stop the shoots which will be produced near the top of the centre shoot till a bushy head is formed.

Quassia.—*A. B. G.*—Boil the Quassia chips for fifteen minutes or so. 4 oz. to the gallon is a good strength, adding 4 oz. of soft soap to the gallon as the liquor cools.

Saxifrages.—*Wilts.*—These are hardy plants, thriving best in deep sandy vegetable soil on rockwork or raised mounds. A partially shaded situation suits them best.

Manure Water for Celery and Vegetable Marrows.—*W. H. D.*—No kind of manure water is better for this purpose than the drainage from a manure heap or stable. That fresh from the stable must be diluted before use. A bag of soot soaked in the liquor is an improvement.

Mint Turning Yellow.—*Southportarian.*—Cut it down close to the ground and apply a top-dressing of well rotted manure. It may then grow better.

Seedling Solanums.—*J. E. G.*—Harden them off, and then plant them out-of-doors in a bed of rich soil, and lift them in autumn.

Fuchsia Earl of Beaconsfield.—*A. B. initio.*—This varies in colour according to the season of the year, and we also think there are several varieties being sold under the same name. Mr. Laing, of Forest Hill, has, we believe, the original plant of it.

Potting Orchids.—*W. A. B.*—You may pot them at once. Read the article on Orchids in last week's GARDENING.

Gardenia with Deformed Flowers.—*W. A. B.*—The plant has received a sudden check when forming its flower-buds either by insects, change of temperature, or dryness at the roots.

Young Vines not Growing.—*G. W. H.*—Keep them well watered at the root, and keep a moist, airy atmosphere in the house, and they will gain strength as the summer advances.

Cucumbers Gumming.—*J. A. J.*—Want of heat will sometimes cause this. Apply new linings to the frame; also scrape off the gum, and rub the stem over with quicklime.

Sulphuring Hot-water Pipes.—*L. S.*—This should only be done in cases of mildew or red spider. Get flour of sulphur, and mix with water to the consistency of thin paint. Apply it to the pipes with a brush.

Planting Asparagus.—*Two Good Beds.*—See answer No. 2250, last week.

Glazing Without Putty.—*H. E. F.*—You should visit some place where this system is in use to be able to judge of its merits, and see how it is done.

Mushrooms.—*Novice.*—The manure from horses fed on dry food is better than that from horses fed on green food. The manure from entire horses is considered best, but the other will give good results.

Alpha.—Keep the paths and stages of the house well watered, and give plenty of air. You heat the house too much. Very little fire-heat is needed now for ordinary greenhouse plants.

Campanula.—Send us a bit of the plant, with flowers if possible. You do not give us any idea of what the plant is like.

Bindweed in Gardens.—*Peshtaff.*—Pull all up you can, and afterwards keep the ground well hoed in order to prevent its reappearance. By persevering in this direction you will in time get rid of the weed. This is, in fact, the only true way to exterminate it.

Strawberries for Forcing.—*Peshtaff.*—Charles Napier is the best kind you can grow, unless you want a very early sort, then have Héricart de Thury or Keen's Seedling. Runners should be layered at once in small pots or pieces of turf, and when rooted they should be severed from the parent plant and potted into 5-in. or 6-in. pots.

Roses not Blooming.—*Y. Z.*—Roses everywhere are very poor as regards bloom this year, but they may make good growth, and thus give a good bloom next season.

Melons not Swelling.—*R. P.*—Pinch out all the growing points of the plants, and thin out weakly growths; also keep all flowers picked off. Give a good soaking with tepid water.

Tropæolum tricolor.—*A Vicar.*—We can assign no reason for your plant dying off; only that probably it had received an over-dose of water and the soil had got sodden; or it might have been suddenly exposed to the sun.

Gooseberry Caterpillar.—*R. G. F.*—The Hellebore powder should be washed off with a syringe after it has been on the trees for a day or so. It will not hurt the fruit. We have never tried it on Currant trees.

Market Gardening.—*T. E. N.*—The extent of ground you take must depend upon the capital at your disposal. You can make more profit comparatively out of a few acres well cultivated than out of a greater extent badly cropped. To realise £200 a year profit as a certainty you would need at least 10 acres. Shaw's book on "London Market Gardens," advertised in our columns, would be a great assistance to you.

Names of Plants.—Whilst we are always pleased to name plants for our readers we are bound to remind them that we can only do this when fair specimens are sent. We cannot undertake to name florist's flowers, such as Fuchsias, Geraniums, &c., nor more than three of any kind of plant at one time.——*Factotum.*—1, Franciscea calycina; 2, Tabernæmontana coronaria; 3, Dalechampia Roezliana rosea; 4, Abutilon vexillarium; 5, Diosma Ericoides; 6, Rhynchospermum jasminoides; 7, Selaginella cæsia arborea; 8, Selaginella cæsia; 9, Pteris argyrea; 10, Nephrolepis exaltata; 11, Pteris serrulata cristata; 12, Stag's-horn Fern (Platycerium grande); 13, Adiantum scutum. Thirteen specimens at one time is too bad.——*Rose.*—Limnanthes Douglasi.——*S. G. F.*—Fern-leaved Beech.——*A. M. R.*—1, Saxifraga cæspitosa; 2, S. pentadactylis; 3, S. cæspitosa hirsuta; 4, S. hypnoides; 5, S. Aizoon.——*T. G. R.*—1, Zonal Pelargoniums; 2, Fuchsia procumbens; 3, Mesembryanthemum species, which we cannot say.——*Ganvar.*—A species of Albuca; cannot name without leaves.——*A. M.*—Cannot name without flowers; please attach numbers to specimens when sending again.——*M. E. T.*—Pinguicula vulgaris. ——*Mrs. M.*—6, Begonia Weltoniensis; 7, B. fuchsioides; 8, B. Saundersi; others not in flower. They will only succeed out-of-doors during summer.——*Subscriber.*—Cyperus alternifolius variegatus; mix plenty of sand with the soil.——*T. E.*—Solanum Dulcamare, berries poisonous.——*Walter Edwards.*—1, Peperonia arifolia variegata; 2, Peperonia of some kind; 3, Begonia nitida.

QUERIES.

2380.—**Improved Flower Gardening.**—Living in the suburbs of a large town, and having a very pretty garden about 60 yards long, consisting of croquet lawn, flower-banks, and beds laid out in Grass, with reserve corners for Ferns, &c., I read with much interest an article written by "Amateur M.," and should feel very grateful for instructions of how and when to plant some of his flowers that I am unacquainted with—Polyanthus, Primula japonica, Oriental Poppy, Day Lily, Campanulas, Scarlet Linum, French Poppies, Ox-eye Daisy, Chrysanthemum Etoile d'Or, Zinnias, Anemone japonica alba. Having neither greenhouse nor cold frame, I raise seedlings in small boxes covered with glass. I find, as a rule, planting seeds in the ground a failure, or coming so late they are of little use. I, like "Amateur M.," do not mind any amount of trouble, but cannot boast of having my flower-beds always as bright as I should like to see them. Any hints of how to keep them so will be read with much pleasure. Perhaps I should mention there are nine beds, each having a standard Rose in the centre. —LOVER OF FLOWERS.

2381.—**Clay's Fertiliser.**—Can any one who has tried this tell me what quantity should be used per acre? whether it is a good manure for garden, and especially market garden, crops? whether it is a manure that does not take as much out of the land as it puts in? and whether it is suitable for Wheat, Peas, Onions, and root crops in large quantities? I am desirous of comparing it with other manures I am acquainted with, both as to cost per acre and success in competition with other plant foods, and if any of your numerous readers can give the required information, it may make some difference what manure I and others may buy for next season. Is it a manure that permanently improves land, or simply stimulates a crop?—V. A. V.

2382.—**Plants for Exhibition.**—I should like to exhibit at our annual flower show, which takes place the last Saturday in August, some Penstemons, Antirrhinums, Stocks, Asters, and Pansies, with perhaps some Geraniums and other flowers in pots; and as this is my first attempt at anything of the sort, I should be glad of some advice on the subject. Should they be liberally supplied with liquid manure, &c.? and when should I let the Geraniums go into flower? I possess a very small greenhouse without any heating apparatus.—S. A. H.

2383.—**Spiræa japonica Failing.**—I have a Spiræa japonica, the root of which I bought last autumn, which I thought was doing splendidly, but all of a sudden the flower-spikes began to turn black and all crumpled up, as likewise did the leaves. What was likely to be the reason of it?—S. A. H.

2384.—**Celery for Exhibition.**—Will some one inform me of the best means of blanching Celery for exhibition?—N. S.

2385.—**Planting Honeysuckles.**—Will any one tell me the best time to take wild Honeysuckle from the hedges to plant in London? I tried some last autumn and this spring, but they have all dried up. What soil do they require?—A. D.

2386.—**Lily Failure.**—When living in Hampshire some time ago we grew some White Giant Lilies which bloomed splendidly there. About six years since we migrated from Hampshire into Wiltshire, took the Lilies with us, and planted them in a border in front of some common Laurels. They grew rapidly until the flower-stem reached the height of 18 in. or 2 ft.; at this stage large brown spots appeared on the leaves and stem, which, no doubt, were the cause of the immediate pining and subsequent death of the plants. About eighteen months ago we uprooted the Laurels for the purpose of making a herbaceous border 130 ft. long and 17 ft. wide. This border was trenched 2 ft. deep; at the bottom was a good layer of horse and cow manure; the upper and middle layers consisted of manure mixed from the hot-bed. The soil is rather strong and the border is inclined slightly to the north; but behind, about 50 yards distant, a good belt of trees shelters it from any disastrous effect of the north winds. Through the middle of the above border were planted two rows of Lilies, and this time, both in front and behind, other things were planted which are doing very well. The White Lilies at first grew rapidly, just as the others had done, and, like the others, they, too, have this year dwindled and died. I have examined the bulbs; nothing seems to have attacked them, and they present a healthy appearance. I shall feel obliged if any reader will kindly render me effective assistance in remedying this evil.—C. W.

2387.—**Ammonia for Plants.**—Having seen spirits of ammonia recommended for pot plants, would any of the readers of GARDENING having a practical knowledge of the nature of spirits of ammonia inform me what quantity of spirits to 1 gallon of rain water would be safe to apply to Fuchsias, Geraniums, &c.?—GREENHORN.

2388.—**Grapes Failing.**—I have a Vinery, about 30 ft. by 18 ft., lean-to, high walls on east and north sides of it; six Vines put in four years ago; border, 7 ft. inside, 9 ft. outside; drain at the bottom; bones in border. Last year there were a great many Grapes, but seemed to dwindle away, and mildew set in; this year about six bunches are all there are. Heat kept up in winter between 50° and 60°. Can any reader please tell me what is the cause, and the remedy for this?—D. W. G.

2389.—**Manure Water.**—Will "Public Analyst" (p. 140, GARDENING ILLUSTRATED) inform me how much sulphate of iron (by weight) will be required to fix the ammonia in 1 gallon of urine?—CONSTANT READER.

2390.—**Cats in Gardens.**—If any one, knowing the law upon this subject, would kindly write upon it in GARDENING of an early number, I am sure they would confer a boon upon those persons having town gardens, and who are, night after night, pestered with this abominable nuisance to gardens. Suppose I give notice, in writing, to those persons about me keeping cats, that their liberty during the night is a nuisance to me and cause damage to my property, and that if allowed to continue to annoy me I shall destroy any found on my premises, will the law allow me to use such means as I may prescribe to rid the pests? "R. G.," in yours of the 26th ult., gives us an account of the trap and water cure, which I consider very good; but how is the trap made that you would catch a cat in?—W. M. B.

2391.—**Hollyhocks not Growing.**—Some Hollyhocks, which have been planted out for a month at least, throw up very large leaves, each on a long stalk, while the main shoot of the plant does not grow at all. What is the cause of this? what its remedy?—A. H. L.

2392.—**Anemones not Blooming.**—Can any one tell me why my Anemones have not flowered? They were planted eighteen months ago, and last year had a few flowers; this year there is only one, but a very good one. Should they be lifted and replanted? or remain in the bed untouched?—T. B. K. G.

2393.—**Insects in Cucumbers.**—My Cucumber bed is infested with insects, how many sorts I cannot tell, but there are thousands of them, and as soon as the roots get out a little way they are eaten off by these destroyers. Can I kill them by any means without doing harm to the plants? if so, will some one please to tell me what to get and how to use it?—A NOVICE INDEED.

2394.—**Fruit for Exhibition.**—Will some one tell me how to grow Apples, Pears, and Plums for exhibition? The Apple and Plum trees are nailed to the wall. Name of Apple is Lincoln Pippin, and name of Plum Victoria. I want them to be ready by the middle of August.—D.

2395.—**Roses to Flower at Christmas.**—Will some practical man give me any information as to Roses to flower at Christmas? I have some nice plants growing well in 6-in. pots, and some few in 8 in. pots, in a cool greenhouse. Some recommend me to grow them on till August, then give them rest till October, then start them again. Others say keep them growing on steadily right through, pull off all flower-buds (which I am doing daily), and they are sure to flower in December. Then, as to potting, one says have the pots full of roots when you start them in October, another says give them a shift in September, all of which is very puzzling to a beginner. —NOVICE.

2396.—**Blood as a Manure.**—Can any one kindly tell me if bullock's or sheep's blood is good as a manure for flowering plants, and how it should be used?—WILTS.

2397.—**Cobæa scandens.**—I have two plants raised from seed now 1 ft. high. Will some one kindly tell me how to treat them, and how best to train one or both to cover a wall in cool conservatory 10 ft. high by 4 ft. at bottom and over a doorway higher up? Will they grow sufficiently large in pots? and what is best to train them on? and must I pinch it back to keep it bushy?—BUTTERFLY.

2398.—**Annuals for Exhibition.**—Can any one tell me the names of the best six hardy and six half-hardy annuals to grow for cut flowers for exhibition purposes next August?—LOVER OF FLOWERS.

2399.—**Plants for Photographic Studio.**—Can any one inform me what kind of evergreen shrub will grow and look pretty in photographic studio to be used in the trade of a photographer?—ARTIST.

2400.—**Keeping Everlastings.**—Can any one tell me what I can do with white Everlastings to keep them a pure colour? mine always turn brown.—A. J.

2401.—**Climbers for Bleak Aspect.**—Would any reader kindly tell me the names of a few good hardy climbers for an house with a south and east aspect in a very bleak place.—J. E. G.

2402.—**Canadensis sanguinea.**—I have some plants of Canadensis sanguinea the seed-pods of which ought to ripen next week or so. When is the best time to sow the seed, and in what temperature? Will the roots bear early forcing?—STRETTON.

2403.—**Plants for Empty Room.**—I would like to know the most suitable plants to grow in a large empty room with an ordinary sash window.—W. H. D.

2404.—**Triumphal Arches.**—Can any one give me some information on this subject? I want to erect an arch with a span of 13 ft., the height being 10 ft. 6 in. What plants should I use, &c.?—CONSTANT READER.

2405.—**Honeydew.**—Does any one know of a remedy for Honeydew on plants?—V. C. W.

2406.—**Cauliflowers Going Blind.**—I have a fine lot of Veitch's Autumn Giant Cauliflower plants, and I find that more than fifty per cent. go blind. Will some reader tell me why it is so?—NIL DESPERANDUM.

2407.—**Heating a Greenhouse.**—I have built a greenhouse, 5 ft. by 6 ft. Should be glad to know the best way to heat it in the winter. Will the fresh paint injure the plants?—CONSTANT READER.

—— Will any subscriber inform me how a small greenhouse, 5 ft. by 5 ft. by 5 ft., built against the wall, and having a good southern aspect, can be heated during the winter months? I want a simple and cheap contrivance.—Z. D., *Liverpool.*

—— I have a greenhouse 9 ft. by 12 ft. by 9 ft. high. Can any reader inform me the best way of heating it? I am not allowed to have a chimney or make any smoke. Is a petroleum lamp any use? and if so, which is the best?—H. T. B.

2408.—**Making an Asparagus Bed.**—Will some one be so kind as to give me the necessary directions how and when to make a fresh Asparagus bed? my old one appears now of no use.—A SUBSCRIBER.

2409.—**Plants for Shelves.**—What are the best plants to grow on the top shelf of a wooden conservatory stand about 4 ft. from the glass? I have tried Salvias, Balsams, and other things, but nothing seems to flourish there, the plants grow so tall and spindly. Would boxes or pots of seeds do well there?—NANCY.

2410.—**Calceolarias from Cuttings.**—If these are cut down and placed in a pit, like Cinerarias, they will throw up young shoots to make good cuttings. Can any one tell me how this plan will succeed?—ARTHUR.

2411.—**Azaleas not Blooming.**—Can any one tell me why my Azaleas have not flowered this year? They look strong and healthy, and have made a great deal of wood; on one a few flower-buds appeared, but they almost immediately dropped off. They have been kept in a greenhouse, and have had plenty of water. —A. H. L.

2412.—**Double and Single Stocks.**—How can I tell double from single Ten-week Stocks before they are in bud?—T. E.

2413.—**Show Celery.**—Will any practical grower of Celery give me as early as possible the best way to treat above, especially giving information as to supporting the Celery when not earthed up, and also the best way and material used for wrapping, so as to ensure effectual blanching?—A LOVER OF CELERY.

2414.—**Datura chloranthe,** Tropæolum polyphyllum, and Tropæolum speciosum, are three plants which baffle me. Can any one set me right in the cultivation of them?

2415.—**Budding Roses.**—I have a common white Rose in a pot; I want to bud a Maréchal Niel Rose on it. When would be the best time to do it? I want to move it to the back wall of a Vinery; will it interfere with the Vines? and would it do planted in a Vine border? Should I bud it before removing it or after?—B. L. C.

2416.—**Winter Gardening.**—What will remain green through the winter in a border of cold soil?—A. L

FLOWER SHOW IN REGENT'S PARK.

THE second summer exhibition, held on Wednesday, the 19th inst., at Regent's Park, was a very fine one—one of the best indeed that has been held in London this year. The spacious tent was well filled with unusually fine exhibits in the various classes, the entries in which were, on the whole, very numerous. The principal attractions were the grand banks of Orchids, especially those exhibited by amateurs, notable among whom was Sir Trevor Lawrence, Bart., M.P., whose gardener showed such examples as are seldom seen at an exhibition. The miscellaneous groups which occupied the central banks, contributed by Messrs. Veitch, Williams, Henderson, and Laing, were likewise highly attractive. The usual display of stove and greenhouse flowering and fine-foliaged plants and Ferns was on this occasion more numerous, and all, with

but few exceptions, were of high merit. A remarkable feature also was the tuberous Begonias shown by amateurs, which were finer than we have yet seen them; this is a proof that their culture is being better understood, as the collection shown by Mr. Law's gardener was indeed very fine. The display of fruit was good, though not large. Some excellent examples were shown for the leading prizes. The competition for the ten guinea prize offered by the Fruiterer's Company, which was to have taken place on this occasion, was withdrawn, and has been postponed until the occasion of the evening fête (June 30). Altogether it was a fair exhibition, and the judicious arrangement of colour and foliage was very effective, and was moreover increased by the Messrs. Carter's extensive display of annuals in the corridor, and Messrs. Waterer's Rhododendrons in the adjoining tent.

Packing Fruit.—We are requested to direct the attention of our readers to the special prizes offered by Messrs. Webber & Co., of Covent Garden, for competition on the 29th inst., on the occasion of the Rose show to be held by the Royal Horticultural Society at South Kensington. The prizes are £7 7s. and £3 3s. for the best packed three boxes of fruit, to consist of one box of Grapes not less than 14 lb.; one box of Peaches not less than twenty-four; and one box of Strawberries not less than 2 lb. To be booked, carriage paid, at any station over 20 miles from London, and delivered by railway company, addressed to the Superintendent, Royal Horticultural Society, South Kensington. Those of our readers who do not compete for the prizes should, if they are in the habit of sending away fruit, avail themselves of the opportunity of seeing the best ways of packing it.

POULTRY.

Poultry Profitable.—I have kept poultry for seven years, and feel sure they can be made fairly profitable. My method is to obtain, if possible, broods at various seasons, so that eggs may be had all the year. Last year I had birds hatched in May, August, and October. My first May pullets commenced laying November 6 (a cross-bred Brahma Spanish); August pullets first commenced to lay February 15; and one pullet, hatched October 23 (light Brahma, pure-bred), laid her first egg April 11; she has laid every day but three until recently, when she became broody. Forty-two eggs in succession, from a bird now only seven months old, I think very wonderful; this is without doubt, as she has been kept with other pullets only. My birds are well fed, and have a Grass run of an acre. I give Barley twice daily, kitchen scraps, &c., and in the winter warm food once daily.—E. D.

Vermin on Poultry.—M. Lemoin, of Crosne, says that he changes the whole of the material in his nest boxes every six days when the hens are sitting, and powders the floor of the box or basket with sulphur flour. To ensure a good hatch, he finds it necessary that the hen should be comfortable, and also be well nourished, so much so, that he crams them if they will not eat regularly; he does this not only to ensure steady sitting, but to ensure a good supply of heat from the hen's body.—T. C.

—— Go to the nearest chemist and ask for a long-shaped bottle, to hold about 2 oz. of bi-sulphate of carbon. Before you remove the cork fasten a piece of string round the neck, and make a loop to hang it on a nail; when it is hung up remove the cork, and the escape of the vapour in the chicken house will free it and the poultry of all vermin and not injure the fowls.—T. C.

—— In answer to "Subscriber's" inquiry as to whether insects are injurious to chickens, we answer most assuredly they are. Follow out the instructions given in the article on "Insects in Poultry," in GARDENING of June 5, and the birds will soon be free of all insects.

Keeping Brahmas.—Your bird appears to be suffering from cramp. Keep it in a warm dry place; the bottom of the pen should be littered with chaff or straw, and feed liberally with good nourishing food. In the space mentioned, a cock and half-a-dozen hens could be kept, but they would need keeping very clean.

Keeping Ducks.—In answer to "T. T. B." about young ducks, I find the ordinary breed answer best. I rear them till they are six weeks old, and then they are worth 1s. 6d.; if you keep them till they are grown, they would then be worth about 3s. 4d. I have a brood of eight white ducklings which are a month old; also I have just hatched another brood, and two more coming later on, all of which I shall dispose of at 1s. 6d. each. White ducks are supposed to sell best, as they look whiter when dressed for the table.

Disease in Fowls.—If "May" would closely inspect the bird, he would find it is not scurf, as he supposed, but the nits of insects which may be found on the bodies of the birds. These insects irritate the birds, especially round the head; and as the nits are firmly attached in great numbers to the feathers, the birds in scratching themselves often pull out the feathers. A little oil may be rubbed over the head and neck, and plenty of dry earth or mortar, with a little sulphur mixed together for the birds to dust in.

Pea-fowl.—Their ordinary food is the young Grass, but to prevent them straying it is advisable to give them a daily feed of bread scraps. With regular feeding they become as domesticated and harmless as barndoor fowl, and the damage done in a large garden is very small. They require no shelter either in winter or summer, their favourite roosting place being a tree or one of the outhouses.

Enlarged Crop.—It is the crop of "Kate's" fowl, which has become enlarged. This is brought on by keeping the bird without water. When a supply is given they drink too much, and overtax the muscles of the crop, and these, not being able to regain their normal condition, leave the crop to hang down in a loose and most unsightly way. The fact of the hen vomiting, or rather the water running from the mouth, proves that she is often kept short of water. There is no cure for enlarged crops, neither does it produce any pain.

Prolific Fowls.—"Thorburn" says he thinks his hen may be called prolific. According to my hens in general, and one in particular, I do not think so. The one in particular was hatched last August, brought off a brood of nine on April 27, and commenced laying again on May 22.—A LADY.

THE HOUSEHOLD.

COOKING PEAS.

GARDEN Peas, *petits pois*, when young, quickly grown, and fresh, have a delicious characteristic flavour of their own, are rather sweet, and almost crisp when eaten; and maintain these attributes unimpaired if simply boiled in salt and water. Such should be eaten *à l'Anglaise*, the use of the term itself being a tacit admission on the part of the French *chef*, that a simple cooking advocated here, and practised in this country, is often right. All that is produced under this name is a dish of Peas, cooked as described, with a pat of fresh butter and some salt, accompanied by the capital little pepper-mill, which is natural to a French table, and almost unknown here. A morsel of the butter is stirred into the hot Peas, a little black pepper, full of fragrance, freshly ground over them, and a pinch of salt, according to taste, and the whole stirred. The same process is equally applicable to French Beans, and also to that excellent mixture of French Beans and *flageolets*, so well known as *panachés*, so rarely served in this country. All these vegetables, when in excellent condition, are doubtless served at their best, *à l'Anglaise*, not only in relation to the palate, but also in view of the average digestion. But who does not know that the common mode, both in town and province throughout France, is to serve not only French Beans, but other vegetables, floating in rich, yellow, melted butter, rendering them for most English stomachs, at all events, hazardous, and to some repulsive.

To return to our *petits pois* as the type. When green Peas are a little hard, old, and tough, or a little coarse in flavour, and without sweetness, then it is that the French cook treats them with advantage. For such Peas as these, when no others are to be had—and it must be confessed that inferior Peas are far too commonly met with—by all means let them be served *à la Française*. This means stewing them gently, with a good proportion of butter, some sliced Onion, a little salt, stirring in a little flour and a small quantity of sugar. Some, exceptionally, add a little cream and yolk of egg. Another excellent French method, *à la Paysanne*, is to add first butter as before, salt and Onion; and then stew slowly in a fair quantity of stock, with Lettuces, finely sliced, some sugar, and a shred or two of Parsley, if desired. Almost any Peas may be rendered tender and appetising if thus treated.

Again, *haricots verts sautés au beurre* is a favourite mode of cooking them; but no superfluous butter should appear when they are served; the quantity allowed in which to toss them for a few minutes on a brisk fire, after boiling, should amount to no more, according to the rule, than a tenth part by weight of that of the vegetables themselves when dry.

The natural inference from all this is, that certain French methods are desirable, and their success is remarkable when the materials are inferior; but the English method is the simplest and best when the materials are—as they always should be—the best of their kind.—SIR HENRY THOMPSON, *Food and Feeding*.

How to Preserve Milk from Turning.—This is the time of year when milk is most difficult to keep. By adding a small pinch of soda, it very seldom turns. Salt may be used for the same purpose.—J. BAKER.

HOME PETS.

Treatment of Canaries.—In GARDENING ILLUSTRATED, April 24, there is an answer to a question as to the cause of feathers coming off canaries. It is a trouble of mine just now, and I shall be glad to know of what a diet consists that is nourishing and strengthening, yet not rich, so that I may try to cure this weakness in mine. Should canaries' food be changed occasionally or not? Is there anything that could be used to destroy any insect that troubles it, for it seems constantly annoyed with irritation of the skin? What can I do to make it sing? He sang very well a little time ago, but he has left off now again.—J. R. B.

Insects in Canary Cages.—If "L. R. F.," who inquires about small red insects infesting canaries and their cages, will pin a white pocket-handkerchief tightly over the cage at night, and examine it in the morning, he will be able to kill dozens every morning.—E. M. C.

Food for Dogs.—What is the best food for a Newfoundland dog? Are cows' buffs any injury to him, as he is very bad with worms just now?—NEWFOUNDLAND. [Good dog biscuits soaked is the best food, with a piece of raw meat or a bone occasionally. Cows' buffs always breed worms.]

Taming Love Birds.—The process for taming these, as other birds, is only time and patience. Take notice of them continually, and have them as close to your usual haunts as you can. They will gradually get accustomed to you, and ultimately will, without doubt, eat out of your hand and perch on your finger. If they are Australians their right name is Budgerigar, or Australian Grass parrakeet, of which I gave an account some time back in GARDENING. I shall be happy to answer any further questions on this interesting little species, which is the most popular of Australian parrakeets.—ADA.

Learning Parrots to Talk. — In answer to "E. A. E.," I should like to know how he has determined the age of his grey parrot. Some parrots begin to talk sooner than others, and naturally some are more talented than others and pick up sentences more quickly. Keep him in an adjoining room and do not let him see you whilst you are repeating words you wish him to learn, and repeat them as frequently as possible. Feed him with any kind of seed he prefers, also sop and fruit. Do not on any account forget to keep a constant supply of fresh water in his cage. The male grey parrot alone possess the power to whistle.—ADA.

Canaries in Newly-painted Cages.—Unless the paint is perfectly hard and dry, the birds will pick it, and therefore impair their constitution; but if perfectly dry and hard it will be quite safe to put the birds in. For my own part I prefer a plain wire cage with mahogany bottom—the sort known as waggon cages. They last longer and always look nice with a little care.—ADA.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 3s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s; Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 2s to 3s; Strawberries per lb, 1s 6d to 4s; Gooseberries per qt, 4d to 6d.

Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 6d to 8d; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 4s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 6d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 1d to 3d. Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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JAPANESE PRIMROSES.

THE annexed illustration of Japanese Primroses represents a race of hardy new forms of much beauty and variety. We are indebted to the late Mr. John Gould Veitch for the introduction of Primula cortusoides amœna, or P. Sieboldi as it has since been designated. This was followed by the white variety, the Lilac form known as lilacina (which is so distinct and altogether so unique in character, as to rank almost as a species), and the rose and white variety known as grandiflora, the inner or upper sepals of the petals of which is white, the reverse rose. Probably one or two of these are garden hybrids raised in this country. These fine forms were under cultivation in this country for a considerable time before new varieties were obtained from them. Probably this arose from the circumstance that P. amœna, which is most generally cultivated, rarely matures its seed. The other three are more free in this respect, especially the variety grandiflora. Now, however, there are some charming varieties in cultivation. Three of these are represented in the accompanying illustration: laciniata is a fine kind, remarkable for its large bold flowers, which are handsomely fringed on the edges and of a rich bright purplish-red colour; purea is a sort having large and finely, formed flowers of a bright mauve-purple-very distinct and handsome; and maxima, a greatly improved form of grandiflora, largely increased in size, purer in colour on the surface, and deeper on the reverse side. Mr. Dean, of Bedfont, Hounslow,

GROUP OF HARDY JAPANESE PRIMROSES—PRIMULA (SIEBOLDI) CORTUSOIDES AMŒNA.

from plants in whose nursery our illustration was made, has also raised many other varieties of scarcely less merit, but the foregoing will sufficiently illustrate their value. One chief merit possessed by these new Japan Primroses is, that they bloom early, coming in about the month of April, when flowering plants are not particularly plentiful; another is, that they are remarkably free bloomers, throwing up, as they do, successional flower-stems, and lasting a long time in perfection. For pot culture and cool greenhouse and window decoration they are unequalled at the time of the year just alluded to. Their cultivation, also, is comparatively easy. The best soil for them is light, free, rich material, consisting of fibry loam, leaf-mould, pulverised manure, and some grit to keep it open. When grown in pots the latter should be well drained, as the roots keep pretty near the surface; they are also impatient of excessive moisture, and when planted in the open ground (for the Japanese Primrose is a perfectly hardy plant), they should be in thoroughly drained soil, or in raised positions on rockwork. The roots creep just below the surface and form eyes, by means of which any one variety can be easily propagated. The Japanese Primrose is a herbaceous perennial, which loses its leaves in autumn and winter, when it goes to rest, and breaks up again early in spring. For growing in fancy earthenware pans or rustic vases, few plants surpass in usefulness these beautiful hardy Primulas. If old plants be divided every year, and a number of the pieces placed in large pans, they produce a mass of blossom that lasts, even in a sitting-room, for a considerable length of time; and in a cool, airy conservatory they of course last much longer. When cut the flowers soon shrivel, and they cannot, therefore, be recommended in that state; but no one possessing a cool house should be without a good display of these Primulas in early spring.

To Destroy Green Fly, Scale, or Thrips.—Two small wine-glasses of paraffin to 4 gals. of water; syringe the plant by most carefully keeping these two ingredients thoroughly mixed by working with the syringe deeply and briskly in the bucket several times before you use it on the plant. This mixing should be constantly repeated. Of course, like all other watering, it should be done after the sun has gone down. A burnt look, as of scorching, is the result if used too strong or without proper mixing; but most delicate plants may be thus treated without fear of harm.—E. L., *Lancaster*.

Snails and Tobacco-powder. — My Ferns were eaten all last summer by a small snail, so much so, indeed, that I could not get a frond above 2 in. high. I examined them night and morning, but could not get rid of the depredators. One day, however, I was dusting some small plants with Fowler's Tobacco-powder, and by chance I dropped some of it on a snail, which seemed to be killed by it almost instantly. I afterwards dusted half-a-dozen Maiden-hair Ferns with this powder, and with excellent results, for they shot up strongly, and have not been troubled with snails since; it might, therefore, have the same effect upon other plants.—G. W.

How I Make a Garden Pay.—My garden is 12 yds. long, 5 yds. wide. I have twelve frame-lights, which I fill with Celery in April, and I sell them all by the end of May at 4d. per score, about 4000 plants, besides 400 of the best, which I keep for my own use. When I have sold all the plants I take the frame work away and dig the ground over and level it down, then I plant my 400 Celery plants on it 7 in. apart, leaving a footpath every yard. When they are ready to earth up I tie them up nicely and put a 4-in. drain pipe over each one. When they are ready again for earthing up, I put another one over them and drive a stake 3 ft. long down by the side of each pipe, and tie a piece of matting round the stake and pipes to keep the wind from blowing them down, and they blanch beautifully. I have always fine Celery, and get 2d. and 3d. a stick, and it pays me very well, and when I have planted the Celery I make a lean-to greenhouse of my lights; six lights form the roof and three lights the front, two lights one end, one light and a door the other, and two triangle lights to fit ends under the roof. These lights are all screwed to a framework, and the crevices are puttied up, so that it is very nearly waterproof. I grow Pelagoniums, Balsams, Petunias, Cactus, Fuchsias, Musk, Ferns, Asters, Stocks, Roses, and Chrysanthemums, and they do very well. I get nothing but sun heat: that I get most of the day. Some amateurs will say they have no glass; I had none at first. I bought one light at first, and I soon bought another with the money I got in Celery planting.—T. J. A. B.

PLANTING OUT PLANTS RAISED IN POTS.

MANY plants that grow and ripen their produce in the open air are annually raised in pots under glass for the purpose of giving them an early start, and in the case of Tomatoes, Capsicums, &c., it is the custom to grow two or more plants in a pot, and when the proper time arrives for planting them out to do so with the balls entire. I am convinced, however, that wherever it is necessary, owing to want of space, to grow several plants in a pot during the nursing period, they should always be divided and the roots opened out when planted finally. As an illustration of what I mean, let us take a pot of Tomatoes, with say two plants in it, one on each side of the pot; it may appear at first sight that the plants would receive less check if turned out without breaking the ball than if it were broken through the middle and each plant planted singly, but there really is no comparison between the two modes of performing a very simple operation as regards the influence upon the future well-doing of the plants; and although I have instanced Tomatoes as furnishing a ready illustration, breaking the balls has perhaps less influence upon these than upon many other plants. I need not, I hope, say that I do not advocate any unnecessary mutilation of the roots, but the importance of giving them a proper direction outweighs any little inconvenience the plants may suffer from a root or two being injured. The fact is, when the soil is warm and moist, wounds heal with astounding rapidity, and new roots are formed in increased numbers without much check being given. I have watched the effect of this many times, and with various kinds of plants, and the advantage was always in favour of unlacing and disentangling the roots, even supposing a fibre or two were ruptured during the process. Whenever it is necessary to plant out anything that has become pot-bound, and it is not thought desirable to interfere with the ball, first make sure that the ball is thoroughly moist, and when planted, make the soil round it as firm as possible, leaving a slight cavity or basin when all is finished to concentrate the moisture over the ball. When plants are planted from pots with hard balls in freshly-turned-up soil the water drains away too rapidly, and the plants perish from lack of moisture, even though plenty may have been poured round them. And this is one of the greatest objections which I have to planting out pot-bound plants of any kind without disentangling their roots. The work and difficulty of keeping plants put out under such circumstances supplied with water in a dry soil are increased immensely, whereas if the roots be properly opened out in planting, and laid in fresh moist soil, one or two good waterings will be all that is necessary; if dry weather follow, mulch thinly or thickly, according to the size of the plants and the nature of the soil. I am not now thinking or speaking of plants that are constantly grown in pots, and have occasionally, as they increase in size, to be shifted on into larger pots. The two cases are not identical, for w there may be instances in which it may be sirable to reduce and open out the roots a l when subjected to fresh potting, in the maj of instances with plants in vigorous growth less the ball is broken up the better; but in growing plants in pots it is easy to make thin stratum of new soil between the ball the sides of the pot firm, so that instead of d ing off the water from the roots, it in re holds plenty of moisture in suspension, w gives the desired encouragement to the gro of the plant. F

VEGETABLES.

Gathering Peas.—If prolongation bearing be desired, Peas should not gathered indiscriminately, as is often d but the oldest of the pods should be remo as often as possible after they have bec fit for use, inasmuch as one pod allowed to old will weaken the bearing properties of plant more than many young ones; therefor it is better to gather and throw away than al them to remain on the plants after they are for use. In plucking the pods from the ha both hands should be used, so as not to br and damage the plants, picking only such p as are moderately well filled, for if young a old be gathered together they boil unequal Gathering for exhibition is also an operat that does not generally get the care bestow upon it which it deserves. When Peas wanted for exhibition they are not unfrequen gathered by a garden boy, or by some such p son, who takes no pains to gather them ca fully. Gathering Peas for exhibition requir comparatively speaking, as much care as cutti Grapes, but how seldom do they receive th attention. Only those who have some kno ledge of the matter should be allowed to gath Peas for such a purpose. A pair of scisso should be used to cut off the pods, cutti them all with the same length of stalk, ca being taken not to touch the pods, for fear rubbing off the bloom. The pods should al be as nearly as possible of the same length a equally well filled.

Mushroom Culture.—Any one in t possession of an outhouse or cellar, and who c command a temperature of from 47° to 50°, c at any time produce a good supply of Mus rooms. The best method is to procure (fre from the stable) as much short manure as necessary to make a bed from 14 in. to 18 i deep, and any size the house can convenient hold; throw the manure in a heap for a fe days until it becomes heated, and the great part of the moisture is thrown off; then spre it out for a day or two until it is dry and qui cool; after that put it again in a heap, and allo it to remain five or six days; it will then be f to make a bed, which must not be deeper tha the measurements just given. The bed requir to be beaten or trodden so as to make it firm and thus secure a more lasting heat and preve the temperature from rising too high at first As soon as the heat has risen and come down t about 74°, the bed is ready to receive the spaw —half a bushel will spawn a bed 8 ft. to 10 f square; it requires to be broken into sma pieces, about the size of a large Walnut, an placed in the manure; the bed should then b covered about 2 in. deep with good garden soi and well beaten down at the time when th spawn is put into the bed. A covering of ha or straw, if put on, and carefully taken off whe the Mushrooms appear, will materially haste their growth. If the above directions be care fully attended to, Mushrooms will begin t appear in about six weeks. After the bed ha been spawned, it should on no account b watered unless when very dry; a small quan tity of water, the same temperature as that o the bed, only to be given at a time. The wall and floor of the house may be damped in orde to maintain a moist temperature.—J.

Seakale.—Seakale can be grown eithe from pieces of the whipthong-like roots, cut i lengths of 6 in. or 8 in., which is the bes method, or from seed sown early in April. If by the latter method, the seeds are, as usual put in four or six together, in rows at interval of 1½ ft. apart in the rows, and a like distanc

row from row, they will require to be thinned to a single plant in each case, and the ground between should be kept well hoed, so as to destroy weeds. By this method, in good, deep, well-enriched soil, a portion of the plants will be strong enough for taking up to forceduring the coming winter, the weaker ones being allowed to remain for another year. The great advantage in growing Seakale from root cuttings is, that the plants have the start of those grown from seed, the greater part making strong roots the first summer. Nearly all that are allowed to stand a second season will throw up flowers, which must be cut away, or they completely prevent the plants making strong crowns; and under any treatment, these plants that have so thrown up a flower-stem are not so good as they otherwise would be; even when cut out as soon as it makes its appearance it causes the root to form several crowns, which are individually weaker, and not so good for forcing as a plant with a single strong crown. The old system of growing Seakale in rows 3 in. apart, the plant being the same distance asunder in the rows, and forcing it in the bed under pots made for the purpose and covered with leaves or other fermenting material, is extravagant in every way, both as regards the ground it occupies, the cost of pots, and the amount of labour involved. Forced in this way, it also often has an earthy taste. In the cultivation of this vegetable it should be remembered that it is a marine plant, and, like its congeners, is fond of moisture and manure of a silene character. Those who reside on the coast cannot do better than dig into the soil where it is grown plenty of rotten sea-weed; where this is not at hand a good dressing of refuse salt—4 oz. or 6 oz. to the square yard—applied through the growing season, but not so as absolutely to touch the plants, will be found highly beneficial to the crop.

Winter Spinach.—To afford constant pickings of this excellent vegetable throughout the winter, a greater breadth of it must be sown than most other things, as it does not grow fast enough to keep up the supply. The object should be to get the plants to that stage when they are about going to seed before they cease growing. At this stage they have their first good leaves, and they are in a condition to stand the winter, and are sure to produce plentifully next spring and onwards till the end of May, well overlapping the early spring sowings. To produce these results sowing should not be delayed beyond the middle of August, and it is often necessary to sow a fortnight earlier than that, but, like the winter Turnips, two sowings had better be made if the ground can be spared. Spinach likes a deep, rich, and rather light soil. Decayed vegetable litter or stable manure well rotted suits it well, and the manure should be deeply dug into the ground. Winter or prickly Spinach is the kind to sow. Eighteen inches between the drills is wide enough for the winter crop, and the seed must not be covered in more than 1 in. deep. When the seedlings are fairly up they should be thinned to 3 in. or 4 in. between the plants, and afterwards the surface of the ground should be stirred with the hoe. In picking for use the bottom and oldest leaves should be gathered, and the younger left to grow for successional pickings.

Fillbasket Peas.—After three years' experience I find no Peas to equal Fillbasket. The size of the pods (filled tightly as drums), the great weight of the crop, and, lastly, the excellent flavour, all render this Pea the best that could be grown for market purposes.—R. G. B.

Early Snowball Cauliflower.—This is one of the best of Cauliflowers. Its characteristics are earliness, dwarfness, and closeness of head, which is solid and white. March-raised plants of it begin to head by the middle of June. I have cut beautiful heads from plants in twelve weeks from seed sown early in July. When cooked it is soft and tender.—D.

Picking off Potato Blossoms.—This should only be done in the case of such kinds as bear fruit so abundantly as to weigh the haulm to the ground, and exhaust the plant. As a rule, however, not one-third of the kinds grown are free seeders. In order to test the effects of picking off the blossoms upon the future crop, a kind should be selected that is a large seed-producer.—A.

Supplanter Pea.—This is one of the best Peas I have tried for some years. It is dwarf in habit, vigorous in growth, and a heavy cropper, many of the pods containing nine Peas. I have just had a small dish cooked; they are of a beautiful dark green colour when boiled; and good in flavour. This Pea, from its dwarf, sturdy habit, will be found especially valuable for small gardens.—R. A.

Celery Fly.—The larvæ of the Celery fly (Tephrites onopordinis) in some seasons do much mischief to the Celery crops. When Celery is infested with the larvæ the leaves become blistered and turn yellow, and as the grubs are underneath the blisters they may be crushed between the finger and thumb. The grubs, when full grown, descend into the earth and remain in the chrysalis state until the following spring, when they give birth to the fly, which in due course deposits the eggs on the leaves. Therefore, to prevent the attack of the pest next year, leaves badly infested should be removed and burnt, to prevent the grubs attaining their full development. Mr. Rose, of St. George's Hill, Byfleet, having been for some years troubled with Celery fly, filled a 36-gallon water-barrow with sufficient water to dissolve two 1-lb. boxes of Gishurst Compound, mixing with it 1 lb. of Pooley's Tobacco Powder, and filling up the whole with boiling water, stirring all well together. The mixture, after being allowed to stand for some twenty-four hours, was used to water the affected Celery plants—a watering-can with a very fine rose being used for the purpose. The plants having been well saturated with this mixture were then examined, and the grubs which had burrowed into the leaves were all found to be dead. The crop, too, seemed to be greatly improved, the mixture having evidently acted not only as an insecticide, but as a fertiliser. About three weeks after he repeated the same treatment with another crop with precisely the same results.

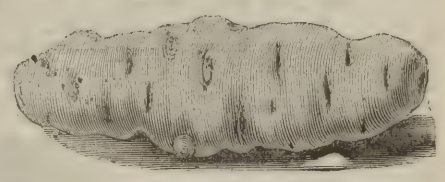
The Best Receipt for Making a Copying Machine.—Gelatine glue, 2½ oz., water, 5 oz.; let the above soak together for twelve hours, then add glycerine, 5¼ oz. fluid, carbolic acid, minims x. Dissolve glue in water at a gentle heat in a jar in pan of water, then add the other ingredients; stir, and strain through muslin and let it stand for about twelve hours. Ink.—A penny packet of Crawshaw's violet dye in ½ oz. of water, and plenty of moist sugar. Before using rub gently with a sponge and cold water, taking the wet off by placing a clean sheet of blotting-paper on the surface.—Subscriber.

Cats and Nemophila insignis.—Pour a little hot water over twopennyworth of bitter aloes, and then fill up with cold water to about two quarts. Let it stand all night, and next evening water the leaves of the Nemophila with it, and the cats will not touch it. The same bitter aloes will last through many waterings until they melt away. The smell is not strong enough to be noticed by us, but the cats dislike it.—E. R.

Sawdust in Gardens.—In reply to several queries, and for the benefit of those interested, I will just state my own experience in connection with sawdust in the garden. Two years ago I entered upon possession of my present house and garden (new), which latter was like a turnpike road, owing to the builders running over it. I had it well dug and manured, but did little or no good during the summer of 1879, for after every shower of rain, and being so much clay, it was set down quite hard again, and nothing would grow. That winter I had it well turned over, and all the ashes from the house sifted and turned in with plenty of manure. Last year it was a trifle better, but still bad. I asked this same question, and one or two correspondents wrote against using sawdust; I, however, last autumn determined to try it. Accordingly I obtained a few sacks, which I shook thickly all over the ground, more manure, more ashes, about a bushel of soot, a quantity of salt, and some fresh-slaked lime—this was all worked over three or four times during the winter. I have planted it this spring with Scarlet Runners, Dwarf Beans, Turnips, Lettuces, Radishes, and Onions, besides round the borders all sorts of flower seeds, and everything is doing well. The Beans have come up with only three or four failures where in previous years they could not break through the ground. I do not know that there would be any manurial properties in sawdust, but used as I have described I have turned a hard clay garden into a rich, light, and flourishing one. This would not be desirable for growing everything, but where a light soil is required I can recommend sawdust, if used in combination with the other ingredients. I may just mention that my garden is about the usual London size, viz., about 40 ft. long and 18 ft. wide; locality, Clapham.—Ferndale.

Horticultural Shows.—Your correspondent "Tremadoc" will find, as far as Strawberries are concerned, that fruit 1 oz. each will make a fine show sample, but then something depends upon sort and colour, and size alone don't make up for the lack of these. Even twenty fruits to the pound of President or Sir Joseph Paxton, the best show sorts, and handsome and of good colour, will be hard to beat. Excellence does not always depend upon weight. If it were so, the scales and not the eyes would be the most exact judges.—A. D.

The Vitelotte Potato.—This is the curious looking, sausage-shaped, little reddish Potato which comes to Covent Garden from



The Vitelotte Potato.

France. It is, we believe, used in preference to all others for Potato salads. It may often be seen exposed in the Central Row.

FRUIT.

HOW TO GROW STRAWBERRIES.

Soil.—In the cultivation of Strawberries the soil is of much importance. The best Strawberry soil is a good sound loam, and if rather unctious so much the better. A poor light soil is quite unfit for Strawberries, but much may be done by deep digging and liberal supplies of manure. A light soil should be trenched fully 2 ft. deep, and plenty of manure should be placed at the bottom of the trench. For a moderately stiff soil, two good spits, or about 20 in., will be found ample. In either case, the soil should be made rich with manure; and at the time of planting ample space should be given for future development.

Selection of Runners.—This is also an important consideration. Those only should be employed that are stout and healthy, with a good round, plump bud in the centre; and they must be from fruit-bearing plants. When runners are taken at random from unfruitful plants, the progeny generally proves unfruitful also. It is of the utmost advantage, in order to obtain the runners quick, and to get them soon into their fruiting quarters, that they be layered in small pots about 4 in. or 5 in. in diameter, filled with rich loamy soil, and mixed with a little rotten dung. While they remain in the pots they must not be allowed to suffer from want of water. They will make rapid progress in this rich compost; as soon as they are fairly rooted they can be cut away from the parent plants, and, as soon as convenient afterwards, they should be finally planted out before the pots become matted with roots. Such plants in dry weather succeed much better than pieces of runners without roots, those in pots commencing to grow at once, while the others dry up. Last autumn I formed a plantation with plants that had been layered in pots, with the exception of one row that came from a neighbour that had not been layered. Those that had been prepared by laying in pots are six times as large as those just alluded to, and are bearing six times as much fruit.

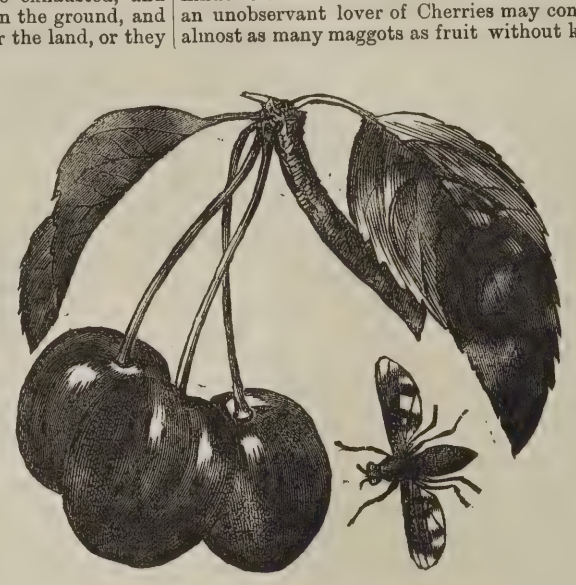
Planting.—In planting I perhaps give more space than many people think proper, but it has always been a first principle with me to

give crops ample room for development, and I rarely ever find any plant ungrateful for such liberality. The planting requires great care, for on this much of the ultimate success depends. I would here advise, if the soil be very light, that it be made firm before planting. When convenient, a portion of clay should be added to it, which will much improve the condition of the plants. If the ground be tolerably stiff this will be unnecessary. In planting, take care to make the ground firm about the roots. There is scarcely any soil so poor but what may be made to grow good Strawberries if properly managed. With regard to distance, we allow them, on an average, 27 in. or 30 in. from row to row, and about 2 ft. apart in the rows. I have known some, who have wished to make the most of their land, plant 1 ft. apart in the rows, and, after the first crop, destroy every alternate plant. Others I have known to have planted a row of Coleworts between each row, and to have pulled them up by the roots early in spring, leaving the whole space to the Strawberries. I never allow a bed to remain longer than three years before it is destroyed. Good fruit is obtained the first year after planting; the crop may be a little heavier the second year, but the fruit will be finer the first year. The third year the crop will be good, but the fruit will not be so fine as it was either the first or second; and, after it is gathered, the bearing powers of the plants will be exhausted, and they should either be burnt on the ground, and the ashes carefully spread over the land, or they should at once be dug in, thus restoring to the soil much of the matter which has been absorbed by the plants in their growth, and the absence of which has lessened fertility in a corresponding degree.

Varieties.—Where Alpine Strawberries are grown they may be treated as annuals, the old plants being destroyed every spring; they will then yield a good crop of fruit when others have done bearing. Eclipse with us is a great favourite, being a heavy cropper, of average flavour, and an excellent variety for pot culture. Sir J. Paxton is a handsome early variety, the flesh of which is very solid. Its flavour is very good, it forces well, is a very free grower, and quite hardy. Its appearance, which perhaps surpasses that of all others, renders it valuable for dessert. It is of a rich bright glossy colour, and should be in every collection. Dr. Hogg is very much like the British Queen, from which it was raised. It is, however, much finer, a better grower, has a better constitution, and has established itself as a general favourite. I am now gathering fruit from this variety which will average nearly 2 oz. each. It is one of the sweetest Strawberries grown. Cockscomb is a very fine and handsome variety when it succeeds, and is, where it is known, a great favourite. Vicomtesse Héricart de Thury is a good kind; the skin is deep scarlet in colour, the flesh firm, solid, and highly flavoured. The plant is vigorous and nearly as productive as Eclipse, though the berries are not quite so large. It continues a long time in bearing. The foliage resembles that of the old Keen's Seedling. It is a valuable variety for general cultivation. Amateur is a fine conical-shaped berry, with a rather acid flavour, but a heavy cropper. These kinds are what I have grown this season, and are now in full bearing.

Mulching.—For the purpose of keeping the fruit clean I use litter, which, if it does not meet the views of some fastidious people, has the advantage of thoroughly answering this purpose. On dry, gravelly soils little good can be accomplished in a dry hot season without plenty of water. This may be considered the life and soul of the Strawberry. With a hot sun and plenty of moisture, the fruit may be brought to great perfection; without them, it languishes. It is, therefore, obvious that a good supply of water is a necessary adjunct to every Strawberry garden. As soon as the blossoms begin to expand, the water should be given freely; and if, before the plants go out of bloom, they can be given a good soaking of manure water, it will almost double the weight of the crop. I consider the application of manure water to Strawberries, while they are in bloom, the secret of success. Gardeners of the old school used to allot certain quarters to the growth of certain crops, and more especially those of Strawberries; but I would particularly advise that such a practice should be abandoned, and a fresh situation for every succeeding plantation provided. When the ground has been occupied for several years with the same crop, it becomes exhausted; and my own experience has convinced me that Strawberries form no exception to this rule. R. E.

The Cherry Fly.—Some little two-winged flies, having their transparent wings elegantly blotched or marked like those of the fly figured in the accompanying wood-cut, may often be seen in orchards and gardens. The insect here figured is one of them. It feeds on the fruit of the Cherry; not, indeed, of every kind of Cherry, for it eschews all those which are acid or acidulous, but on the fruit of the sweet soft kinds it is in some seasons so abundant that an unobservant lover of Cherries may consume almost as many maggots as fruit without knowing it. The fly is common in the month of May in those districts where Cherries are much grown. It is black, with a yellow head, and its transparent wings are obscured by four transverse bands. The female fly lays one egg on each fruit. As soon as the maggot comes outof the egg it makes haste to bury itself in the Cherry, in order to consume the pulp. It is elongate, horn-shaped or conical, and white, but when writhing in the purplish or rosy pulp, and full of its juice, it partakes also of its colour. Generally speaking, its presence does not prevent the fruit increasing in size and arriving at maturity, although sometimes the Cherry drops a little before its perfect development. When the maggot is full grown it comes out of the Cherry and buries itself in the earth, where it passes into the pupa, in which state it remains until the month of May of the following year, when it comes out as the perfect insect.—A. M.



A Cherry Destroyer.

A Neglected Hardy Fruit.—It is only of late years that the Currant has received the attention from fruit growers that its quality and character justly deserve as a table or dessert fruit. A few neglected bushes of the old Red Dutch hid away in the garden yielded from year to year the scanty supply for making jelly, and occasionally table use. Since the more general introduction of the Cherry, La Versaillaise, and White Grape Currants, the culture and treatment of this fruit have been noticeably improved in every direction. The selfsame old Red Dutch, under high culture and annual prunings, yields large crops of superior quality of fruit; in fact, equals in point of pr fit any of the newer and larger sorts. It wi be found a saving of time and expense to pra tise summer pruning with the Currant. A lar part of the young shoots may be pulled out the older bushes early in July while the wood succulent and soft, and those to remain may shortened in by pinching with the thumb a finger. A bearing bush should be kept open a spreading; when this surplus young wood is r moved in July, the bearing parts a strengthened, and more and larger fruit is pr duced on the same surface the following yea —T.

Mildew on Vines.—I cured my Vines this troublesome pest when I was growing the same time the house full of plants, so wi the constant watering of the plants it was easy matter. In the first place, as soon as I sa mildew appear, I took 2 oz. of flour sulphur and put it in four gallons of water a well syringed the Vines with it. The followi week I syringed again, afterwards kept t Grapes as dry as possible, and then, with common pepper-box, I well dusted the bunch with the dry sulphur, and continued to do so long as I saw any mildew; but a long time b fore the Grapes coloured it had all disappeare and then I got a dusting-brush, such as is us in the drawing-room for dusting ornaments, a with it I thoroughly dusted all the sulphur the Grapes. I have been cutting this l three weeks, and not a spot of mildew can found on the berries.—C. DOE.

Thinning Grapes.—Grape-growers are agreed upon one point, namely, that the soo Grapes are thinned the better. If done so after the Vines are out of flower, the opera ought to be practically acquainted with t habits and characteristics of the different var ties, for if he be not, he will be unable at so ea a stage to distinguish between berries that fertilised and those that are not. To produc bunch of Grapes well formed in all points is, the case of some varieties, a difficult matter; others we have little more to do than to ass Nature. Every skilful Grape-grower kno that what is termed a well-finished bunch Grapes cannot be produced by chance or h hazard; it is much easier to grow large bunc than to finish them well. It is therefore har possible to over-estimate the value of ea thinning; the Vine is relieved of a needl drain upon it, and there is no need to distu the fruit in order that the operator may get the berries which he wishes to remove. evil belonging to thinning Grapes when in advanced stage of growth is, that if the po of the scissors gets moist with sap from fruit-stalks, and the acid touches the fruit, produces a spot that the bloom will ne cover, although the berries may be in ev other respect perfect. The hair-like stre that we sometimes see upon otherwise beauti black Grapes are often produced by the po of the scissors at an early stage of growth. is a well-known fact that the bloom of Gra roughly handled when growing never becor perfect.—J. T.

Hardy Annuals.—Annuals are loo upon as common flowers, but at best they but imperfectly known. If evidence of were needed, it could be found in lists of ki frequently recommended for cultivation, wh invariably include some that are scarcely wo growing, and omit others that are really valua Provided the soil be warm and light and situation dry, there are some annuals should be sown in autumn, as, unless the wi prove wet and severe, they root better, mak more profuse growth, and flower earlier tha sown in spring. Among those which may sown in autumn may be mentioned Nemophi Sweet Peas, Candytufts, Eschscholtzias, Sw Alyssum, Virginian Stock, and Limnan Douglasi and grandiflora. The following the names of some of the choicer kinds of ha annuals that well deserve a place in gard viz., Calendula pluvialis, a kind with la star-like, white flowers, having a dark cen dwarf and very free; C. Pongei, a double f of this, lasting a long time in bloom, and like a white Chrysanthemum, but lacking perfect arrangement of the petals; Centa

(Cyanus) depressa, a sort with large, showy, rich, pale blue flowers, very striking at this season of the year, and most useful to cut from; Calendrinia speciosa, pretty rose; Collinsia bicolor; C. multicolor, a purple form of C. bicolor, and very good; Gilia laciniata, purplish-mauve, the flowers borne in dense clusters, a capital plant to cut from; G. achilleæfolia, purple, very good; G. tricolor, effective; Helenium Douglasi, silvery foliage, large green flowers with orange centre, very effective; Linaria bipartita, white, margined with purple, very pretty, and remarkably free, growing from 12 in. to 15 in. in height; L. spartea, very bright orange and yellow, highly effective; Leptosiphon androsaceus in variety, which includes several very pretty colours, such as white, cream, lemon, rose and purple; Lasthenia californica, one of the most effective of the yellow-flowering spring annuals, the flowers golden yellow with an orange centre, very dwarf, free and effective, especially at a distance; Loasa tricolor, orange and red, dwarf, bushy growth, very good; Nemophila insignis; N. maculata, the flowers white spotted with purple, large and showy; N. discoidalis and its varieties are interesting, but they lack the fine bold form of N. insignis; Œnothera Bistorta Veitchi, with pure yellow flowers on a dwarf growth, very free and effective; Schizanthus pinnatus, very handsome, with dark blotches on the upper petals; S. gracilis, a slender growing form, the flowers pale purple with dark markings; S. pinnatus tigrioides, the upper segments flaked black on a golden ground, very pretty indeed; Silene rubella, dark magenta, very pretty; S. Pseudo-Atocion, bright pinkish rose, very bright and effective; and S. Saponaria, a very attractive pink, like a large-flowered Saponaria calabrica; Veronica syriaca, pretty bright blue, might be very effectively grown in pots for spring work; and the white and red Valerians, both of which are valuable to cut from just now. This may appear a long list, but it is a select one, and it represents the very best annuals in bloom in the middle of June.

Annuals for Pot Culture.—As annuals are, as a rule, better suited to the requirements of persons possessing only small gardens and little glass accommodation than more costly plants, the following selection from the large collection now being exhibited by Messrs. Carter & Co. at the Royal Botanic Gardens, Regent's Park, may be of some value. The plants in question are grown in 5-in. pots, and we think them much better this year than we have seen them in previous years. The majority of these annuals are best sown in autumn and protected from rough weather in winter. In spring they may be plunged in ashes in an open situation until they come into bloom, when they may be moved to the greenhouse or window. The following struck us as being the most effective and most easily grown: Collinsia bicolor (purple and white), C. alba (white, fine); Veronica syriaca, a little Lobelia-like plant, very pretty; Silene compacta, very dwarf, flowers large, and of a deep pink colour; Sphenogyne speciosa, bright yellow, very showy; Saponaria calabrica, rosy-pink; Nycterinia selaginoides, very pretty, varied coloured blossoms; Kaulfussia amelloides, dark blue and light blue; Gilia rosea splendens, rose; Linum grandiflorum, brilliant scarlet (fine); Leptosiphon roseus, one of the prettiest of all annuals; Nemophila insignis, blue and white; Nemophila discoidalis, very elegant, black with white edges; Mimulus cupreus, copper colour; Linaria bipartita splendens.

Prolonging the Bloom of Pansies.—Pansies are still among the most attractive flowers of our gardens. When they become somewhat tall, and, as not unfrequently happens in the south, infested with insects, it is a good plan to cut them close down; when this is done, especially if they get a good watering where needed, they soon push up strong clean shoots and flower again abundantly. In some southern gardens this practice is repeated with success several times during the season.—V.

The Pampas Grass.—The finest example of this I have seen was in Staffordshire. It was growing on a well-drained lawn; but holes 8 ft. deep, and filled with loam and cow manure, had been prepared for each plant. One plant, three years planted, was of immense circumference, the leaves unusually broad, long, and erect, and bore about two dozen flower-spikes, which stood nearly 12 ft. high. This was simply due to high culture in a climate not unfavourable to it, and no doubt the same could be accomplished in the neighbourhood of London. The plant requires a deep rich soil and abundance of moisture in summer, but a thoroughly dry bottom in winter. Under such conditions, I have seen it stand without any protection in winter in Scotland and flower annually.—S.

TALL BELLFLOWERS.

The Tall Campanula (Platycodon grandiflorum) is a thoroughly good herbaceous plant perfectly hardy in light dry soils, but most impatient—as, indeed, is P. autumnale—of damp and undrained situations, where its thick, fleshy roots are sure to decay—sometimes from below upwards, but more generally from above downwards, rotting off just at the neck. As the specific name would indicate, the flowers of P. grandiflorum are much larger than those of

The Tall Autumn Bellflower (Platycodon autumnale).

its closely-allied species P. autumnale, being as much as 2 in. to 3 in. across, of a deep blue colour, with a slightly slaty shade therein. They are produced in clusters at the summit of each of the branches, which proceed from the old root-stock, rising to a height of about 18 in., and being very slender at the base. If neglected in the matter of supports in their early stage of growth, they are sure to fall to the ground, thus giving the plant, however beautiful its blossoms may be, an untidy appearance. This a little forethought will readily obviate; but, be it noted, if such a result occurs from early neglect it is almost impossible to remedy it when the flowers are nearly developed, as branch after branch will break away, if made to assume the usually erect position, in the process of tying. When down, it will be better to leave them as they are, allowing the bloom to compensate, by its beauty, for any untidy appearance that the plant may present, merely taking the precaution to peg down the branches, else the sportive winds may whisk them round, and effect their total dislocation from the parent stock. Possibly the best position for such a plant would be overhanging a rock ledge in a sunny corner of the rock-garden, where a negligent character of growth would be in keeping with its situation, and its flowers, produced on a level with the eye, would be shown to great advantage. Like most of the Campanulas, it has a tendency to sport in colour, and to revert from blue to white through various modifications. Equally pretty and acceptable as a garden plant is the white variety, though it is by no means so frequently met with as the blue type.

Platycodon autumnale comes from China and Japan. Compared with P. grandiflorum, it is both taller and more robust in growth, attaining a height of 3 ft. under favourable circumstances; its leaves are narrower, but more densely arranged than those of P. grandiflorum; and its flowers, though smaller in size, are produced in greater quantities and are pretty evenly distributed along the upper half of the stems. This arrangement is shown in the accompanying representation of the plant. From its taller stature, and also the fact that its young shoots are far more woody and vigorous in their growth than those of P. grandiflorum, its true position should be in the second or third rank of the herbaceous border. Besides a white variety, we find in this species a tendency to become semi-double, by a sort of "hose-in-hose" re-duplication of the corolla, similar to what occurs in many of our Campanulas. There are one or two specialities in the matter of cultivation that apply equally to both species. First, as regards removal: if a strong well-established plant is to be transplanted, let it be done in the month of May, when growth has commenced; the thick fleshy roots are sure to be more or less damaged in the process, and Nature must be in an active state to repair such damage. If this be done during the winter, when the plant's energies are dormant, decay from the multilated parts of the root upwards is sure to take place, and the strong probability is that the entire root-stock will become affected. The spade must be looked upon as a decidedly warlike implement to use among these plants; one unlucky thrust through their brittle crowns and they, the plants, are gone for ever. Indeed, the less such an implement is used in borders devoted to the culture of herbaceous plants the better. In cutting down the stems in autumn it is usual, with a view to neatness, to cut close to the crown. This, however, as Nature herself teaches us, is not at all times a good practice, and this especially applies to the Platycodons; if cut close, their hollow stems form conducting pipes to carry water into the very heart of the plant, and the result is decay from above downwards. The same caution is applicable to many other plants besides Platycodons. As regards propagation, the best mode is that of raising seedlings. Unfortunately, our climate is ill-adapted to the maturation of seeds in general, and especially so with regard to Platycodons; they, however, seed freely on the Continent, and from that source a supply can readily be obtained. The young shoots, taken off when about 3 in. long, in spring will strike if placed in a gentle bottom-heat, but not freely. I have seen it stated that the fleshy roots, cut into lengths and placed under similar treatment, will grow, but my experience only realise the development of buds at the upper end, accompanied by decay in place of root-development below, and the final result was failure. To those who possess strong vigorous plants of either species, I would say: Don't disturb them, even at the pressing wish of your best friend, who may covet a portion thereof; rather get a packet of seed, and exercise all the patience you may happen to possess, and the result will be more satisfactory both to yourself and your friend than if your well-established plants had been mutilated in an attempt at division.—J. N.

IMPROVED FLOWER GARDENING.

I SEND a list of the plants which bloom year by year in my mixed border, some 90 ft. in length and 3 ft. 3 in. in width; a brick wall at the back, aspect east. They have cost me little or nothing. I beg a piece of a plant, or a few seeds, in exchange for any I may have, from the gardens of various friends or cottagers, and from time to time divide the plants. Occasionally I buy 6d. of road scrapings, with which I mulch various plants, as recommended in GARDENING ILLUSTRATED,

My entire back garden is about 90 ft. by 30 ft. I have in it, besides the mixed border, a small Grass plot, a round flower bed, a wild flower bed, six rows of Strawberries, from which I gather on an average some three dishes daily for a month; some Red Currant trees border the Strawberries, and from them I have a good supply of fruit; six Gooseberry trees amongst the Strawberries supply me with tarts for six weeks, and some ripen; a Rose bed, containing some thirty different Roses; a piece of ground for various herbs, with a border of black Currants, very free bearers; also a border of white Currants, which yield well; a row of Raspberries, great bearers; a mixed flower bed; a hermitage, covered with Hops and various sweet-scented climbers, shaded by a Sycamore tree; and lastly, a rockery—some twenty varieties of Ferns and various Stonecrops and wild flowers in it.

When I took possession of the garden its crop was Groundsel and Cabbages. My aim was to have as much variety as I could get in so small a space, and all who see the result say I have succeeded.

I omitted to say a Laurel hedge borders my garden on one side, and at the bottom and on the wall which backs the mixed border I have fruit trees, various Roses and climbers, and where the wall has bare spots I have stuck in Ferns and Stonecrops, creepers, Wallflowers, and such like. There is one path the length of the garden and four across it.

January.—Winter Rose (large and smaller), winter Aconite.

February.—Snowdrop, Bulbocodium vernum, Scilla bifolia, Crocus (yellow), Crocus (mauve).

March.—Yellow Primrose, mauve Primrose (double), white Violet, purple Violet, Czar Violet, single Daffodil, double Daffodil, Lungwort, white Arabis.

April.—Scarlet Daisy, white Daisy, purple Aubrietia, blue Forget-me-not, white Forget-me-not, Wallflowers (various colours), yellow single Hyacinth, pink Hyacinth (double), Omphalodes verna, Cowslip, purple Crocus, white Crocus, single Jonquil, double Jonquil, pink Fumitory, red Primrose, scarlet Anemone, Wood Sorrel, Adonis vernalis, mealy-leaved Polyanthus, yellow Alyssum, purple Pansy, Sweet Woodruff, Fritillary (purplish), quilled Daisy (very large), crimson Daisy, Speedwell, garden Bluebell, maroon Pansy, Narcissus, single Wood Anemone, double Wood Anemone.

May.—Brompton Stock, Tulips (various colours), Dielytra, Bladder Campion, Cowslip, double white Primrose, Globe-flower, Starch Grape Hyacinth, Fair Maids of France, London Pride, Lily of the Valley, Perennial Iberis, Bluebottle, Solomon's Seal, purple Lupin, Virginian Stock.

June.—Yellow Pansy, variegated Pansies (various), Viola (pale blue), Cerastium, China Rose (pink), Gloire de Dijon Rose, white Clematis (single), crimson Pæony, Musk, Brier Roses (yellow, white, and pink), Garlic (yellow), Deutzia, Spiræa japonica, Thalictrum, white Pink, pale mauve Pink, Turk's-cap Lily (yellow), orange Lily, China Rose (crimson), Eschscholtzia (yellow), Candytuft (white, purple), Monk's-hood, Agrostemma (pink), scarlet Lychnis, chocolate-blotched Pink, Nemophila insignis, Spiræa (white of two sorts), purple Crane's-bill, double white Primrose, Polyanthus (various shades), purple Iris (delicate pale narrow leaves), Star of Bethlehem, half Moss Rose, Céline Forestier, Roses Annie Wood and Général Jacqueminot, pink Pyrethrum, crimson Geum, yellow Geum, white Crane's-bill.

July.—Eccremocarpus scaber, Ivy-leaved Toad-flax, yellow Stonecrop, white Pyrethrum, Day Lily, Turk's-cap Lily (mottled), white Lily, Sweet Pea, Borage, Mignonette, Sweet William (various shades), blue Campanula, Poppy, Lythrum, Paul Verdier Rose, blush Rose, white Rose (common), Lamb's-ear, various Nasturtiums, Bergamot, Marigold, Clematis integrifolia, Everlasting Pea (large purple flower), Phloxes (various shades), Clove Pink, pink Carnation, Sweet Brier, Japanese Honeysuckle, common Honeysuckle, Lavender.

August, September, and October.—Many of the above flowers remain in bloom, and many bloom a second time.—MARK.

Amateurs' Flower Show.—A flower show is to be held on July 28—29 in the schoolroom adjoining the Wesleyan Chapel, Liverpool Road, London. There are vacant spaces for competitors. Any amateur wishing to exhibit any flowers may do so by first consulting Mr. Priest (hon. sec.) for particulars on any Wednesday evening on or before July 7.—S. C. M.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 5.—Potting Celosias, Primulas, and herbaceous Calceolarias; shifting Amarantus salicifolius, and potting off young Balsams; sowing Bath Cos Lettuce, Digswell Prize, and dwarf green Curled Endive and Spinach; earthing up Cucumbers and French Beans; planting out Sunflowers; sowing Cucumbers for late crops; potting Tree Carnations; also a large batch of Roses in good strong loam; planting out Autumn Giant and Self-protecting Broccoli; thinning Turnips and Early Horn Carrots; sticking Peas and getting them earthed up; pulling up all blind-hearted Cauliflowers and Broccoli, and filling up their places with good strong plants.

July 6.—Planting out a pit with Tender and True Cucumbers; training out and pegging down bedding plants; staking and tying in plants on borders, and clearing away decayed leaves and flowers; taking the nets off Strawberries and putting them on Currants; weeding amongst Leeks and giving them a little earthing up; potting Bouvardias; sowing Nonpareil and Advancer Peas, Cabbages, and Early Horn Carrots; putting in Pelargonium cuttings; clipping shrubs, and giving Peach trees in pots a top-dressing of manure; hoeing among fruit bushes and putting Epacrises in cold pits.

July 7.—Digging up a large piece of Gloucester Kidney Potatoes and placing them out thinly in the sun to ripen well for seed next season; watering Celery and Cardoons; also Lettuce and Endive beds; drawing drills for Spinach and well watering them previous to sowing; nailing and tying in all the leading shoots of fruit trees on walls and pinching back all the breast wood; potting up a large batch of President and Sir Charles Napier Strawberry runners for forcing; sowing Six-week Turnips, Long-podded Negro, and Sir Joseph Paxton French Beans; also a late crop of Broad Beans; putting in cuttings of Crassula coccinea; watering and mulching Peach trees and training conservatory creepers; placing Camellias in Peach house where they can be shaded a little.

July 8.—Sowing Ne Plus Ultra Peas; planting Ten-week Stocks; salting Asparagus and Carrot beds; nailing up Tomatoes and outdoor Figs and Vines, and watering Scarlet Runners with guano water; sowing Sweet Basil and Chervil; potting on Campanula pyramidalis; also young Cyclamens; taking up Shallots and Potato Onions and laying them out in the sun to ripen; gathering Camomile flowers, also Sweet Basil, Horehound, and other herbs for drying; weeding and cleaning all Box edgings in kitchen garden; hoeing and weeding amongst Peas; nailing and tying in Roses on walls and picking off all dead flowers; watering all newly-planted Broccoli, Cauliflowers, and Tomatoes, and renovating linings round manure frames.

July 9.—Sowing a border of Early Horn Carrots and a box of Intermediate Stocks; planting Asters; putting in cuttings of Poinsettias; clearing land of early Peas, and digging it for late Cauliflowers, also preparing land on which to plant Endive; watering French Beans with guano; leaving night air on Vineries and Peach houses in which fruit is ripening; sowing Lettuces and Endive; potting-up Strawberry runners for forcing; nailing in Tomatoes and closely stopping them; tying up Dahlias and thinning them out where growing too thickly; earthing up Celery when the soil is dry and in workable condition.

July 10.—Potting off herbaceous Calceolarias; layering Carnations; looking over Cucumbers and Melons, and stopping them where required; weeding and picking over carpet-bedding plants; cutting up turf and putting it in water to soak for layering Strawberries on; watering Celery and flower borders, and rolling down all gravel and Grass that require it; potting off seedling Musk plants, Coleus cuttings, and White Pinks; sowing Mignonette in pots for autumn flowering, also Prickly Spinach and Radishes; planting Cauliflowers for late supply, and pricking out Wallflowers; clipping hedges and cutting Laurels; pinching and pegging down plants in flower garden, and picking off all decayed flowers and leaves; sowing Turnips, having previously watered the drills into which a little guano has been placed; planting Neapolitan Cabbage Lettuce, Sweet Basil, and Marjoram; putting in cuttings of Kalosanthes, clipping Arabis and Cerastium edgings, and digging land for late French Beans.

Glasshouses.

Tuberous Begonias.—In addition to the immense quantity of seedlings raised by those who grow them in that way there are a large number of fine named varieties now becoming plentiful, varying very much in their general character from the long, pointed-flowered, drooping forms to those of the very broad-petalled kinds, the flowers of which in some cases are almost erect. The former are generally much the more profuse in flowering, and are more elegant. Taste in this, as in other matters, may vary, but there is no reason why a portion of each should not be grown. They are a very acceptable addition to greenhouse subjects, not only from the variety of bright as well as delicate colours which they afford, but also from their distinct habit and long continuance in bloom. But although their natural habit is to keep on flowering for months, their ability to make a full display for the greatest length of time of which they admit depends to a considerable extent upon sufficient nutriment at the roots. The pots in all cases must be large enough, proportionate to the size of the plants. I mention this particularly, as, through their free disposition to flower, beginning to bloom, as they do, almost as soon as the young plants are fairly in growth, it is not an unusual occurrence to see them allowed to remain in the comparatively small pots they begin to flower in, and so get completely exhausted before the season is over; but before they suffer in this manner they should be moved into others of a larger size. If the operation is carefully done without much disturbance of the roots, they will receive little or no check, in which way they may be grown to a large size where required. Clear, weak manure water will also assist them, but will not make up the deficiency where the quantity of soil available for the roots is much too small. Where any particular variety is required to be increased, this can be done by cuttings, as they strike freely, but the tubers formed do not in all cases grow. Some growers prefer to increase them by leaf cuttings, the tubers from which are smaller, but more disposed to go on afterwards. To keep them moderately bushy a good light position is necessary, as the shoots keep on extending as they bloom, and there is usually a reluctance to pinch out the points with a view to make them break back, for by so doing the flowers, to a certain extent, are for a time reduced in quantity.

Epiphyllum truncatum.—Through the amount of neglect that these plants will bear without causing their destruction, they sometimes receive so little attention, as to make a great deal of difference at the flowering time. The position that will suit them best, if such can be spared, is an empty pit with the lights well tilted, so that they can get plenty of air, in which way they will be neither liable to get saturated with wet by thunderstorms, nor to be blown over and broken by the wind when out-of-doors; but where a place of this description is not available they can be set out under a south wall, tying those that are got big and heavy to sticks to keep them from being blown about.

Large-flowered Pelargoniums.—Those that bloomed the earliest should, as their flowers get over, be placed out-of-doors in the full sun to ripen their growth previous to heading back. It is much better not to delay this operation with the earliest-flowered examples longer than when the principal head of bloom gets shabby, as upon getting the shoots ripened and their being cut down at the proper season depends their ability to flower early next year; do not in the first instance withhold water so as to cause the foliage to flag and die off through the deprivation of moisture, but as soon as the leaves droop give a little, gradually withholding it until growth is so checked that the foliage will retain an erect position even when the soil is quite dry.

Fancy Pelargoniums.—These plants, with their beautiful delicate colours, are now so little in favour, that they are comparatively seldom met with; still, to those who like to grow some subjects of a naturally formal habit by way of contrast to others of more free and elegant outline, with a disposition to produce a complete sheet of flowers of the softest tints, it would be difficult to point to any plant that will supply the place of these Pelargoniums. In their case it is not necessary to allow the soil to get so dry through the absence of water as in that of the stronger-growing selfs, and if exposed out-of-doors, care must be taken that they do not get too wet during heavy rains, as they are very impatient of over much moisture at the roots, the effect of which is generally the destruction of the fibres, and that kills the plants.

Mignonette.—Where large examples of this are grown for winter flowering they necessarily require a much longer time to grow than the small pots of late summer and autumn-sown Mignonette generally in use; but where there is an attempt to grow this plant to a considerable size, although comparatively easily managed, unless its wants are constantly attended to, the specimens will be more remarkable for size than condition, as evidenced by the spare, yellow-looking leaves and small spikes of bloom that weak, attenuated plants often display. Mignonette does not like much disturbance as

regards the roots, and it is well to get the early-grown stock in sufficiently large pots before the season is too far advanced, so as to avoid any cramping at the roots, for should this occur, it is a difficult matter to get them to move freely afterwards; use the soil fairly enriched and pot firmly, giving the plants a good light position, placing them far enough apart in the house or pit in which they are grown; stop and tie out the shoots as growth progresses. The ordinary bushy or pyramidal form will in most cases be found to look the best. The ugly wire trellises sometimes used for Mignonette, where at the time of blooming it frequently happens that the wire is as conspicuous as the shoots of the plants, cannot be too much condemned. Look well to the undersides of the leaves for green fly and red spider, which, if present, very quickly ruin the plants. Water, to which has been added a handful of soot to the gallon, stirred up daily for a week, and the plants from time to time syringed with it, has an excellent effect in removing these insects, and also in rendering the foliage unpalatable to them. A little soot water applied to the soil both assists growth and helps to keep the leaves of that dark green colour which adds so much to their appearance as well as to the requisite strength. A little more seed may with advantage now be put in to grow some plants on in small or medium-sized pots with a view to their blooming before those latest sown.

Cinerarias.—The earliest sown plants should not be kept longer out of their blooming pots than when they have got the soil in those they already occupy fairly filled with roots, for with these again any check will result in the destruction of their lower leaves, the loss of which not only destroys their appearance, but so far weakens them that it is never possible to get plants which have thus suffered to produce anything like the head of flowers they otherwise would do. Keep the early and later-sown stocks where they can be slightly shaded from the sun during the hottest part of the day, particularly in the case of plants that are treated so as to make free vigorous growth, for where the foliage thus gets to a large size it is, as a matter of course, softer than when of a small stunted character; some well decomposed leaf-mould added to the soil, as well as thoroughly rotten manure, assists free growth. Where grown from suckers, and the plants from which these are taken were, after blooming, as they ought to be, planted out, the suckers much sooner attain a good size, and they will in every way be easier managed than when kept in pots. As soon as any of the suckers are large enough take them off, allowing the small ones succeeding to remain longer. When so grown it is not well to remove them from the old plants until they have attained a good size and plenty of roots, plants from such invariably keeping the lead of those taken off whilst small and weak.

Primulas.—Plants raised from the earliest sowing will soon be ready for moving into their flowering pots—5 in. or 6 in. in diameter will be large enough; ram the soil tolerably hard, by which means I have found them less disposed to produce leaves with long weak stalks that have a tendency to damp off; in potting keep the plants well down, so as to avoid any bare stem betwixt the soil and lower leaves; frames or pits facing the north, with the plants raised close up to the glass, and thinly shaded during the middle of the day, will be found the right position to place them in, the result being growth which will not only afford a full complement of flowers, but which will be much less disposed to damp in the winter.

Chrysanthemums.—Nothing tends more to preserve the foliage, to assist growth, and to minimise the drying influence of hot weather than keeping the pots plunged up to their rims; if coal ashes be available they are much the best, as they keep out worms, which, though not injuring them to the extent of more delicate-growing subjects, are still much better absent from the soil. The plants should now be treated in accordance with whatever form they are to be grown in. The ordinary bushy form of tying, by the use of a few sticks keeping the branches sufficiently far apart to allow plenty of air to get to the whole, is the most generally useful; but some dwarf standards that are grown to a single stem from 2 ft. to 2½ ft. or 3 ft. in height and stopped, so as to cause them to branch freely, are particularly useful when the plants are to be used in rooms, halls, or corridors, and also for relieving the too even surface which a stage full of these plants when in bloom often presents. If the plants are at all affected with green fly, the shoots should be repeatedly dipped in Tobacco water, which they will bear using stronger than most plants, until the insects are completely destroyed, to keep them clear from which the whole stock should be syringed feely with clean water every evening when the weather is dry. It is well not to grow a greater number than is required, or there is time at command to give sufficient attention to, for, as with most other things, a better result may be attained with a limited number of plants well grown than larger quantities worse managed.

Flower Garden.

Grass has grown vigorously during the past month, and is still continuing to do so, necessitating frequent mowing and rolling to keep it in good condition; now is the time to form a good sward, and the closer and oftener it is cut and rolled the better will the bottom be, and the more effectually will it withstand the ensuing winter, should it be severe; few things add more to the beauty of gardens than good and well-kept Grass, and the work is so simple that it should be by no means neglected.

During wet weather it is almost impossible to maintain borders free from weeds; in those instances where they are much over-run the best plan will be to lightly dig them over, taking care not to injure the roots of the trees, shrubs, or herbaceous plants; where this cannot be done the weeds must be hoed up and raked off or hand-picked. Overgrown shrubs may be pruned back to within proper limits, and all herbaceous plants requiring it should have supports. Annuals must be thinned out, and all subjects in the way of Asters, Stocks, Helichrysums, &c., still in store should be planted out in favourable weather without delay. Seeds of perennials may also be freely sown for stock next year or for spring bedding.

Fruit.

Incessant warfare must still be waged in the case of aphides. Soap-suds or clear water applied with force are the best antidotes, but they require frequent repetition, and before washing and dressing the trees, all the curled and blistered leaves and the worst effected and superfluous shoots should be removed, and the final tying in of shoots should be delayed until the trees are quite clean and healthy. Pears are now sufficiently advanced to have all the breast-wood cut away at about, say, four joints from the main stem; if cut closer they are apt to again break into strong wood growth rather than form fruit-buds. Currant and Gooseberry bushes have made much growth, and thinning it out will therefore be a matter of necessity. Summer pruning of these has many advantages, not the least being that the trees can be trimmed into any shape desired, and the fruit at the same time be exposed to the influences of the atmosphere. Currants and Cherries are changing colour, and will require protection from birds; any that are to be reserved for a considerable time should be cleared of aphides and be closely covered up with hexagon netting. Ripe Strawberries often suffer more from mice and slugs than from birds, and it will be desirable to at once adopt precautionary measures against these; trap the former with the common figure of 4 trap, and the latter by means of baits of bran. If Raspberry stools have not yet been thinned they should at once be reduced to four shoots each, or if thickly together three will be ample. Mulch the ground about them with good rotten manure, for drought would soon have a deteriorating effect.

Vegetables.

No sooner is one crop planted or sown than another requires thinning, another earthing and weeding, and another lifting or harvesting, in order that the ground may again be prepared for cropping. Such is now the case with Shallots and Garlic, which, in many instances, will be ready to be taken up; they should not be allowed to remain after the tops have dried off, but pulled up and left on the ground a day or two to dry, and afterwards tied up in convenient bundles for use, and hung up in a shed or other airy, cool, dry room. The ground where they have been grown, if well dressed when they were planted, will not now require digging, but simply levelling and weeding, drawing drills afterwards for the sowing of Endive or black-seeded Bath Cos Lettuce for early winter use. If it be thought desirable to preserve the stock of any good variety of vegetables, such as Cauliflowers, Lettuce, &c., select the most perfect types for seeding, and stake or otherwise mark them in order that they do not get cut when the crop is being used. No two kinds of Cabbages, Brussels Sprouts, or Cauliflowers should ever be seeded together if the stock be desired pure, for bees are wonderful hybridists, and are not particular as to how or on what they operate.

Tomatoes are now growing freely, and will require to have their growths trained or tied in; if there be a tendency to strong growth, repress it by severe pinching of the lateral growth, an operation which also promotes fruitfulness. If the fruit set too thickly, thin it out and remove all the large leaves that keep the light off it. As a rule, high feeding is not necessary for Tomatoes, but if bearing freely they may be assisted by an occasional watering with weak liquid manure.

Spinach.—Where this is required all through the season seed must be sown regularly every fortnight, as it will not stand much beyond that period without running to seed; any vacant spot that can be cleared from other plants may be used for this purpose. As the crop of Cabbage is cut strip the leaves from the stumps, as they only harbour slugs and caterpillars; give the ground a good soaking with manure water to assist the stools to throw out fresh side shoots, which will furnish through the remainder of the season a useful supply of tender sprouts.

Leeks which were sown at the proper time and thinned out in the seed-bed, so as to give them enough room to grow will now be in good order for planting. The ground they are to occupy should be well dug to the depth of 15 in. and broken fine, so as not to leave any large hard lumps. Plant in rows 15 in. apart, with 8 in. or 9 in. between the plants, and in planting use a stout dibber that will make holes 8 in. deep and 2 in. or a little more in diameter. In these place the plants, dropping in soil to the depth of 1 in. or 2 in., but no more, leaving the rest of the hole open and giving a good watering, so as to settle the soil. By only partially filling the hole the requisite air gets down to the roots, and the opening above affords space for the stems of the plants to thicken, and also blanches them in a way that imparts the peculiar delicate flavour which a well-grown Leek possesses. If the ground be good and well enriched, they will, under this treatment, grow almost as thick as a man's wrist, and are far superior to the small tough, strong-flavoured specimens of this vegetable which are often to be met with.

GLASSHOUSES AND FRAMES.

WATERING PLANTS IN POTS.

WATERING constitutes a very important part of plant culture. As a rule, all greenhouse plants of free growth want a constant and steady supply of moisture at the roots during the growing season. The soil should neither be soured nor rendered sodden through repeated waterings that are not required, nor through defective drainage—a fertile source of mischief in this respect—nor should it ever be even moderately dry. This, however, is just the difficulty. A plant should never be allowed to suffer in the least from want of water, for it means starvation and worse; and yet it should not be overwatered. The beneficial effects of plunging plants in pots in soil, ashes, Cocoa-nut fibre, &c., are wholly the result of an equable degree of moisture and temperature at the roots; in watering, therefore, these conditions must be imitated as far as possible. The first essential is to drain the pot well, and the next is to leave room on the surface for it to hold water sufficient to soak the ball thoroughly. The practice of filling the pots too full of soil in potting cannot be too severely condemned, and yet it is all but universal. The consequence is, that when the plants have to be watered, nothing like the necessary quantity can be given them at once, and there is all the trouble of going over them again, perhaps two or three times, until each is thoroughly soaked. But what follows if the

plants have only been served with a driblet each? By midday they are probably flagging, and if they happen to be noticed, a quantity of water is fetched from the nearest tank and dashed in among them immediately, as a temporary supply; and thus the practice goes on, entailing the most disastrous results. The time to water is early in the morning, or in the evening when the heat of the day is over, and always when the ventilation is reduced to its minimum. Water should never be given when evaporation is going on rapidly, particularly in greenhouses and conservatories, where the plants are usually placed on dry, airy shelves and stages, and exposed to draught on all sides. Some plants are more impatient of neglect in watering than others. Among these is the Heath, which, always being potted in peat well rammed into the pot, requires considerable attention in this respect. Heaths should always be watered before they get dry. Plants that have been shifted on from one sized pot to another are very apt to get dry in the centre of the ball; and when this occurs no amount of watering will soak it—the water simply runs past it, and in the end the plant gets sickly and dies. Pushing a small stake down the centre of the ball usually reveals the state of affairs; and if the ball is found to be dry, steeping it in a tub of water for a day or more, or until the bubbles of air ceased to rise to the surface, is the best remedy. The stake test is not to be recommended, however, unless drought is suspected, for it injures the roots in its passage through the soil. The Camellia is another subject often ruined through careless watering. Planted out, it grows like a Laurel bush; but in pots or tubs, unhealthy, scraggy specimens, that drop their buds just before they should expand, are too common. The Camellia is an uncommonly close and abundant rooter; the roots permeate the soil thickly in every direction, the ball near the stem being generally a complete mass of fibres, which drink up an inconceivable quantity of water; and if this be not supplied regularly, the soil gets dust-dry, and then, as with the Heath, steeping is the only alternative. Years ago, I had occasion to re-tub a large number of Camellias. They had been top-dressed frequently, but had not been shifted for a number of years, and many of the larger plants were in an unsatisfactory condition, not having made such growth annually as might have been expected. The shifting explained matters, however, for nearly all were dry in the centre of the balls. It was suspected that the plants had suffered a year or two before from too little watering, and copious supplies had been given them at intervals since that time, but, as it now appeared, without effect. After removing the outer soil and top-dressings, which did not contain many roots, the balls were found to be dry, matted, and so hard, that it required a good dig with a stout Oak peg to make any impression on them. They were all steeped for four-and-twenty hours in the water-tanks, and afterwards repotted, many of them going into less tubs or pots than those from which they were shifted. Plenty of room was left for water, and a kind of basin was formed round the necks of the plants to insure its passage through the ball, instead of down between the sides of the pot and the soil—a channel through which the water too frequently finds its way in pot-bound plants. Even in the case of Camellias planted out in a bed, after having been grown in pots for a time, it is advisable to guard against the balls becoming dry. I have seen plants lifted which were just as bad in this respect as if they had been in a pot. When they are planted out young and the roots are allowed to extend freely there is little or no danger. Among other susceptible subjects in the matter of watering are Cinerarias and Calceolarias; neither can bear drought at the root without injury. They will either go back, and perhaps go off altogether, or they will be attacked by aphides; and there are no plants so difficult to fumigate effectively as those just named—in fact, I never care to subject them to Tobacco smoke if it can be avoided. Both enjoy light and sunshine, but a cool bottom of flag or sand they must have; also good drainage and copious waterings. Under these conditions they are rarely troubled with insects, and the plants grow freely. Among stove plants Ferns are perhaps the most sensitive. They like and must have plenty of water at the roots, and they enjoy a position above a water-tank, where the evaporation is constant, but they do not like immersing in the water, even to the extent of 1 in. in the pot. In an aquatic house this was tried with Ferns and Caladiums, but neither throve so well as judiciously-watered plants grown in the shade. C.

A Wall Fernery.

LANTANAS AND THEIR CULTURE.

OWING to the fact that the Lantana is not so brilliantly effective as the generality of flowering plants now so extensively employed for summer bedding and general decorative purposes, it has never become very popular in English gardens. Now and then one sees this plant well cared for; but in the generality of large establishments it does not appear to be held in high estimation. And yet the Lantana possesses certain valuable properties which recommend it to the attention of every gardener. Not only is it of extremely easy culture and propagation, but it is also of a very vigorous, enduring nature; and in the case of many of the varieties the flowers exhibit shades of colour of a rather uncommon description. Those who have soils of a light, porous, parching description to deal with would find in the Lantana a valuable and trustworthy auxiliary, as, owing to its wiry and enduring nature, it thrives where many flowering subjects can scarcely be kept alive. This plant may be regarded as a very good substitute for the Verbena, and may be used with good results where this favourite bedding subject is a complete failure. In Continental gardens the Lantana, owing to its capability of resisting long periods of drought with impunity, is a great favourite for open-air decoration, and is also largely grown as a pot plant for market. The Lantana is indeed, owing to its neat compact habit, an excellent plant for pot culture, flowering profusely in small pots, and being equally well adapted for the formation of large specimens, in which state it is very useful for the embellishment of large conservatories, corridors, and such like places. With a little management, too, it may be had in full bloom from early spring up to quite late in the autumn. For early flowering, the great point is to secure neat little well-furnished specimens established in 2½-in. and 4½-in. pots by the autumn months. The present is an excellent time to put in a batch of cuttings, which, if well attended to, will speedily make roots, and if potted off directly and grown along without check, will be all that can be desired by the end of the growing season. In any case, even where the Lantana is used only for the open air, a few cuttings of each kind should be struck, unless a plant or so of every variety can be kept in pots, for this plant is apt, especially in dry summers, to run so much to flower as to render it a matter of some difficulty to procure fine cuttings; and unless the wood is very succulent they fail to make root with sufficient freedom. A cutting of which the wood has become in the least hard and dry should never be inserted; for even if it emits roots, it never develops into a free vigorous specimen.

The Lantana will strike readily at the present time under a hand-light in a close house. When rooted, pot off in some light well-sanded soil, keep them rather close for a few days, and then place them in a cold frame. Ventilate freely, drawing the sashes completely off on still moist nights. Shade slightly for an hour or so in the middle of the day in very hot weather, using the syringe freely both morning and evening. When the young plants have become established in small pots, stop them back two joints, and shift them into the next-sized pots as soon as they push into growth again. By keeping them well pinched back throughout the summer they will form compact little bushes by the early autumn months, when, having well filled the soil with fibres, they should be placed in the most airy and sunniest situation in the garden, there to remain until the advent of inclement weather, when they will have to be placed in a cool greenhouse. The Lantana, unlike the generality of soft-wooded flowering plants, does not need any great care during the winter season. Until the return of the bright days, and when starting anew into growth, the plants may be stored away in a corner of the structure; or they may be kept safer underneath the staging, provided they receive a certain portion of light and do not get at all soddened by drip. The best way is to lay the pots on their sides; when resting on the damp earth the soil will remain for a considerable time in a sufficiently moist condition, thus obviating the necessity for frequent waterings—an advantage in the present instance, for the Lantana dislikes much moisture at the root during its resting season, a slight overdose of water being sufficient to kill the fibres.

If it is desired to bring any portion of these plants into bloom at an early period of the year, they should be placed in a light warm house by the beginning of January. When fairly started into growth they may be either shifted into larger pots or liberally fed with weak manure water. For very early flowering the latter course is preferable, as a plant always forces best when the pot is crammed with fibres. A few plants should be retained for propagating purposes. Free healthy cuttings taken off during the early spring months strike readily and grow with great freedom, making, if grown along in a genial atmosphere and carefully hardened off, the best of plants for bedding out; or, instead of turning them out in the open air, they may be shifted along and kept growing freely in a cold frame, when they will prove very serviceable for summer and autumn conservatory and window decoration. The Lantana has a very pleasing appearance when grown in standard form. When elevated upon a stem some 2 ft. or 3 ft. in height, allowing the head of foliage to develop somewhat unrestrainedly, the decorative capacities of this plant are displayed to the best advantage. Plants thus grown are excellent subjects for the formation of groups, and are likewise admirably well adapted for dotting amongst dwarf-growing flowering plants in the open air.

JOHN CORNHILL.

Ferns on Old Walls.—The accompanying engraving offers a suggestion of beautifying old walls that might be carried out in many gardens where old stone or brick walls exist. If small plants were obtained in spring and planted between the stones or bricks with a little soil, they would soon become established, and form a perfect wall Fernery; or seeds might be sown with every prospect of success. Walls shaded from the hot sun of summer are best suited to this purpose; and at the foot of such walls a rockery might be made, which might be planted also with Ferns or alpine rock plants.

The Cape Ivy (Senecio macrogiossus).—Most people are acquainted with the German or Parlour Ivy, that quick-growing tender plant now so popular for window and basket culture,

and so useful for soon covering a screen in the garden. The German Ivy is not an Ivy proper at all, but belongs to the great Composite family; it is Senecio scandens, and own brother to the Groundsel, a common weed, to the Tassel flower of the gardens (sometimes called Cacalia), and to that golden-yellow Squaw-weed, or Golden Rag-wort (Senecio aureus), which is everywhere so bright, especially in wet places, in spring. This new plant has received in Europe the name of Cape Ivy, and it well distinguishes it from the other climber, which, though called German, comes from the same locality—South Africa. After growing the plant for a few weeks we had an engraving made of it, which, while the leaves are not so large as they would be on a stronger plant, gives a good idea of their shape and Ivy-like appearance. While the colour of the better known German Ivy is of a light and rather yellowish-green, the leaves of this have the dark and blackish-green so peculiar to true Ivy, and which gives to this newer one a richness which the other lacks; besides this, the leaves have much more substance than those of the other, though they are still soft, and have not the rigidity of those of true Ivy. This Cape Ivy is quite as well suited to house culture as the other. If it proves to be as manageable as the German Ivy, it must become very popular, on account of its finer colour and closer resemblance to Ivy.—*American Agriculturist.* [It may, no doubt, be now obtained at any of the principal London nurseries.]

ANSWERS TO QUERIES.

2303.—**Blight on Fruit Trees.**—Anything that cleanses the young growth from filth or insects is beneficial to a fruit tree, and soapsuds if employed in time are exceedingly useful; but it does not follow that a solution of soda will be equally so, as if given too strong it will be hurtful. Try it on a branch or two first, and regulate the strength by the effect observed. Soda has a saline basis, and should be used carefully and after experimental trials.—E. H.

2299.—**Vines not Fruiting.**—Keep the growth of the Vines thin to secure well ripened wood. This matter is often neglected by amateurs, but it is a most essential point in Grape culture. Probably also the roots are too deep; if they could be carefully lifted early in September and brought nearer the surface fruitfulness will be obtained. When the lifting is done the house should be shaded till the roots are active again.

2283.—**Asphalte for Walks.**—There are various ways of asphalting a walk. The following is a good, simple, and cheap one:—Have the foundation levelled; put on it a coat of coal tar, and sift some road sand or coal ashes over it thickly. When dry put on another coat of tar and sifted ashes or sand, and so on until a sufficient substance has been given, or, say, until four coats have accumulated. The work should be done when the weather and the materials are dry, and the roller should be used over the sand to level and firm the surface.—E. H.

2308.—**Shelter for a Garden.**—This evil is often felt in walled gardens, and is generally remedied either by planting hedges or erecting screens of Reeds at right angles across the border. Wherever it can be done, it is best to plant a belt of fast-growing trees on the windward side outside the garden to break the force of the wind, and lift it over the garden. For a temporary purpose a screen made of Reeds will suffice.

2325.—**Roses Losing their Buds.**—The Rose trees are out of health; probably the roots are in a bad condition. Perhaps the soil is in a stagnant state; the presence of the worms seems to suggest as much. Thin out some of the old wood, and encourage new shoots to break from the bottom or any other part of the trees, which should be laid in full length. In the autumn examine the state of the roots, and remedy any defects observed.—E.

2324.—**Summer Pruning Pyramid Fruit Trees.**—In pruning pyramid fruit trees the leaders should be left unshortened till the annual growth is about finished, unless the trees are young, and it is desired to produce lateral shoots to fill up anywhere. About the middle of June is in the majority of seasons the time to begin, commencing first with those trees that are making the strongest wood, and shortening back all shoots that are not required for filling up the framework of the tree to four leaves. The spurs thus left will require shortening when the leaves fall, cutting to a bud if possible.—E.

2336.—**Grubs in New Land.**—The grubs can be reduced in number by burying pieces of raw vegetables, such as Turnips, Beet, &c., and examine them frequently; they do not eat their way into the baits as the wireworm does, but will be found coiled up near. Cabbage or Lettuce stalks will answer the purpose as well. Soot placed round the stems of Cauliflowers or any other plants it may be important to save, watering it in, will generally keep the grubs at a distance. Whenever a plant flags in the sunshine, scrape the earth away from the stem, and the grub will generally be found eating the bark round the stem just beneath the surface of the soil.—E.

2327.—**Asparagus near the Sea.**—Some shelter would doubtless be desirable, but

The Cape Ivy (Senecio macroglossus).

after the first year or two, when the Asparagus plants were well established the wind would be less hurtful. In windy places, the first year at any rate, the main stems will require support. When the shoots become more numerous they support and shelter each other. The best plan will be to sow seeds on hills 3 ft. apart, half-a-dozen on a hill, thinning to two or three when the strongest can be distinguished. In this way the plantation will acommodate itself to the wind and doubtless be profitable.—H.

2339.—**Rabbit-proof Plants.**—There are but few things really rabbit-proof where these mischievous animals are numerous, but I have never known them to touch Rhododendrons. The following may be planted with a reasonable chance of escaping:—Common Yew, Box, St. John's-wort, Ivy (various), Yuccas, Pampas Grass, Ghent Azaleas, Kalmias, Bird Cherry (Cerasus Padus) Lilacs, Privets, Syringas, Evergreen Oaks, Potentillas, Pyrethrums, Acanthus Achillea (various), Monkshood, and, of course' most of the things that die close down in winte such as bulbs, as it is only during severe weather, when all other food is buried beneath the snow, that they are so destructive. Rabbits very seeds often nibble at newly-planted things when old-established plants of the same speices escape; and in making new plantations it is a good plan to put wire round at first till the plants become established.—E. H.

2369.—**Children's Flower Show.**—If plants, that are strong and of good quality, of such things as Balsams, pyramidal Stocks, Asters (dwarf Chrysanthemums), Fuchsias, Scarlet and other Pelargoniums, shrubby Calceolarias, Petunias, various kinds of Sedums and Echeverias (such as secunda glauca), small pieces of Musk and the Creeping Jenny, Isolepis gracilis, Golden Pyrethrum, Perilla, Phlox Drummondi, and similar easily-grown things be now obtained and distributed amongst the children, with suitable clean pots, and especially good pot soil, then something may be produced by them worthy of exhibition at a flower show next September. If "W. G." could pay a visit to Covent Garden or other plant market, he would find plants of all these and numerous other things there being sold at a cheap rate; or they may be obtained through nurserymen who advertise in our columns from time to time. Seed sown now or cuttings put in would give but meagre results indeed for this season. The cultivation of the plants grown by children, and, indeed, by all who have only windows for greenhouses, is so difficult, that it is not possible to obtain results other than such as complained of. It is not possible that under such conditions they can do more than give all the air and light that is available, and it will be found that the best specimens are those grown where these conditions are most favourable. A collection of vegetables for September should consist of Potatoes, Turnips, Carrots, Vegetable Marrows, Runner and Dwarf French Beans, Cabbages, Cos Lettuce, or say any six of these varieties. Potatoes should have been planted in April; Turnips may be sown at once, Carrots last month; Marrows must be planted out; Runner Beans should be up and Dwarf Beans sown now; Cabbage plants ready to put out and Cos Lettuce sown at once. Flower shows of the simplest kind need long preparation, and should always have full six months' start to give hope of success.—A. D.

2358.—**Camellias Out-of-doors.**—There is really no reason why Camellias should not succeed near Bedford, or indeed anywhere throughout the midland districts. The soil most favoured is a black or as often called peaty loam, but stiff clayey loams are not favourable. Camellias are absolutely hardy, even more hardy than the Laurel, and when once established rarely if ever are injured by frost. The annual growth is never luxuriant, and is always made early, and therefore is well ripened by the summer sun. It has been the rule in many places to protect them in winter even on walls, but that has been only where the old and now exploded notion prevailed that the plants are tender. Outdoor cultivation really does not materially differ from that of any other hardy shrub; they simply want when once established to be let alone, except that in hot dry

weather a little mulching with decayed manure would be useful. The plants prefer moderate shade to full exposure to the sun. Camellias being turned out of pots may be planted at almost any time, but such plants should have been partially prepared for planting out by a gradual process of hardening, as most plants are raised and grown on under glass, and that is not a good preparation for sudden and permanent exposure in the open air. If the plants were plunged whilst in pots in a shady place, and in ashes for a year first, they would go out with much less risk. March or October are both good months for planting, the ball being loosened and the roots somewhat distributed. Camellias are almost all equally hardy, but these kinds do well in the open air—Alba plena, Imbricata, Lavinia Maggi, Lady Hume's Blush, Striata, Saccoi Nova, Mathiotiana, Cactifolia, Beali, Storyi, &c. There is no reason why newer sorts should not do equally as well.—A. D.

2381.—**Clay's Fertiliser.**—In reply to "V. A. V.," I cannot say what effect Clay's Fertiliser would have as a manure for farming, but I must in justice to it say that it is the most wonderful in effect of any manure I have ever tried on pot plants, or on such things as Asters, Carnations, Bouvardias, Solanums, or other plants usually planted out. Its properties do not get washed out quickly, but make the soil permanently better after each dressing. It is the only manure I use, as with it I can sell a stimulated plant, knowing that the means of keeping up its health goes in the pot with it. The proportions I use is a 4½-in. potful of Clay's to a barrowload of soil for potting, and one part of Clay's to ten of soil for top-dressing. It should never be given in water.—JAMES O'BRIEN, *Pine-apple Nursery.*

2344.—**Maggots on Holly Leaves.**—If the Hollies are only small specimens, crushing the maggots between the finger and thumb may perhaps be possible; syringing the trees with something distasteful will be useful if done about the time the flies lay their eggs. A solution of soft soap, 3 oz. to the gallon, or a decoction or infusion of Quassia chips, 3 oz. to the gallon, would be still more effectual. Dustings of soot, if carefully applied, will also be serviceable. Hellebore powder, dusted on when the trees are damp through a muslin bag, will kill the maggots; so would fresh lime applied in the same manner.

2332.—**Club-footed Cabbages.**—The Cabbage grub, which is the origin of the disease called clubbing, is the larva of a species of beetle. Removing the crop to fresh ground, dressing the roots in a puddle of soot, lime, and liquid manure just previous to planting are safe practices to follow. Making wide holes with a crowbar and filling them with compost, of which soot and lime form a part, and planting a young plant in each hole, is a sure way of securing a good clean crop. Probably the old seeds may have produced wiry, harder stemmed plants than the new, and so escaped their attack.—E. H.

2354.—**Honeydew.**—There can be no doubt whatever that Honeydew so called is but the exudation of the aphis or green fly, ejected by them at certain periods, but not always. Probably the state of the weather or condition of the plant upon which they feed or their own age may have something to do with it. We got recently good observation on this matter in connection with a large Rose tree under glass, which, during the prevalence of dry parching east winds, suddenly became greatly infested with aphis. In a few days the upper sides of the leaves near to the insects were covered with the exudation, and on those on which the matter was thinnest it was easy to observe that it had been cast on the surface from a certain direction and then slightly run, just as a drop of moisture of any kind might do. All trees affected by aphis will exhibit this feature. The Black Currant leaves just now are much so, the insects gathering upon the underside of one leaf and ejecting their exudations upon the surface of the leaf or leaves next below. Ants notoriously love to infest plants where aphis are gathered, not, as some have thought, to feed upon the insects, but simply to cull from them the sweets or Honeydew thus stored by the aphis.—A. D.

—— This fluid is considered to be produced by a species of aphis furnished with two minute tubular vessels at the end of the body called cornicles. From these they eject a sweet drop which we call honeydew. This species of aphis is more especially partial to Roses, Geraniums, and Cinerarias. Ants are very fond of this substance, and will infest the same plants for the sake of it, though not attacking the aphis itself. —S. S.

2356.—**Spotted Mimuli.**—A plant of Mimulus that has made shoots 20 in. in length is no doubt somewhat out of form and condition. The best plan in such case is to cut the shoots close back to the pot and encourage new growth from the root. Cuttings taken from such new growth would strike freely, but it is very doubtful whether any made from the old shoots would do so. The flagging is most probably due to the soot water, which may have been too strong. Soot is a very stimulating manure, and requires to be used with discretion. A dose that a healthy plant may take up with impunity may kill another one of weak habit. If you have seed, sow at once and raise young plants—that is the best way to get stock.—D.

2305.—**Perennial Pinks.**—We must infer that by the term perennial Pinks you want single-flowered kinds of the common garden Pink. Of this section of the Carnation—for Pinks are but forms of the Carnation—single kinds are not common, and Pink seed is scarce; but seed of the single Clove Carnation is plentiful enough, and should be obtainable from any seedsman. Single Carnations of various hues of colour are very largely grown around London for market sale, but the larger portion go into the hands of the hawkers, who purchase them at about 6d. per dozen in April and May, and then, in some cases, hawk them about the country with the roots massed and labels attached, to induce the unwary purchaser to believe that they are double kinds. All these may be bought cheaply in the market, and all seed freely; they make admirable cut flowers, although much less beautiful than are blooms of the double kinds. In the trade these single kinds are called "Jacks," and the best strain is that which has the broadest leaves, because such plants are thought most to resemble the double sorts. Continental seed, such as is sent over here at a moderate price by the French growers, also give a large proportion of single flowers; but some are double, and often very good. A fault with many of these Continental seedlings is to bloom so freely that they make no wood or grass; and thus the plants die in the winter. The Indian Pinks (Dianthus chinensis), &c., are all very beautiful; many are hardy, and they make a magnificent bed, but during severe winters could not be relied upon. The "Jacks" give the hardiest strain of single kinds.—A. D.

2289.—**Propagating Deutzia gracilis.**—Deutzia gracilis, when well grown, will throw up new growth or suckers from the roots, and these may be taken off in the autumn with a sharp knife, a portion of root being attached, cut back to a few inches, and then be potted. The portions cut away make the best of cuttings. These should be about 3 in. in length, and, if put into pots and kept in a frame or cool house, will, as a rule, strike well in the spring. If placed in a gentle bottom heat, rooting will be much accelerated. The young plants will do well in a cool frame in all seasons, but make more rapid growth in heat, and the earlier the new wood is produced the earlier is it matured. —D.

2290.—**Antirrhinums in Pots.**—The finest spikes of blooms from Antirrhinums are, as a rule, obtained from plants that are turned out early in the spring or have stood the winter. These will throw up strong flowering shoots from the root, and produce grand spikes of bloom. If wanted to bloom in pots, good plants ought to be had, if the healthy seedlings be shifted into 7 in. pots and have some good soil, but it is certain that the finest spikes, nevertheless, will only come from the root shoots. We have just now in bloom a robust plant of a fine striped kind that has produced some nine or ten fine spikes, from 6 in. to 9 in. in length, and yet the plant is growing only on solid brickwork. This fact seems to show that the Antirrhinum is a semi-rock plant. Our rule is to sow seed in the spring to produce plants to bloom in the autumn, and these, standing the winter if not too severe, produce grand spikes of bloom the following June.—D.

2382.—**Plants for Exhibition.**—For the purpose of having Pentstemons, Antirrhinums, and annuals in pots in bloom at the end of August it is not necessary to have any kind of artificial warmth, and if under glass at all the best place is a cold frame, but most of these things are best in the open air. Still, the present treatment must depend upon the state of the plants, as if advanced then it may be necessary to keep them in a cool place to retard them; whilst if not too forward then, the plants may want to be pushed on in a warmer situation. Pentstemons and Antirrhinums ought to be fairly strong plants, well established in 6-in. pots. Pansies should be well rooted cuttings, newly potted in good soil and kept growing on in a cool place. The first flowers from Pansies are always the finest. Stocks and Asters should be strong and well established in pots, the former about two or three plants in 6-in. pots; the latter are best if lifted from the open ground into pots when in bloom, as they are then so much stronger. Geraniums, as you call them, but really Pelargoniums, should be well rooted plants also in 6-in. pots, and should be kept pinched and have all the bloom-buds gathered off until five weeks before the time for showing them. From that time they may be allowed to come away and produce all the flowers possible, and the same rule will apply to Fuchsias. The application of liquid manure must be regulated by the state of the plants. If well established and the pots are full of roots, then weak liquid manure may be given twice a week, but it is better to err on the side of weakness than strength, as in the latter case a few overdoses may destroy the roots. As in the exhibition of any kind of plants habit goes a long way, care must be taken not to have the plants drawn or lanky, but as bushy and compact as possible. —A. D.

2398.—**Annuals for Exhibition.**—It is altogether too late to sow annuals to flower next August. This should have been done in April or early in May. If plants of the kinds required can be purchased so much the better, but if not, then we cannot help you in that direction beyond pointing out the best sorts for the purpose named. Six good hardy annuals are Mignonette, new carmine Candytuft, large Indian Pink (Dianthus Heddewigi), Godetia Lady Albemarle, Chrysanthemum Dunnetti (double yellow), and Clarkia elegans (double red). Of half-hardy annuals, pyramidal Stocks, Victoria Asters, African Marigolds, Phlox Drummondi, spikes of Balsams, and double dwarf Larkspurs.—A. D.

2403.—**Plants for Empty Room.**—At this time of the year almost any ordinary plants that thrive in pots may be grown in an empty room if the light be good and plenty of air given. For foliage, India-rubber plants, green and variegated Aralias, a cool Palm or two, such as Chamærops Fortunei, a few greenhouse Ferns, such as Adiantum cuneatum and Pteris serrulata, will do; and for flower nothing will be better than zonal and nosegay Pelargoniums of various colours, Fuchsias, Petunias, shrubby Calceolarias, Balsams, and, indeed, any kind of greenhouse plants that may be in season. How they would thrive must be determined by the attention given, light, air, and other essential conditions to plant life.—A.

2383.—**Spiræa japonica Failing.**—Having no knowledge of the conditions under which the Spiræa japonica was grown, it would be difficult to give an exact reason. It might have been exposed to strong gaslight, or it might have been permitted to get too dry at the root, or it might have been swamped by moisture, although this latter case is not so likely, as the Spiræa takes up a large quantity of water when it is fairly pot-bound. There can be but two reasons—either injured at the root by some poisonous water, or by exposure to an atmosphere that was full of poisonous gasses.—D.

2391.—**Hollyhocks not Growing.**—That Hollyhocks do not now show flowering stems is no proof that they will not bloom this year, as they may yet do so and flower quite late in the autumn. Their lateness must doubtless be attributed to their being so recently planted. This should have been done in February or March to have enabled the plants to get well established. That the leaves thrown up are on long stalks would seem to indicate that the sur-

roundings serve to draw the foliage; still, there can be no doubt but that flower-stalks will come presently.—D.

2292.—**Anemones not Blooming.**—It is most likely that the soil in which Anemones are growing but do not bloom does not suit them; or it may have been that the excessive rainfall of last summer did a lot of mischief to the roots, decaying rather than ripening them. It will no doubt be wisest to lift the roots and examine them, and, if sound, store away in dry sand in a cool place until the end of September, and then replant in good free soil.—D.

2412.—**Double and Single Stocks.**—It is not possible to distinguish double from single Stocks before they are in bud, but the moment buds appear it is possible so to do by picking off a bud from each plant and testing it between the teeth; if gritty, then it is single, because it contains fertile organs; if not gritty, then it will be double. It is our experience in relation to that beautiful summer pyramidal Stock Mauve Beauty that all the strongest plants are double, the weaker ones being single, but this may not be a safe rule to go by in all cases.—D.

2366.—**Worms in Gardens.**—Strew fresh soot and warm slaked lime over your garden in the evening, and the worms will disappear as if by magic. They detest these dressings. Lime water made by allowing a few lumps of lime to impregnate a tubful of water, and then using the liquid when it is clear through a watering-pot, will kill many. It is not probable that worms have much to do with thinness of Beans and Peas; the seed is no doubt at fault, as what you complain of is universal. Get a few ducklings to run in the garden; they are notable devourers of worms.—A.

2370.—**Sparrows Eating Pyrethrum.**—When birds eat Golden Feather, they show a singularly depraved taste and a curious fancy. There is really no method of preventing this but by protecting the plants from the sparrows, or by shooting the marauders.—D.

2371.—**Prickly Comfrey.**—We do not find that fowls are partial to the Comfrey, and cannot think that even pigs would care for it, although cows like it. Boil some and give it to the poultry and pigs, and see if they like it, but in a raw state it is most improbable that it will prove acceptable.—D.

2337.—**Plantains on Lawns.**—Plantains on lawns are difficult to eradicate, but perseverance in digging them up will accomplish it in time. Vitriol or salt dropped into the cavity from which the crown of the plant has been taken should be effective. In bad cases it will be better and cheaper to pare up the turf, dig the land over, and sow good Grass seeds next September.—E.

2345.—**Pigeon Manure for Plants.**—This is a difficult question to answer, as the strength that would kill one plant might benefit another. It is of a hot nature, something like guano, which is neither more nor less than birds' dung. It should be used cautiously and experimentally at first. Thus, say, for potting Fuchsias mix ¼ peck of pigeons' dung with 2 bushels of ordinary compost. The birds' dung should be kept dry.—H.

2346.—**Barked Apple Trees.**—The Apple trees will probably die. The only thing that can be done is to cover the wounded parts with something to keep the air out till new bark can be formed, but if the inner bark is gone even this will not avail. A paste made up of old mortar and cow dung and placed over the wound may be useful.—E.

2342.—**Daisies on Lawns.**—It is not an easy matter to keep a lawn free from Daisies, as the seeds are often scattered by the wind; and if only a few plants gain access they soon seed and increase. Watson's Lawn Sand has been highly recommended, and may be obtained from most seedsmen; and the old-fashioned plan of digging them out by the aid of women and children is a good one.—E. H.

2328.—**Food for Roses.**—By giving the beds a good dressing of newly-slaked lime. Superphosphates are good dressings for such soils, and may be applied now, sprinkling it over the surface and hoeing it in.—E.

2338.—**Roses not Blooming.**—They will flower next year, as neither refuse to flower when they grow well. They usually flower freely on the young wood of the previous year, and as this year they are making plenty of wood and are looking healthy, they will doubtless flower finely next spring.—E. H.

2337.—**Cement for Flue.**—I constructed a flue in my greenhouse with the following mixture:—Equal quantities of fresh cow manure, newly-slaked lime, and road drift (say from a limestone road). I have seen neither smoke nor cracks yet, and can recommend it.—DEPOT.

2341—**Chemical Manure.**—It should have been stated for what crops the manure is required. I am not aware that any special apparatus is necessary for mixing the generality of artificial manures. The following is a substitute for guano, and merely requires well mixing in a dry state:—Sulphate of soda (dry), 11 lb.; wood ashes, 28 lb.; common salt, ¾ cwt.; crude sulphate of ammonia, ½ cwt.; bone dust, 7 bush.—F. W. P.

2292.—**Sweet Brier.**—The Sweet Brier is not so hardy as the common Dog Rose, but it generally lives in the thick hedges, sheltered by other plants, through the severest winters. The last two winters have been destructive to many plants, and the Sweet Brier, where isolated or unsheltered, has suffered severely in many places. Lighten the soil with road scrapings, and try again with seedling plants.—E. H.

2302.—**Moving Asparagus.**—As the Asparagus plants were only planted last March, it will do them but little harm, if any, to move them again now. Open trenches 6 in. or 8 in. deep, and wide enough to contain the roots when laid out straight; let the trenches be 3 ft. apart, and the plants 18 in. apart in them; cover the crown of the roots about 1 in.; water them well in, and mulch at once with manure. In the course of two or three years every alternate plant should be taken out, leaving them 3 ft. apart.—E. H.

2291.—**Vines.**—It will under the close pruning system, but in so confined a space one Vine will probably be better than two. If a Black Hamburgh was planted now, Foster's Seedling or the Buckland Sweetwater may be grafted upon it by inarching in the course of a year or two, so that, if desired, black and white Grapes may be had from one Vine as well as if two are planted.—E. H.

2297.—**Vines Suddenly Failing.**—The Vines have been kept in too confined an atmosphere too heavily charged with moisture. The symptoms all point in this direction. Petroleum oil will not mix with water, therefore I do not think the use of the barrels in the way described can have had any bad effect so far as the water is concerned.—E. H.

2304.—**Summer Pruning Fruit Trees.**—The middle or end of June was early enough this season, unless the trees are unusually vigorous, to begin the general pruning; but gross shoots should be pinched whenever they appear to be acting the part of robbers, as all evil habits are best nipped in the bud.—E. H.

Although the following questions are answered by the Editor, we shall be obliged to any of our readers who may think well to answer them again.

2417.—**Sowing Sweet Peas.**—Is anything gained by sowing Sweet Peas in August or September, so that they make little plants before winter?—F. A. S. [Sow in November, and you will get good plants and early bloom. Sow again in March or April for succession.]

2418.—**Collinsia verna.**—Should seed of this be fresh, and must it be sown in the autumn? Where can I get it? Any information about this annual would greatly oblige.—F. A. S. [Good seed can be got at any good seed house. It may be sown either in autumn or spring.]

2419.—**Vegetable Marrows.**—My Vegetable Marrow plants, although very small and not appearing to grow luxuriantly, are breaking into flower. Should these flowers be pinched off?—LANGLEY HURST. [Yes, until the plants get well established.]

2420.—**Raspberry Canes.**—My Raspberry canes, which were put in last autumn, although in vigorous bearing and covered with fruit, have no young shoots rising from the stools. I have mulched them with rotten manure. Does this injure the young shoots in any way?—LANGLEY HURST. [They will probably throw up suckers after the fruit is gathered and the old canes begin to decline. The manure will help them.]

2421.—**Cotoneaster and Thuja.**—*X. Y. Z.*—The Cotoneaster belongs to a family of small trees or trailing shrubs belonging to the Order Rosaceæ, inhabiting the northern parts of Europe and the mountains of India. The Thuja is a genus included in the Cupressineous division of Coniferæ, and consists of evergreen trees, natives of North America.

2422.—**Plants for Vinery.**—I have a cool Vinery; could I grow Vegetable Marrows or Cucumbers in it? The Vines quite shade all parts. Also what could I utilise the place for during the winter? I have just enough heat to keep out the frost. Could I keep Calceolaria cuttings in it, or old roots of Geraniums?—DARBY. [Neither Cucumbers nor Vegetable Marrows would succeed under the Vines. You could grow some of the hardier kinds of Ferns, also Camellias, Cytisus, Coronillas, and similar plants, which flower in spring, and which can be placed outside before the Vines offer them too much shade. Calceolarias, Geraniums, Fuchsias, &c., might be kept in the house during winter.]

2423.—**Rosebuds Falling.**—*F. L. Kingsley.*—The buds sent appear to have been eaten by a maggot. The reason the perfect buds drop off may be due to dryness at the roots.

2424.—**Onions Failing.**—*Malvern.*—It is the Onion maggot that has attacked your crop. There is no real remedy for it now; you might try a dusting of soot and a little salt. Next year you must try and prevent it in the preparation of the seed bed.

2425.—**Cactus not Flowering.**—*S. G. P.*—Keep them in a sunny position and admit plenty of air. Repot them after flowering if they are pot-bound, but too large pots should be avoided.

2426.—**French Beans.**—*Boss.*—All plants raised from seed lift the seed above the ground when they germinate unless buried too deeply. Try Mustard and Cress, and similar seeds.

2427.—**Green Fly and Gooseberry Caterpillars.** *P. D.*—We have lately given abundance of information on this subject in GARDENING. Search a few of the recent numbers.

2428.—**Spiræa japonica.**—The leaves of some of my plants of Spiræa japonica, recently planted out, are getting dry and withered at the edges. What is the reason?—J. E. [The Spiræa is an herbaceous plant which dies down annually; it is, therefore, only natural that the old leaves should begin to get brown, and especially in plants recently planted.]

2429.—**Vines Failing.**—I have a Grape Vine planted out-of-doors against a wall and trained inside an unheated greenhouse. For a month or two past manure water from a cesspool has been copiously administered three or four times a week, but the leaves are making very little growth and the fruit is all going off.—J. E. [Such frequent watering with strong manure water is enough to kill any plant. The soil has become sour and sodden, and the roots refuse to grow in it. One thorough soaking with water once a fortnight would have been ample. Do not water any more until the soil shows signs of getting dry. Then fork up the surface soil carefully to allow it to sweeten, and when you water use clear soft water, and the Vine may recover.]

2430.—**Destroying Slugs.**—*J. B.*—Lay heaps of bran about the garden, and examine them early every morning.

2431.—**Polyanthus and Auriculas.**—*Jules Margottin.*—The best time to divide these is as soon as they have done blooming, but it may still be done. The best situation is one where plenty of light and fresh air can reach the plants, but where the direct rays of the sun cannot fall on them.

2432.—**Rose Blooms Shrivelling.**—*Jules Margottin.*—Roses are in most places very poor this season, therefore we cannot account for your Rose blooms shrivelling. Even the Briers in many places are entirely killed.

2433.—**Moving Fruit Trees and Shrubs.**—*T. F. M.*—Small fruit trees or shrubs might be moved with a fair chance of success in the middle of September provided their roots be not injured and are packed in soil or Cocoa-nut fibre to prevent them getting dried up during removal from one place to the other. After planting, well water and mulch with manure if possible.

2434.—**Double Sweet Williams.**—*G. A. S.*—These are not uncommon, and, in our opinion, are not so pretty as the single ones. The one sent has no particular merit.

2435.—**Holes in Cherry Leaves.**—*E. L. B.*—If you can find no insect on the trees we can assign no cause for the leaves being perforated. Make a close examination.

2436.—**Retarding Fuchsias.**—*Protector.*—We would advise you to pick off some of the forwardest blooms if they are likely to be too far advanced by the show day. This will give the others a chance of opening to succeed them. Keep the plants in a cool, airy place and away from the sun, and take care they do not want for water at the roots. Manure water must not be given if you wish to retard the blooms.

2437.—**Potatoes among other Crops.**—About three months ago I put some manure in the ground and amongst it was a large quantity of Potato peelings, which grew, and the tops spring up in great numbers and are very troublesome. I have used the hoe and rake to them many times, but they appear to spring up as vigorously as ever. [Pull them up by the roots.]

2438.—**Tobacco Water.**—*A. E. C.*—An ounce of common Tobacco will make a gallon of liquor of good strength. Place the Tobacco in a piece of muslin or thin canvas and let it soak in the water, which should be hot to begin with, for a few hours, squeezing the Tobacco occasionally to extract the juice.

2439.—**Geranium Leaves Spotted.**—*H. King.*—This is not a disease, but is often caused at this time of the year by watering the plants when the sun is on them, or keeping them confined too much in the morning. The sun scorches the leaves when wet. The flowers are not well developed. Give the plants a little clear soot water.

2440.—**Tuberous Begonias.**—*H. King.*—These will grow and flower well at this time of year in pots of light rich soil under glass, or in the open ground. We have seen some very good ones grown in a sunny window.

2441.—**Soil for Wardian Case.**—*Glasgow.*—Peat or turfy loam in equal parts and plenty of sand is the best, but either peat or loam may be used separately if more convenient, always adding plenty of coarse silver sand or river sand.

New Geranium.—*C. Doe.*—We fear your Geranium is far behind (from a florist's point of view) many kinds in the same way already in commerce.

Double Mimulus.—*J. W. F.*—The flower sent is what is termed a Hose-in-hose. Such freaks occur in Primroses, Gloxinias, &c. It is worth cultivating.

Sweet Williams.—*Glasgow.*—We should not call the flowers of Sweet William sweetly scented.

Buds Falling off Fuchsias.—*Glasgow.*—Too little air and too much or too little water will cause this

Names of Plants.—*Gaston.*—We cannot name a plant from a mere description; send us flowers and leaves, and no doubt we can name it.——*E. C.*—Mitrana coccinea.——*May.*—1, Adiantum Capillus Veneris; 2, Platyloma rotundifolia; 3, a variety of common Phlox; 4, Sedum spathulifolium variegatum; 5, Tradescantia virginica; 6, Selaginella Kraussiana.——*St. R. E.*—1, Hemerocallis Dumortieri; 2, Aconitum Napellus; 3, Fumaria muralis.——*Wildflower.*—Whitlow Pepperwort (Lepidium Draba).——*Monaghan.*—Common Yellow Rattle (Rhinanthus minor).——*T. E. J.*—We cannot name plants from single leaves.

QUERIES.

2442.—**Cultivating Indian Plants.**—Can any one give me directions for the growth of the following Indian plants which I have raised from seed—Bixa orellana, Clitoria, Bauhinia, Asparagus racemosus, Acacia glauca? Which, if any, are stove plants?—B.

2443.—**Peat Charcoal for Celery.**—Can any one tell me whether peat charcoal is a good thing for Celery, and how it should be used, and what quantity should be given?—NOVICE.

2444.—**Irises from Morocco.**—What should I do with some Iris bulbs imported from Morocco this spring? They were dug up after flowering in the month of April, and have since been out of the ground. In Morocco they flower in the winter and rest in the summer, and prefer moist ground.

2445.—**Skeleton Leaves.**—Can any of your readers inform me how the skeleton leaves are done like what was exhibited at South Kensington at the late summer flower show?—SKELETON.

2446.—**Cement for Window Boxes.**—Can any one inform me by what means tiles are fastened to wooden boxes for window-sills? I have tried plaster of Paris and Portland cement, but to no purpose; neither adhere to the wood, and but very little to the tiles.—THOS. GRAY.

2447.—**Growing Tobacco.**—Will any reader inform me how to grow Tobacco? and how much I am allowed to grow? and also how to dry it for fumigating purposes?—CONSTANT READER.

2448.—**Treatment of Grevillea robusta.**—I bought a plant of this the other day, and some of the leaves now fall off. It is in a large room where gas is seldom used. I should be glad to know how to treat it; I have no greenhouse, but a large light dry cellar, free from frost, that does for some plants in the winter?—J. K.

2449.—**Insects on White Thorn Hedges.**—My White Thorn hedge, which is 1000 yards long, has been covered for three years with small insects which form webs like the red spider and is now half dead. Can any one suggest a remedy?—E.

2450.—**Slugs, Snails, and Wireworms.**—My garden is infested with these. I have been advised to use paraffin, 1 gill to the gallon. I have also been advised to use salt; I am afraid to injure the crop; I have had two rows of Beans destroyed. Can any reader oblige one in trouble by kindly advising me? I have used both lime and soot; I think the soot has checked them a little.—BOSS.

2451.—**The Currant Caterpillar.**—Can any reader suggest a cure for the Currant Caterpillar, which for the last two years has entirely stripped my Currant bushes, eating all the leaves and destroying the wood so entirely, that the fruit dies and drops off when half ripe?—CATERPILLAR.

2452.—**Gooseberry Caterpillar.**—Will any one kindly tell me what quantity of Hellebore powder (recommended to destroy Gooseberry caterpillars) to put to 1 gallon of water to syringe the trees with? and whether using a poison, the fruit in its present advanced state would be injured in flavour?—CONSTANT READER.

2453.—**Lily of the Valley not Flowering.**—I have read with interest "J. C.'s" note under this head, and wish to ask a question as to situation. Will a border at the foot of the north wall of a house suit the Lily of the Valley? They get a few indirect rays of sun during a portion of the day for say two months of the year. Ought they to be more exposed to sunlight than this? if so, what other plants would flourish on such a border?—LANGLEY HURST.

2454.—**Fuchsias for Greenhouses.**—Will any reader give me the names of six of the best Fuchsias for greenhouse decoration?—DEPOT.

2455.—**Raising Begonias from Seed.**—Can any one tell me an easy way of raising tuberous-rooted Begonias from seed? I have tried and failed several times. I sowed the seed in 6-in. pots in a mixture of leaf mould, sand, and loam, sifted, with plenty of drainage, but the seed did not germinate. The pot was placed in a hotbed, and kept moist and shaded.—MAY.

2456.—**Propagating Wistarias.**—Will some reader tell me the best way and time to propagate Wistarias? also what soil do they require?—GASTON.

2457.—**Elder Trees from Cuttings.**—I struck some cuttings of Elder this spring which flourished well for a time, and then suddenly drooped and died away. What was the probable cause? When I pulled one of them up I found attached to it a curious kind of insect or worm. I often see the same kind of insect under a brick or stone on the surface of the soil.—INEXPERIENCE.

2458.—**Auriculas.**—I shall be obliged to any good authority who will specify the essential and distinctive characteristics indispensable in a perfect flower; and also state the names of the different races or classes, and what is the true dividing line between the alpine and the fancy or show Auriculas.—BERG.

2459.—**Hedges for a Garden.**—Will someone inform me what is the best kind of hedge to grow? and when is the proper time to plant it? I want to divide my garden from my neighbours, and, of course, should prefer a hedge that would grow rapidly; at present I have only a wire fence.—T. H. T.

2460.—**Paralysed Fowls.**—I have a Dorking hen which is very much troubled with paralysis. Could any of your readers inform me of a cure?—SOUTHPORT.

2461.—**Ants in Lawns.**—Can any reader tell me the best way of destroying ants' nests in Grass plots, and if it can be done without killing the Grass? I have hitherto used boiling water, but this of necessity kills the Grass also, and leaves a yellow barren spot all the summer.—JOHN B. C.

Sending Plants by Post.—Sir,—You find I have stopped my advertisement in your paper; I wish to give the reason, and ask for some information. A fortnight since the postmaster of Barnstaple stopped my boxes of Ferns, and would not allow them to go by post. To this I sent a letter to the secretary of the General Post Office, and I enclose his reply. I am at a loss to understand why nurserymen advertise Ferns and plants sent free by post if this is the case. In the "Post Office Guide" (p. 15) there is nothing said about plants. My Ferns are sent in strong cardboard boxes, and packed in dry Moss, and the boxes papered, so that not the least damp can come through. I should be glad to know what others say in this matter.—E. GILL. "General Post Office, London, June 17, 1880. Sir,—In reply to your letter of the 13th instant, I have to inform you that the rules of the department prohibit the transmission by post of live plants, inasmuch as they must necessarily be more or less damp, and must be sent with a certain quantity of mould, and the postmaster of Barnstaple acted rightly, therefore, in stopping the packets to which you refer. In regard to the packets containing live plants which you mention as being frequently sent by other persons, I can only assume that they have passed owing to officers dealing with them failing to detect the nature of their contents.—S. A. BLACKWOOD, Secretary."

THE HOUSEHOLD.

How to Cook Green Peas.—Shell one peck of Peas; fill a saucepan half-full of water with one tablespoonful of salt, four lumps of sugar, and a good-sized bunch of Mint. When the water boils, put the Peas into the saucepan and boil rapidly for fifteen minutes; skim the scum that rises, or the Peas will not be a good colour. Strain the water off into a basin, as it is so useful to make Pea soup. Add 1 oz. of butter; shake the Peas about until the butter dissolves; serve very hot.—J. BAKER.

Peas Flemish Fashion.—We regret that a printer's error occurred in this receipt, as published in GARDENING, June 19. The following is the way it should have read: "For the following receipt we are indebted to Sir Henry Thompson: Put 1 pint of Peas, 1 oz. of butter, and ½ oz. of flour into a stewpan; stir well over the fire until the butter is melted, add a little Parsley, three or four small Onions cut up, and two Lettuces sliced rather fine, and ½ pint of Stock, a teaspoonful of sugar, and some salt. Put on the lid, and stew for half-an-hour. Take out the Parsley, add a little more butter, and serve."

How to Preserve Eggs for Winter Use.—Take ¼ lb. hot lime, slake it; when thoroughly slaked add ½ lb. of salt, 1 oz. cream of tartar, and 1 gallon of spring water; when all is dissolved put in the eggs and cover the jar closely. I have found the eggs thus done in March to be perfectly good for all cooking purposes and poaching the following March.—DOT.

—— To 5 quarts of water put 1 lb. of salt, 1 oz. of saltpetre; boil it ten minutes, and when nearly cold add two tablespoonfuls of quicklime. Let it stand two days, then put in the eggs with the thick end downwards. The eggs must be fresh. The jars should be kept in a cool place and not moved. The above is an excellent recipe.

To Preserve Green Gooseberries.—Top and tail the Gooseberries (which should be scarcely full grown, or at least before they begin to ripen), put them into ordinary wine bottles, shake them down close, and fill up with cold water; then place them in a pewter kettle of cold water nearly up to the neck, as many as the pot will hold to keep them steady; let the water boil, and as it heats you will see the water run over out of the bottles, but you are not to regard this. When you see that the Gooseberries are fairly coddled, they are done sufficiently. Have your corks and sealing-wax ready, and take the bottles one by one out of the boiling water and cork and seal instantly, success all depending by hermetically closing the bottle before its contents have time to cool. After corking, cut off the cork level with the top of the bottle, and drive it with a hammer the eighth of an inch below the top, and fill up well with wax. As has been said, success depends upon hermatically closing the bottles quickly, and when cold you will see a considerable vacuum, and it is this exclusion of air which is the preserving quality. It is desirable to have as open necked bottles as you can reasonably get, both for getting the fruit in and out. Choose the smaller sort of Gooseberries; keep in a cold cellar.

POULTRY.

Hatching Chickens.—With eight hens and a cock, which were hatched in March and April last year, I have had eleven chicks from eleven eggs, and are all doing well and hearty, being three weeks old. The hen was twice off the nest for some hours, and was put in the run with the other fowls. I mention this, as I know some poultry keepers are so timid when the hen is off the nest any length of time. I never interfere or look for the chickens until the time is quite up for them to be hatched, which I find much the best. Years ago I used to take them away as they came out, but consider I do better by letting Nature have her own course. I give the chickens whole groats, and in two days give them liver cooked and chopped fine, which they heartily enjoy, and continue to feed them on the same.—THORBURN.

Prolific Fowls.—I have a hen which was hatched May 19, 1879, which brought out a brood of chickens on April 16 last, and commenced laying again May 24. I have also a half-bred Brahma hen which brought out a brood on March 8 last, began to lay on May 2, and laid continuously for twenty-one days, and is now sitting again.—COLEMAN.

Dropsy in Fowls.—Are Game chickens (Bantam) subject to dropsy? and if so, what is the treatment necessary? I have lost one from a swelling which came on gradually.—Rev. L. A. B.

Preserving Eggs.—I shall feel obliged for information concerning the above. I have a great quantity of eggs, many more than I can use at present. I have been greasing them with pure lard and putting them in bran; but I find they are just beginning to taste unpleasantly of the bran.—A. T. F. [See receipts above.]

Cockerels.—What are considered best—those with single or double combs?—E. E. T.

Cramp in Chickens.—Can any ready tell me what is best for cramp in very young chicks?—A LADY.

Featherless Fowls.—"F. R. C.'s" birds have acquired the habit of feather eating, as described in GARDENING of May 1. Their eggs are quite wholesome.

BEES.

Feeding.—Two pounds of lump sugar to one pint of water just allowed to boil makes an excellent food for bees, keeping them healthy and strong. The advantage of assisting new swarms with a few pounds of syrup is incalculable; it enables the bees to devote all their energies to comb-building, thus providing receptacles for the queen to deposit her eggs, the increased amount of brood strengthening the hive most materially. For this purpose it is necessary to use a bottom feeder, which can be had for a few shillings complete, but in all other cases the writer strongly recommends the Lancashire Feeder. It prevents robbing and fighting, and is in all respects so convenient.

Removal of Hives.—Hives should not be moved during the working season a less distance than two miles, or many bees will return to the old stand and be lost. In case it is required to alter the position of the hive a short distance, this should be done gradually, say one or two feet only per day, letting the entrance to the hive face the spot you are moving it from. SAMUEL YATES, *Manchester*.

How to Keep Bees.—I should be glad if any one could give me some information concerning bees—viz., the best kind of hive; what kind of bees are the best; and also, is there any way of preventing them from swarming in other people's grounds? Our garden is amidst a number of other gardens, but I thought there might be some way of telling when they are going to swarm, and putting another hive ready for them.—W.W.

AQUARIA.

Water in Aquaria.—Would you inform me if there is any way of supplying oxygen to fish in aquarium (having no plants) except by changing the water, as I find I have to change it every day, which is troublesome? Also what is the cause of the scales of the gold fish falling off?—PISCA.

—— The ordinary drinking water will answer well for an aquarium, but river water is best if it can be procured. The water will not want changing for two or three months if "J. T. M." keeps plenty of vegetable life in the tank, and keeps it from the direct rays of the sun.—NEPA.

White Matter on Gold Fish.—Take the gold fish out of the aquarium, and put them into a pail filled with clean water. Get some fine sand and throw it on the fish two or three times a day, and this will clear all the white matter off.—W. C. J.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 6s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s 6d to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 2s to 3s; Strawberries per lb, 9d to 2s; Gooseberries per qt, 3d to 6d.

Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 6d to 8d; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 4s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard, or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 6d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 1d to 3d. Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

THE MONKEY PUZZLE.
(ARAUCARIA IMBRICATA.)

MOST people know this as one of the most ornamental of lawn trees. It will succeed in nearly all parts of England where the situation is dry and the soil suitable, but in low damp situations it frequently gets injured in very cold winters. In small gardens where a little plot of Grass exists this plant would form a suitable object for the centre, and even near towns it would succeed fairly well if properly planted at first and provided with suitable soil. When the soil is not suitable the tree loses its lower branches, and becomes anything but an object of beauty. Turfy loam, such as that cut from the roadsides, mixed with common garden soil, would be excellent for it. A round hole should be dug, say 6 ft. in diameter and 2½ ft. deep; the bottom should then be roughly turned over and a little brick rubbish or similar material be mixed with it to act as drainage. A little of the coarsest loam may then be placed in the form of a cone over the drainage, and on this the plant may be placed, allowing the roots to be laid out evenly all round and in a slightly slanting direction. Place over the roots a little fine soil, which work well in between them with the hand; then fill up the hole, well tread the soil in, give a good soaking with water, place a stout stake to the tree, and tie it with stout woollen material, yarn, or anything that will not cut into the bark of the tree; leave it for a few days and the earth may be turned over, or planted with plants, or sown with annuals as desired. The great point is to secure thorough drainage, for without this the roots get injured in winter, and the tree soon begins to decline. We have known fine trees of this Araucaria in a garden within a few miles of London, which, owing to being planted on a badly-drained lawn, although the soil was good, succumbed to the heavy rains and severe frosts of winter; whilst other trees in the same garden, which had been planted in a bed of soil in the centre of a grand walk continued fresh and healthy, and grew with great vigour. This shows that the drainage afforded by the gravel walk was instrumental in saving the trees. Perhaps there is no other tree upon which so much money has been wasted as in the case of the Araucaria. Most people have desired to possess it, whether their gardens were suited to it or not, and, without any preparation having been made in the way of soil or drainage, the trees have been planted, and the results have been disappointment and loss. The annexed illustration, taken from the living plant at Dropmore, shows to what a magnificent tree the Araucaria will grow when the climate, soil, &c., are suited to its requirements.

THE MONKEY PUZZLE (ARAUCARIA IMBRICATA) IN THE GARDENS AT DROPMORE

Hardy Edging Plants.—In the immediate neighbourhood of buildings it is sometimes desirable to cover certain places with some permanent living carpet, especially in positions where Grass cannot be got to grow satisfactorily, or where it is difficult to keep it in good condition by means of the mowing machine or scythe. Areas surrounded by stone kerbing and its usual adjuncts are difficult to mow, and where the necessary operations of clipping has to be performed with shears, other subjects might be substituted for Grass that would have a good appearance at all seasons, and that would require less labour. We have some narrow borders enclosed with massive stone kerbing, and the majority of these are planted with Irish Ivy, pegged down close until well established, when the only attention which it requires is clipping over occasionally, and the beautiful, fresh, green

groundwork which the young foliage presents can scarcely be surpassed by any plant with which I am acquainted. When the borders are wide enough to admit of its being done, a space is left in the centre for brightly-coloured flowers, which the Ivy shows off to great advantage, and in spring a beautiful effect is produced by large masses of Snowdrops peeping through the foliage of the Ivy. These were planted with the Ivy, and have been allowed to remain undisturbed for years. Large specimens of Hydrangea and similar plants have an excellent effect plunged in this kind of border during summer, and replaced by Thuja aurea or Golden Yews in winter; in fact, any number of variations may be worked out on this simple but effective groundwork. As a good contrast to the above we have planted some panels with Golden Honeysuckle (Lonicera aurea reticulata), and treated it in every way like the Ivy. It is a charming subject, and in such positions is better variegated than on pillars or arches, as there is always an abundance of small spray-like shoots with the freshest and most effectively-marked variegation, induced by the frequent pinching and clipping to which it has to be subjected. On some very shallow panels, where the kerbing is only 2 in. or 3 in. high, I have found the different varieties of Sedums or Stonecrops most effective as groundwork, as, though only planted thinly at first, they quickly form an even unbroken mass, and they have this advantage, that they will grow in shallow, dry soils where little else will succeed.—J. G.

GARDEN ORNAMENTS.

GARDENS can be made to wear a very beautiful appearance by the addition of a few ornaments in which flowers can be grown, and may be accomplished by any amateur gardener at a very trifling cost. For instance, a vase may be made by purchasing a shallow wooden washing tub, which may be procured at a cost as low as a shilling, and in the bottom, by means of an auger, bore about a dozen holes for drainage, and screw the tub in the centre to either a round or square piece of wood about 3½ ft. in length, which will serve as a pillar. On this pillar Virgin cork can be nailed or glued, leaving 1 ft. or more for insertion in the ground. Procure a number of Willow or Nut sticks quite 1 in. in thickness, strip them of their green covering, lay them in the sun, and when thoroughly dry split them down the middle; cut into lengths of 2 in. longer than the depth of the vase and point them at each end; nail or glue them to the sides of it, close together the whole of the way round, allowing the points to be 1 in. higher than the top edge of the vase itself. Paint the whole, except the cork, a moderately deep green, give it a coat of varnish, and when dry insert it on the spot where it is intended to stand. To some this may not be very pleasing, on account of the common appearance of the article; but I have seen them made in this manner, and was very much struck with the idea, and which indeed was a very agreeable improvement, although the garden in which they stood was tastefully and prettily arranged before their admission. Strew the bottom with potsherds, cinders, stones, or anything that will secure drainage, then fill up with mould. Should the latter require manuring, mix it either with horse or sheep manure. If the latter is obtainable a small quantity will suffice, being considered as much richer and stronger than the other. A Fern, Fuchsia, or Geranium will make a centre plant, and around it, circle within circle, Virginian Stock, Lobelia, Pyrethrum, and Daisies, or other small bordering plants, according to the discretion of the operator, and he will doubtless in due time be rewarded with a splendid vase of flowers at a small outlay. With a few pieces of ordinary ½-in. deal board almost any shape may be constructed and finished in the same manner. Another way: procure a large flower-pot, and around it, by means of good Portland cement, fasten a quantity of cockle or whelk shells, which may be purchased at a fish shop at an exceedingly cheap rate. Thoroughly soak and cleanse them in boiling water or soap-suds, then wash in cold water; plaster the sides of the pot with cement, and apply the shells to it whilst wet. A stand in the shape of a long single-legged table could be made for it, the top being a trifle larger than the bottom of the pot, and paint it the same colour as in the previous case. Follow the same directions with regard to drainage, mould, &c. Dwarf Nasturtiums look exceedingly handsome in a vase of this description. A Fern or Geranium will look equally attractive if encircled with a bordering plant, or creepers could be trained to hang over its edges. These ornaments are simple enough to make and in no way expensive; the cost in either case would amount to very little over a shilling, and many an unsightly corner in a garden could be filled up with one or more of these contrivances.

NEWT.

VEGETABLES.

Planting Asparagus.—I have invariably found Asparagus to succeed best if removed while in active growth, even as late as July. I have never known one-year seedlings to fail, and I have never known perfect success to attend the removal of older plants. Many object to the loss of time caused by planting one-year-old seedlings. To overcome this difficulty, I manure the ground very highly on which the seed is to be sown. It is sown in rows 1 ft. apart, and the young plants are thinned out to 4 in. or 5 in. asunder, by which means I obtain better roots than ordinary two-year-old plants, and from these some heads may be cut twelve months after planting.—R. S.

Second Crop of Hearts from Cabbages.—I speak from experiment and practice when I say that if the good sound leaves are left on Cabbage stumps, a second crop of three or four small sound hearts will speedily be produced as close to the stem of the plant nearly as the original heart. Whatever is produced fit for table from plants trimmed to mere stumps will be, at the ends of long branches, mere open bunches of whitish leaves, and ridiculously small as compared with the size of the plant, the length of time required, the exhaustion of the soil, or with the compact and handsome produce of untrimmed plants. In a word, a second crop from plants is one of hearts; a second crop from stumps is leaves and branches—out of place in a garden. I have heard some people say that their Cabbages cost them 1s. each, and would suggest in a general way a reduction per head to 6d. each by growing half the quantity on half the ground; to 3d. each by growing a second crop of hearts by proper treatment; and to a 1d. each by clearing them off in time for a successional crop of some other vegetable.—J. M. T.

Growing Turnips.—Turnips sown in May and June should in most localities be located in as cool and moderately shaded a position as possible, as a period of drought is frequently destructive to midsummer crops in fully exposed situations. The main crops, intended for autumn and winter use, which are the largest and most important, should be made from the beginning of July until the middle of August, according to locality; and a small sowing may be made at the end of August for spring use, as the smallest roots stand the winter best, and come in very serviceably before spring-sown crops are ready in any quantity. If the weather be moist and showery at the date of sowing, the seed quickly vegetates, and attention should immediately be paid to keep the young plants growing quickly by means of watering, surface-stirring, and dusting with lime, soot, or wood-ashes, to keep off insect attacks; for if growth be arrested, the roots are invariably hard and stringy. When watering is necessary, only rain or pond water should be used, of equal or higher temperature than the atmosphere, as cold spring water rather checks than encourages growth. As regards storing the crop, this need only be practised a provision against prolonged periods of sev weather; for, however carefully they may stored away, some deterioration of flavour tal place. A good plan is to lay the finest roots rows, well covering them with soil, and leavi the whole of the foliage on, which forms a c siderable amount of protection, and is eas supplemented in case of severe frost. Of cou they should be in a position easily accessil Before growth commences in spring the remn of the crop should be pulled up and stored the coolest available position. The very lat sown crops of half-grown roots will prolong supply until the earliest spring-sown crops fit for use. In dry soils Turnips are often, hot seasons, not only of inferior quality, but is also difficult to get the seeds to germin freely and regularly, and to induce the you plants to make a sufficiently rapid growth escape the ravages of the fly. Where a pi of cool-bottomed land that has been w manured and deeply dug in the previous autu or early winter can be reserved for the m crop, the chances of obtaining good succul roots are pretty well secured. But if, as quently happens, the Turnip crop has to succ another crop only just cleared off, the follow is probably the best plan to secure good pla and induce a rapid growth: After the land been manured with thoroughly decayed man and dug over (it is a bad plan to dig long man into land that parts with its moisture rapi any time during the spring and summer), spr on the surface a good dressing of burnt earth charred rubbish, and in raking down the surf this will mix well with it, and will not only as a valuable manure, especially suitable Turnips, but will also tend to retain the m ture in the land. By a little forethought in periodical clearings of the rubbish-yard, a h of this kind of material can always be held reserve for such emergencies. After the l has been thus prepared, wait for a shower, possible, before sowing the seed. If this can be done, sow in drills, drawing the drills rat deeper than would be necessary for early cr so as to lay the seeds in the moist soil whic generally found under the surface if the land lain two or three weeks after being worked consolidate. If the weather continue hot dry, shade, in order to assist the land to ret its moisture, which is done in the following w and this not only keeps the soil comparativ cool, but also keeps small birds from pulling plants up as fast as they appear, in order to at the seed. If, then, the weather be dry hot, and the seeds do not germinate quickly number of short forked sticks, pushed into bed at intervals of 3 ft. or 4 ft., and over th suspended one or more lengths, as may be nec sary, of netting, may be employed. It is k about 1 ft. from the ground on all sides; th is thus a continual circulation of air. But ground, being shaded from the hot sun, reta its moisture, the seeds vegetate strongly rapidly, and, as soon as the plants are fairly the nets are removed and the hoe used regular There is nothing like a frequently-stirred s face to encourage rapid growth, and ra growth is essential to mild flavour in vegetab As regards varieties, Early White Dutch v formerly almost universally grown for earliest crop, but it is superseded by variet that continue fit for table longer. It is, h ever, a very useful variety, either for the v earliest or for the latest crops. Early Wh Strap-leaf is an excellent rapid-growing varie with small crown of long strap-shaped leav Early Six Weeks, a rapid growing variety, g for summer use; Red American Stone, a medi sized variety, skin dark when exposed, fl clear, white, and firm; Cattell's Silver B round, white, excellent variety; Early Snowb good for general crop; Green Top, Six Wee round, white, hardy, and good; Orange Je or Golden Stone, a Cheshire variety of handso form and excellent quality, and, when the col is not objected to, should be largely grown main crop. Chirk Castle Black Stone is, haps, the hardiest and best variety for win use, especially in cold localities; for, altho the skin is black, the flesh is white as snow, of excellent quality. There are other equa good and useful varieties, but a selection of f or five really good kinds that are found to the locality are sufficient or the larg garden.

Mustard and Cress on Flannel.—A very interesting way to grow Mustard and Cress on flannel is to sew a piece of flannel on a glass bottle of any shape, wet the flannel thoroughly, and roll the bottle in the seed till it is covered; fill the bottle with water, and keep it full. When the flannel requires watering, pour the water in the mouth of the bottle, and it will look very pretty in about a week or ten days.—C. S.

How to Reduce Bones.—It frequently happens in country places, where bones are plentiful, that there are no mills to grind them, and if applied to the land as they are, they decompose so slowly, as to be of comparatively little use. In such cases, chemical means, which are always at hand, are to be brought into requisition. Of all the various means that can be employed for decomposing and dissolving bones, the best and most practicable is wood-ashes. They are generally plentiful in country places—they prevent any unpleasant odour from being given off, and, above all, cause a rapid and complete decomposition. The bones are converted into a fine powder, which, mixed with the ashes, furnishes an excellent fertiliser, rich in potash and phosphoric acid. The method of using them is as follows:—A trench 3 ft. or 4 ft. deep, and of any desired length, is dug in the earth and filled with alternate layers of ashes and whole bones, each layer being about 6 in. thick. The lowest as well as the top layers are of ashes, and each layer of ashes is thoroughly saturated with water. At distances of 3 ft. poles are rammed down to the bottom of the ditch, and every eight or ten days they are taken out and enough water poured in the holes to saturate the ashes. At the end of two months the whole heap is thoroughly stirred up with a fork, so as to mix the ashes and soften the bones, which are then left to ferment again, water being added as often as necessary. In about three months more, the heap being worked over twice or three times, the decomposition of the bones will be so complete, that only a few of the largest remain, and these are taken out and put in another heap. This method of using bones comes to us from Russia, and is very highly recommended. The action of this fertiliser upon crops is said to be something extraordinary. It seems as if the salts in the bones and those in the ashes unite to form very soluble salts, which can be at once assimilated by the roots of plants. Where wood-ashes are scarce, recourse must be had to horse manure. The bones are soaked a few days in water, and then placed in rectangular pits with alternate layers of horse manure, each layer being drenched with the water in which the bones were soaked. The strata of bones are 3 in. thick, and those of manure 1 ft. thick. The pit is covered with earth, so as to be tightly closed. The decomposition of the bones will require in this case about ten months, when the mixture is ready for use as a fertiliser. They may also be more speedily prepared by boiling in the following manner:—Mix them in a large vessel with wood-ashes, and, to make the ashes caustic, add about a peck of fresh lime to each barrel of bones. Saturate and cover the ashes well with water, and then apply heat for, say, twenty-four hours, or during the day for two successive days. All the bones by this time, except the very hardest parts, will be so reduced, as to be easily pulverised, being in a pasty condition, suitable for placing in layers in making the compost heap. Another day's boiling will reduce the remainder of the hard bones. It is useless to recommend converting them into home-made super-phosphate by using sulphuric acid; the difficulty and trouble in procuring the acid away from cities, and the care and experience required to use it, are sufficient objections.

An Easy Method of Catching Snails in Gardens.—Any one troubled with snails in their gardens should get two or three Oranges and take the peel off whole and cut it in halves, laying them on the beds at night. In the morning examine the Orange peel; shake off the snails and kill them, and put the Orange peel back again on the beds to catch some more. A few trials of the above will soon clear a garden of snails. The same simple remedy can be applied with success in Cucumber and other frames and greenhouses where snails are to be seen.—C. J. Wraith.

EXHIBITION AT SOUTH KENSINGTON.

The Pelargonium Society held its annual show at South Kensington on Tuesday last. The plants were, on the whole, equal to those shown in former years, whilst the varieties shown were a great improvement on those seen a few years back. The prizes for vegetables offered by Messrs. Sutton & Sons, and Messrs. Carter & Co., and Messrs. Webb & Sons brought together a fine display of the best vegetables we have seen exhibited for some years past—that, is at this season of the year. The Peas and Beans were remarkable examples of good culture. Carter's Telegraph is an excellent Pea, having as many as ten large Peas in a pod; whilst Sutton's Improved Long-pod Bean is the finest exhibition Bean we have ever met with. The pods are at least 12 in. long, and contain seven or eight large and handsome beans. The Nantes Horn Carrot is a kind well worth the notice of our readers. It can be grown in much shallower ground than the kinds usually grown in gardens, whilst in point of flavour it is infinitely better than any other kind, the Early French Horn excepting. All-the-Year-Round Cabbage Lettuce, too, should be grown by occupiers of small gardens. It takes up comparatively little room, and forms plump balls of delicate leaves, which are much superior to those of the coarse Cos Lettuces. It, of course, requires no tying to blanch, which is a great saving of time. The prizes for the best packed fruit offered by Messrs. Webber & Co., of Covent Garden, were not so well contested for as we expected. The first prize lot were packed as follows:—Grapes—A layer of dry Moss was put into a box, some being also packed round the sides to leave a hollow in the centre. A large sheet of tissue-paper was then placed in this hollow, into which the bunches of Grapes were put as close as possible point downwards. The sides were then packed tightly with dry Moss. So firm were the bunches packed, that they could not be removed until the Moss surrounding them had been loosened, and yet they were perfect, scarcely any of the bloom being injured. The Peaches were wrapped in tissue-paper, and then packed firmly in wadding in shallow boxes. The Strawberries were packed in layers in shallow boxes, with soft leaves intervening between each fruit.

Mr. Cannell, of Swanley, made a remarkably fine display of tuberous Begonias. Roses were neither numerous nor of first-rate quality.

House and Window Gardening.

WINDOW GARDENING.

Making and Planting a Fern Case.—In a recent number (49) of Gardening Illustrated I gave my experience of one part of window case management, and though the remarks I made then may have deterred some from embarking in this popular style of amateur gardening, there is really no reason why any one who has a taste this way should not have at least a few plants which, with a very little trouble, may be grown as well as they could be in much larger places. There is much to be said in favour of window cases—their utility in hiding unsightly views, &c.; and there is no class of gardening anything like so suitable for those who live in towns. The principal thing is to get the right class of plants, and for cases nothing is so good as Ferns. Of course, where the owner of a case happens to have a frame or greenhouse, or even chooses to buy plants from some nurseryman from time to time, it is possible to have a variety of foliage and flowering plants; but where, as is most often the case, the area is limited to the one solitary window case, and the owner cannot afford to buy plants again and again, nothing does so well as Ferns; they are all amenable to nearly the same condition of culture, and they stand neglect and ill-treatment better and longer than any other class of plants. I myself have done much in this way under by no means favourable circumstances, and it is even less than some of my friends have done. My case is made on the most economical scale, and my *modus operandi* of planting was as follows:—I first covered the sides and bottom with a good coating of Portland cement, and then having procured some pieces of tufa I proceeded to make my rockwork. This, of course, can be arranged to suit tastes. All that is required is to first fasten a few pieces to the floor and sides and then build from them. The Portland cement should be made thin, and then if the pieces of tufa are dipped in it and supported with bits of wood until the cement sets it will become as firm as a rock. The rockwork finished, with a brace and bit I made some ten or twelve holes for drainage; these holes I covered with bits of broken flower-pots to keep the soil out. I then put in some 2 in. of drainage consisting of broken flower-pots and such things, and then having procured some nice sods I broke them up into small pieces about the size of an egg. These I put on the drainage and then filled up the bottom with the compost, consisting of one part good peat and two parts nice light loam, with sufficient sand to give it a light grey appearance. My Ferns are all planted out, and have a bright healthy look that is positively refreshing. My collection consists of the following, viz., Scolopendrium vulgare var. crispum, S. vulgare var. laceratum and cornutum, Polypodium vulgare var. cambricum and pulcherrimum, Polystichum aculeatum, P. angulare var. Bayliæ, Athyrium Filix-Fœmina var. Craigi, var. Simpsoni, and var. Gloveri, Onoclea sensibilis, Cyrtomium caryotideum, Platycerium alcicorne, Adiantum pedatum, A. tinctum, Polystichum acrostichoides, Davallia pyridata, D. dissecta, Nephrodium molle and Pteris serrulata; and for Creepers, Ivy and Japanese Honeysuckle. Y. Z.

German Iris.—These have for some time past been flowering freely in cottage gardens, on

German Iris (I. germanica).

railway banks, and in shrubbery borders. Seeing that the common kinds will grow almost anywhere, it is to be regretted that the finer kinds are not introduced in such a way that a variety, as well as a succession of blossoms which rival those of some of the showiest Orchids, might be obtained. The present is a good time to visit hardy plant nurseries with a view of selecting the best kinds.

Pot Marigold Meteor.—It is gratifying to find that this very charming Marigold is being exactly reproduced by seedling plants. One good feature is seen in the comparative variation of the markings, the orange edging on the lemon ground varying in body, and thus producing a pleasing distinctiveness. It is difficult to say which are the prettiest—it is rather a matter of taste; but those in which the orange predominates are perhaps the most striking. This pretty Marigold is so hardy and suitable for cottage garden culture, that it will soon become as widely grown as Stocks and Wallflowers. Last season was everywhere so bad for seeds, that vast quantities refused to germinate, and doubtless to that must I attribute the fact that out of a 1s. 6d. packet of Continental seed only two plants grew.—A. D.

Bedding Pansies.—Although Pansies and Violas are such useful flowers for the production of masses of bloom in spring, their best effects are rarely seen except when found in large clumps that have been left untouched from the preceding year. Such clumps, however, cannot be had under the present system of bedding arrangements, as in that case considerable division is necessary. Many kinds of what are

known as bedding Violas produce but a meagre appearance in the form of small plants; but clumps that have a score of blooms upon them expanded at once are most beautiful and singularly effective. Just now the fine old Cliveden Purple Pansy is really superb; clumps of great size and full of bloom give a hue of colour such as no other hardy border flower can equal. The pretty mauve Princess Teck and Lilacina Violas in large clumps are truly lovely, and the same may be said of all others, whether white, yellow, or blue. It is not too much to say of the Pansy family that it constitutes in the spring the gayest and most effective of all border plants, and, perhaps, next to the Primrose, the most highly appreciated. Of course, large clumps must be divided sometimes, or else they would become weak and ragged. The best time to do this is as soon as the bulk of the bloom is over, when the clumps should be lifted, pulled into some half dozen or more separate pieces, and be replanted in a cool border for the summer, and kept well watered. These will by October make fine heads of foliage, and can be then planted in beds or borders as desired.—A. D.

Michaelmas Daisies as Flower Sticks.—It may not generally be known how very useful the old stems are for this purpose either in or out-of-doors. The stronger ones will last through the flowering season of most plants, and the very weakly-grown ones are the very things to support a bloom for a week or two, while their colour renders them inconspicuous. The best plan is to cut them down at the end of autumn, strip off the leaves, and tie them straight in bundles and put them in a dry place. If only for this purpose they are worth growing.—J. B.

The Corn Marigold.—Chrysanthemum segetum, or Corn Marigold, a cornfield weed, probably of Mediterranean origin, but now common all over Europe, except the extreme north, is a showy and welcome novelty in our greenhouses in the early spring. At that season flowering plants of the same type are rare. If plants of it are lifted from the open ground in August and placed under glass, they will flower freely, and, on account of their bright colour, prove good acquisitions to our stock of flowers at a period when other things are scarce.

White Azaleas Out-of-doors.—Several bushes of these grow here in the open air that have evidently been out some years. I hope to make an experimental bed of various kinds next spring, as I see no reason why many other Indian Azaleas might not succeed out-of-doors besides the white one, seeing that Camellias grow well here as single bushes on Grass, and are in spring covered with buds in various stages of development.—J. G., *Maidstone.*

The Snowdrop Anemone.—Most of the Windflowers are beautiful, but this is one of the best, as it is comparatively dwarf and very free as regards flowering, its pure white blossoms being as large as a crown piece when fully blown, and drooping gracefully when in bud. The foliage is elegantly cut into narrow segments, and is hairy underneath. This Windflower is a capital plant for the ordinary flower border, the lower parts of the rockery, or the margins of shrubberies, by the sides of woodland walks, in the wild garden, in all situations being quite indifferent as to the nature of the soil, provided it be not too dry. It comes from the groves and from hedgerows in many parts of South and Central Europe, where it presents a showy appearance during early summer. It is called the Snowdrop Anemone on account of its pure white, drooping buds having a resemblance to those of the Snowdrop in spring. Its botanical name is Anemone sylvestris. An illustration of the plant in flower is given on the opposite page.

Aubrietias.—These last long in flower, delight in open, dry, exposed situations, and produce charming masses of warm-coloured blossoms. There are many varieties of Aubrietias, all of which are beautiful, but none more so than A. Hendersoni. The oldest variety is the one shown in the accompanying engraving, Aubrietia purpurea, a pretty flower enough, but thrown into the shade by some of the other kinds. There is a well-known variegated variety of this not of much value, except as a neat little rock plant. Then there is what is called deltoidea, which is very near, if not identical with purpurea. We have also grandiflora, a kind similar in colour to purpurea, but twice or thrice its size. This has a lax, diffuse habit, which makes it a charming rock plant. There is a variety of this called græca, a fine plant, opening out at first a full purple, and dying off a lavender colour. Masses of this, with its various shades of colour, are very pleasing. There is also a fine variegated large-flowered form of it. The last of the Aubrietias I shall notice is Mooreana. Mooreana is a compact little cushion-like plant, which, in its flowering season, is literally smothered with bloom. It is the loveliest of Aubrietias, well adapted for spring gardening purposes, being charming either in masses or as edgings to beds of other plants, perfectly hardy, and will flower from March until June. Some find Aubrietias difficult to propagate; my practice is to pull off all the straggling side-shoots in June or July from the old plants, securing as much stem as possible, and breaking it off close to the main root; then a piece of ground is dug in a cool, shady border, into which is worked plenty of rough sand and leaf-mould; the shoots are then planted in lines, a little sandy soil being placed about the portion put into the ground, and all is trodden down firmly. The cuttings are then occasionally sprinkled and kept shaded from the sun, and, thus managed, but few failures occur. One great advantage in getting the cuttings started

The Purple Aubrietia (A. purpurea).

now is, that the plants become strong and dense by the end of the summer, and are well fitted for planting out.—F. W.

FRUIT.

Caterpillars on Gooseberry Trees.—I planted some young fruit trees in early spring, and have been much troubled by the small caterpillar infesting the Gooseberry trees. Doubtless some readers of GARDENING who have so complained of the ravages of this little pest will be glad to learn a remedy which I was fortunate enough to try, after so many fruitless attempts, has proved successful. It is a vegetable composition in the shape of a powder. I applied it after rain, when very calm, from a small tin canister with holes pierced in the lid. The effect was marvellous; they at once loosed their hold from the leaves, falling on the ground. I then shook the tree by tapping the stock. I then sprinkled a little on the ground under the tree to make sure of them all having a dose, and many scarcely seemed to move after. Next morning I looked to see if it had done them good; I found two or three had escaped untouched under a leaf or two, which I picked off, and gave a little more, finishing, I really believe, the lot, for which I am indeed thankful. I next tried it on the green fly, which infest Rose trees. Pinching off a few leaves from a Plum tree which were covered with the fly, I sprinkled a little over them, which was just as effectual as that applied to the Gooseberry, but I should think it would be more effectively applied to Rose trees from a puff or an india-rubber ball with a thin tube to it about 4 in. long, to blow well into the shoots, but I find the little tin canister pierced with holes in the lid does very well.—H. S.

Watering Fruit Trees.—This is a matter which requires more attention than it generally receives. Figs, Vines, dwarf Peaches, and Plums, and other fruit trees grown in pots and otherwise all want abundant waterings during their season of growth. My pot Vines, after they are fairly in leaf, are watered every day, though the pots are plunged, and sometimes twice a day in dry weather. Not long ago I finished cutting a heavy crop of excellent fruit from a house of these, and up to the time when the last bunch was cut the water was poured on to the soil through a wide-spouted can in floods. The drainage is ample, and I never allow the surface to become dry. My young pot Vines, struck from eyes in spring, receive the same treatment. Shutting up with a steaming atmosphere is avoided, as a certain cause of warty leaves, but at the root the water is supplied unstintingly. Some of my Figs, large bushes in large pots, which are packed with their roots, receive each 5 or 6 gals. daily, and would take more sometimes if I had time to give it to them. They had ripened their first crops of fruit, and are heavily laden with the second, and their ability to carry all through successfully will depend almost wholly on the liberal use of the watering-pot. It is not from want of liquid manure that many plants appear starved, but from want of water simply and nothing more. The amount of feeding material contained in a pot of good soil is almost or quite sufficient for a plant without any additional stimulant, provided it is diluted judiciously and enough. In the matter of Vine borders, for example, the most important and real lesson which has been learned of late years is that we can hardly over-water them if they are ordinarily well drained. Water in more than sufficient quantity at the roots of the Vines is now recognised as a chief agent in the protection of good Grapes; and results have proved that this recognition is correct. So it is with Peaches and other stone fruits grown under glass. The amount of moisture a large and healthy Peach tree will imbibe in a day is enormous. The tree may be compared to a sheet of moist blotting-paper exposed to the sun; it would dry completely in an hour or so. What, then, must be the amount of evaporation from a Peach tree placed against a warm wall covered with glass? In the case of a hard and well-drained border, and a healthy tree thinly trained and protected with glass, I believe it is hardly possible to overdo the watering during the summer season. It may be asserted that the best results have not yet been attained, even in Peach culture. It has been shown beyond a doubt that the grossest Peach shoots can be perfectly matured in this country with artificial aid, and it has still to be proved what can be accomplished by the extension system of training and liberal feeding and watering such as the Vine has been subjected to. Take the Strawberry again; it does not like being treated like an aquatic, as pot plants sometimes are; but a well-drained Strawberry quarter should be deluged with water throughout the summer season, and also mulched, whether we have regard to present or future crops. A droughty June and July ill suits the Strawberry, and liberal waterings alone, under such circumstances, will nearly double the weight of crop. I have, as a rule, always light crops of Strawberries when I have a light hay crop, and both are due to the same cause—want of sufficient moisture at the root.—C.

Hints on Strawberry Culture.—In the culture of Strawberries the best results will generally be obtained where the soil has been trenched or deeply dug and enriched with plenty of good rotten manure; and the beds or rows are not profitable when allowed to remain longer than three years on the same soil. A good strong loamy soil is the most suitable for the plant, but as this is not found in every garden, a mixture of stronger soil can be added to a light soil where good crops of Strawberries are a desideratum. Plants of Strawberries which have been forced in pots will, if planted out in a rich sandy soil, produce excellent crops, for the ball of strong soil at their roots will make them bear well for at least two years after being planted out. I raise all my best crops from pot plants when planted out as early as possible after the fruit is gathered. In

general the plants, after forcing, are huddled together, and often neglected in dry weather as regards water, and not planted out till the pots are wanted again for the newly-laid young batch of runners. This does not give the old plants so good a chance of rooting into the new soil as when they are planted out early. When the weather is favourable in autumn, some of the varieties, when planted out early from pots, produce good second crops of fruit. In planting young plantations of Strawberries from runners, they will be found to succeed best when planted in July or August, for then they have time to root well before the winter sets in: and if the runners have been strong when planted, they will produce some fine fruit the year following. When the planting of the runners is delayed till the spring, dry weather often prevails in March or April before the roots have progressed much, and a year is lost as regards getting much fruit from them. Late autumn planting is, likewise, wrong in practice, for the early frosts heave the plants out of the ground unless well protected with litter. I find that a top-dressing of litter put on in the autumn as a protection against severe winter frosts is requisite for Strawberry beds, whether newly planted or not. In the spring the young leaves grow through it, and the strawy litter keeps the fruit clean after the heavy rains or showers. This is better than using tan, short Grass, or haye, for this purpose, as seeds are shed in the ground, and take labour to eradicate them again. In dry summers Strawberry plants, when swelling their fruits, will enjoy any amount of liquid manure.—W. T.

OUTDOOR PEACH CULTURE.

Summers like the last bring out markedly the advantages which follow attentive cultivation in regard to such fruits as the Peach when grown on open walls, and which, taken collectively, as seen in the majority of gardens throughout the country, I always consider receives the most indifferent treatment that is given to any of our cultivated fruits. In some places at the present time there is on the trees an excellent crop which can now scarcely fail to mature satisfactorily; whilst in others in the same localities, where the conditions as to soil, aspect, climate, and protection to the bloom are the same, the trees are fruitless. Was there not unmistakable evidence of the very different manner in which the trees are from year to year managed, the difference in the crops might be attributed to local causes beyond control. One of the greatest mistakes in the management of Peach trees is the retention of too much wood at the time of thinning the shoots, which, even when laid close in, so as to be fully under the influence of the heat reflected from the surface of the wall, never gets so thoroughly matured (except in the warmest summers) as to give a fair prospect of the bloom being what it should and can be under more favourable conditions. There are those I know who contend that a given amount of frost will kill the bloom whatever its character may be, but this spring the temperature in most parts of the kingdom where Peaches succeed on open walls was not low enough whilst the trees were in bloom to prevent its setting; failure, therefore, evidently arises from the non-ability to produce fruit of the small imperfect flowers, so different in their development from those which are produced where no more shoots are allowed to grow in summer than are needed to afford a crop, and in this way the trees to which I have alluded as bearing satisfactorily are annually managed. It is only natural for cultivators to feel a disposition to keep plenty of young wood to select from at the winter pruning time; but following this course is fatal to success, as the crowding of the young shoots makes it impossible for our insufficient sun power to ripen them properly. To this, and neglect of the trees in letting them get overrun with insects and mildew, clearly may be attributed the failure of very many Peach trees on open walls to give the return which they would render if better treated. Where the first leaves produced in spring are, as is too often the case, allowed to get injured by aphides, so as to cause them to fall off and prevent the earliest efforts of the trees from making wood in a satisfactory manner, the growth made later is necessarily weak, and frequently fails to get matured, unless when the summer and autumn are exceptionally favourable. The result of such conditions is, that the flowers are more or less defective, or wanting in strength and vitality to bear so low a temperature during the blooming season as they would if the wood had been formed under a system of cultivation that would enable its being fully matured. To these causes, and to the roots often not getting nearly so much water as they require, is traceable a good deal of the failures that take place in Peach crops on open walls. A. Z.

CLIMATE AND SOIL.

Like many other men who lead a busy life, I find relief and pleasure in a garden. I would also in passing say a word for the study of botany, which is a never-failing subject of interest to me wherever I go; but my immediate object is to make a few remarks, which will, if not novel, be useful to others in my position. My house stands upon about 4 acres of land, on the north side of a new red sandstone ridge in mid-Cheshire, about 20 miles from the sea, and I use about 1 acre for gardening purposes. The soil is a soft (not sharp or gritty) sand, with rock underneath, and I want to show what I can and cannot grow. When I read the recommendations of various correspondents I feel how useless they are in great measure, for want of a statement of the climate and soil to which they are applicable, and it would be a great help to me if each communication would show where the writer hails from. I constantly find something recommended which I should like to try, but long experience (the gardener's only teacher) has taught me many lessons. For instance, one correspondent gives a glowing account of Tree Pæonies, but neither Tree nor any other Pæonies will grow with me. One of the most beautiful floral displays I ever saw was a collection of Tree Pæonies in a garden near the Severn, but they pine away with me in spite of every preparation of soil which I can make. On the other hand, white and yellow Azaleas and Rhododendrons grow and bloom with me without trouble, the common variety of the former attaining the height of moderate sized fruit trees, and requiring neither peat nor any other preparation. Hollies also grow superbly tall, 15 ft. to 18 ft. high, but Portugal Laurels and Laurustinus, and even common Gorse, are periodically killed in winter. The smooth-leaved Laurel and the Aucuba do not thrive with me at all. The old white Rose forms perfect thickets, yet I cannot grow China Roses, Moss Roses, or any new Roses, except, perhaps, Gloire de Dijon. The common blue Passion-flower and Hydrangeas pine and die, but Clematis Jackmanni grows unprotected and unmanured, flowering wonderfully. Foxgloves, red and white, are a weed, yet Gentiana acaulis and Anemone Honorine Joubert cannot be coaxed to grow, though the common Musk stands the winter and sows itself all over my garden. Sage blooms profusely in perfect health, but Rosemary and Lavender die in the winter. Looking at these facts, it is idle for me to pick out plants from books, and so, doubtless, many others find. Therefore, I ask everyone who writes a gardening article never to omit naming the locality, and, if possible, to describe the soil. Strawberries and Black Currants will not fruit in my soil and red Raspberries get always blighted, but white Raspberries and Red Currants flourish and bear abundantly. Peaches and Apricots mildew and die. White Lilies do not thrive, but Orange Lilies spread all over the place. Of forest trees, Sycamore, Beech, and Acacias find a congenial home, and, being all shallow-rooting trees, do the best. I have four Vines in my oldest house—two Black Hamburghs, a small high-flavoured Black Muscat, and the old sort of Muscat of Alexandria, each, perhaps, twenty years old—growing with the roots all outside in the sand, and nothing to feed them except what they get under a lawn and amongst the shrubs, with no drain anywhere near, and yet I have, after a liberal thinning, on them this summer more than a hundred bunches, some of them (especially the Muscats) fine bunches weighing 2 lb. each. These Vines, which are grown on the two or three rod system, never fail me, and all I do is to put a layer of cow manure on the narrow border every autumn, and to give them often in dry weather a supply of rain water out of the inside greenhouse cistern. I never scrape or dress them, but I keep the house, which is always full of greenhouse plants and Ferns, moist and warm at nights, and give plenty of air (door and lights generally more or less open, except in very cutting winds) during the day. The black Grapes are just beginning to colour now, and the flavour of the Muscats is always much finer than those grown in inside borders possess. I train up new wood every two or three years and cut away the old. One great thing doubtless is that the slope on which my house stands always keeps the soil or sand well drained, and my Grape crop never fails, and I believe that generally too much coddling is practised in Vine growing for table use. I made a great discovery this spring. A strong shoot was broken off one of the Vines accidentally, from which the sap flowed abundantly, but a little plaster of Paris, worked into a paste with the finger on the wound, stopped the bleeding instantly; indeed, the dressing remains on now, and I have ever since used it with invariable success. I will close this long communication by adding that quicklime dusted thickly over the Gooseberry trees with a flour-dredger in dry weather always rids me of my caterpillars, and never harms the trees. Mid-Cheshire.

[We quite agree with our correspondent, that if particulars as to soil and locality were given, communications would be more valuable.]

Snowdrop Anemone (A. sylvestris), a handsome free-flowering hardy plant. (See preceding page.)

Tropæolum compactum coccineum.—The kinds belonging to this section differ from the old Tom Thumb race in being continuous bloomers and in having the flowers well thrown up above the foliage. Plants raised from cuttings produce the most even masses. A few potfuls of cuttings put in at the end of August will give a large number of plants in the spring.—A.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 12.—Potting Tree Carnations in stiff soil, pressing them in firmly; potting off seedling Musk plants and Coleus cuttings; sowing a row of Mignonette for supplying cut blooms; also another crop of Endive; planting Cauliflowers and Paris Cos Lettuce; clipping hedges and cutting Laurels; pricking dead flowers and leaves off flower beds, and pegging down such plants as require that attention; thinning Turnips and drawing drills in which to sow Spinach; sowing Snowball and American Strap-leaf Turnips; putting in cuttings of Carnations and Pinks under hand-lights; planting out Wheeler's Imperial and Heartwell Early Marrow Cabbages for autumn use; layering Strawberry runners, three in a bunch, on pieces of turf 6 in. square, for making new plantations; stopping and nailing in the shoots of Tomatoes; looking over Cucumbers and Melons, stopping the shoots at one joint past the fruit, and earthing them up a little where required; mulching late Peas and Beans with well-rotted manure

July 13.—Potting old winter Carnations and staking them neatly; shaking out and repotting old plants of Poinsettias; pulling up Shallots and laying them in the sun to ripen; netting Currant, Cherry, and Gooseberry trees; plunging Chrysanthemums and Cherry trees in pots out-of-doors; sowing a little Chervil for autumn and winter use; also Mustard and Cress; taking up and dividing a quantity of old Polyanthuses; planting out Celery in trenches; getting up early Potatoes and storing them away for seed; hoeing among Gooseberries and Currants, and all other growing crops.

July 14.—Plunging all Roses in open ground, and placing Azaleas out-of-doors to ripen their wood and clear them of thrips; storing away Shallots and Garlic on floor of cool loft, and shading Peaches that are ripe, in order to keep them back; sowing Green Curled and Frazer's Broad-leaved Endive; pricking off herbaceous Calceolarias; also Cinerarias and Primulas; picking off the dead flowers and nailing and tying in Roses on walls; cutting herbs and placing them in an open shed to dry.

July 15.—Sowing Red and White Turnip Radishes; putting in cuttings of different sorts of Pelargoniums; stopping and nailing in the leading shoots of Peaches, Nectarines, and other wall fruit; sticking Peas and getting them earthed up; potting Roses in a mixture of loam, manure, bones, charcoal, and sand; planting May-sown Autumn Giant Cauliflowers on land lately cleared of Peas; leaving the lights of Peach house open day and night where the fruit has all been gathered; also giving abundance of air to all Vines where the Grapes have commenced to colour.

July 16.—Sowing Canadian Wonder Dwarf French Beans; potting on Begonias, Palms, and Dracænas for table plants; earthing up early Celery when the soil is dry and in workable condition; stopping and pegging down Vegetable Marrows, and giving them a good soaking of manure water; looking over Vineries, stopping laterals, and giving all late Vines a good soaking with guano water; potting Strawberry runners; also Coleus and Balsams; sowing Cucumbers for late crops; also Turnips, Radish, and Chervil; planting Green Cos, Bath Cos, and Neapolitan Cabbage Lettuce; also late Celery; putting in cuttings of Hydrangeas, scarlet Pelargoniums, Cytisus, and Coleus; hoeing among Raspberry plants.

July 17.—Potting Mrs. Marshall and Rose of Castile Fuchsias; also Abutilons, Clerodendrons, and repotting young Cyclamens in loam, leaf soil, and sand, afterwards placing them in a cold pit and shading them until well established; sowing Batavian and Green-curled Endive, Hill's Incomparable, and Early Market Cabbage; also Cucumbers for winter supply; digging land in which to plant Wallflowers, and earthing up Cauliflowers and Winter Greens. Giving Peaches and Nectarines a good washing every evening with the garden engine to keep down insects.

Ferns.—Keep a moist atmosphere; water growing plants abundantly, dew them gently overhead with tepid water, but refrain from damping the fronds of Gymnogrammas, Cheilanthes, Maiden hair, and other such Ferns; and repot any that have well filled their pots with roots and that are not already in large pots. Seedling Ferns must be pricked out after they have germinated and can be transferred without difficulty from the seed-pans. Spores, *i.e.*, seeds, should always be sown as soon as they are ripe, and young plants growing on the fronds of Ferns should be separated and treated as ordinary plants, or the fronds containing them may be taken off and layered. Keep a sharp watch over insects of all kinds and remove decaying fronds.

Biennials and Perennials.—Sufficient space in the reserve ground should be now prepared for the reception of the different kinds of biennials and perennials sown some time ago. These, as soon as they are large enough to handle, ought always to be pricked out from 4 in. to 6 in. apart in nursery beds, where they can remain through the winter until spring, at which time they should be finally planted where they are to remain. It is a very common occurrence to see the plants left standing in the seed-bed until they are so weakened by overcrowding as to be of little value. If the soil in which they are to be planted be of a heavy adhesive nature, it must be made lighter by the addition of sand and decomposed vegetable matter, so that the plants when removed in spring will have an abundance of roots, a condition not possible where the ground is close and impervious, but it should not be made rich by the application of manure, as the object is not to induce rank succulent growth, but rather that of a compact character, such as will enable the plants to pass unscathed through the winter, and to suffer little or nothing whatever from the effects of their subsequent removal.

Trees and Shrubs.—Privet, Hawthorn, Holly, Yew, and other hedges may now be pruned with the knife, but where they are not in conspicuous positions that operation may be done with the shears. Evergreen shrubs, and even choice Conifers, are now being pruned into shape with the knife. From Rhododendrons, Magnolias, Azaleas, and other similar things, the beauty of which is over, the old flowers are being removed, and, where time can be spared, the seed-pods also are picked off.

Fruit.

Vines.—Where Grapes are stoning and show the slightest indication to scald, keep the interior of the Vinery in which they are as cool at all times as a greenhouse until the stoning process is over, and not 3 per cent. of the berries will be injured. This scalding, as it is termed, consists in the most prominent berries becoming soft and brown on one side, as if it had been burnt with a hot iron; sometimes a single berry here and there throughout the bunch is affected, and in more severe cases the whole side of the bunch is destroyed. Many a bunch which promised well to begin with has through this been reduced to almost nothing in a short time. A burning sunshine is the chief cause of the disease, for in dull, sunless weather nothing of the kind takes place. When sufficient air cannot be admitted, a temporary shading is often placed over the glass outside to keep down the temperature inside. Midsummer Grapes are colouring fast now, and 1 in. or 2 in. more opening may be left on the ventilators all night with advantage; on mild, wet, dull days the front ventilators should not be kept entirely shut. Be careful to keep the Vines from which all the fruit has been cut perfectly clean from every form of insect. The best eyes from which to raise next year's Vines are those selected from the earliest-ripened wood, and this fact in itself should be sufficient inducement to ensure attention.

Melons.—Melons in frames, &c., will now be growing fast, and must receive every attention in thinning out superfluous shoots, stopping those retained as soon as they reach the sides of the frame; this will cause them to throw out bearing wood. Keep up the necessary warmth in the beds by slight linings; these will not require now to be so heavy as earlier in the season when the weather is cooler, but with late Melons in frames the beds must not be allowed to get cold, or the plants make little progress and the summer is too far advanced before the crop comes to maturity. Woodlice are a great nuisance where they exist in large numbers in Melon pits or frames, and before the fruit begins to ripen measures should be taken for their destruction. They are not at all particular as to their food; slices of raw or boiled Potatoes, or pieces of Apple placed in the bottom of a few small pots and covered with hay or Moss, will attract them in numbers, while by looking over them every morning and destroying, they can be kept down so as to cause little inconvenience. It is only where such precautions are neglected during the advancing stages of the crop that woodlice exist in such numbers as to do serious mischief.

Wall Fruit Trees.—These will require careful attention in trying to keep the legions of aphis and grubs in check. On the care and attention, therefore, now paid to keeping insects down, and the thinning and regulating the young wood, so as to get it well ripened, will depend the success of the crop next year. In addition to handpicking the grubs, the syringe must be used freely on wall trees to try to clear them from filth. The shoots of Peaches and Nectarines should be kept nailed in as they advance, for high winds will do great damage to the young gross-growing trees. Now that the proper amount of wood can be selected for next year's crop, superfluous growths should be removed, and such young shoots as are retained laid in in such a manner as not to shade the fruit. Young shoots of Figs should be loosened from the wall, and Cherries and bush fruits be netted to keep them from birds. If the American blight puts in an appearance on Apple trees, a little soft soap or oil must be rubbed on the parts affected, and if this is done in time, it will effectually stop it from spreading. Thin out the canes of Raspberries where too numerous, and secure them against wind breaking them down.

Vegetables.

Planting Cottager's Kale.—A good space should now be planted with the useful Cottager's Kale, as this is a most excellent vegetable, and so hardy that it will stand even our severest winters. It is much better to have a good breadth of it than to grow several varieties of similar Greens that are not equal to it in any way. Give the plants 20 in. space in the rows, and allow as much between each row.

Vegetable Marrows and Endive.—Thin out Vegetable Marrows sufficiently, not allowing them to get too much crowded, and if the situation be at all exposed, secure the shoots so that they will not be blown about by the wind. See that they are well supplied with water. Wanting this, the plants will not bear to the end of the season. Make a sowing of the Batavian Endive and also of the Green Curled; these will come in as an autumn supply, as the plants from this sowing will not be so liable to run to seed as those sown earlier. Do not put the seed in too thickly, as nearly all of them vegetate, and are not so liable as many to suffer from the ravages of birds or insects.

Cucumbers.—Cucumbers that have been bearing from the commencement of the season and are now falling off a little should have some of their shoots thinned out, and a little fresh soil added to the surface of the bed. In this the shoots will strike root from the joints, where required, by pegging them down. If the plants be clear from insects, thus treated they will again push out growth and fruit freely.

GLASSHOUSES & FRAMES.

HOW TO GROW HERBACEOUS CALCEOLARIAS.

CALCEOLARIAS may be said to consist of two distinct sections—the shrubby and herbaceous—which do not readily blend with each other. The shrubby sorts are well known as useful decorative plants for the flower garden during summer, although they are now less favourably regarded as bedding plants than they have been in times gone by, a circumstance due in a great measure to a difficulty which has in many localities been experienced with respect to their culture. The herbaceous section are seldom used as bedding plants, but are found to be exceedingly useful in greenhouses, conservatories, and even in sitting rooms, in all of which with attention they will continue to be highly ornamental for a period of not less than three or four months. Herbaceous Calceolarias may be readily increased by division, or cuttings inserted in light soil or sand, and placed in a close pit or frame, an operation which should be effected soon after the plants have ceased flowering; but unless it be with the view of increasing unusually meritorious kinds, propagation by this method is seldom resorted to at the present time, as herbaceous Calceolarias can now be raised from seed, and the plants so obtained will be found to possess every good quality that can be desired or expected. A friend of mine at Bury St. Edmunds has for years devoted attention to this section of Calceolarias, and his plants each year are greatly in advance of those of former years. The result has been secured by a judicious system of selection, having reference to the habit of growth, form, texture, and healthy colour of the foliage, as well as the form, colour, size, and markings of the blooms. The foliage is clean and healthy, the flower-stalks stout and robust, carrying abundance of large, well-formed blooms, the markings of which are of the most diversified character, and the colours vary from a straw-white or pale primrose-yellow to the richest crimson-magenta and deep maroon. So distinctly diversified, indeed, are the markings of the flowers, that out of a very extensive collection it was found to be difficult to select two plants whose blooms were in all respects alike.

The seed is sown about the middle of July, and the plants generally commence flowering about the end of April. They are flowered in pots 7 in. or 8 in. in diameter, and when large specimens are desired pots of larger dimensions are used. The seeds of the Calceolarias being exceedingly small, a little care is necessary in sowing as well as in the treatment of the plants during the early stages of development. It is advisable to use for the purpose small seed-pans, or pots some 6 in. in diameter. These should be well drained and filled with light rich soil, which should be pressed moderately firm, placing the rougher portions upon the Moss which should cover the crocks forming the drainage. The surface of the soil should be made perfectly smooth and level, and should then be well watered with a fine-rosed watering-pot. When this has been absorbed, the seeds should be sown upon the wet surface slightly pressed down; and they may have a slight portion of light soil or silver sand dusted upon them. Some growers, however, do not cover with soil at all, but merely cover the surface of the pot with a piece of glass which the rim will prevent from pressing upon the soil. The pot or pan should then be placed in a pit or frame, or under a hand-glass, so that it can be shaded from the sun, or the pot, with its glass covering, may be placed on the north side of a wall, where the seeds will speedily germinate. As soon as the plants are large enough to handle they should be pricked into pans of similar soil, and shaded from intense sunshine; afterwards they should be potted singly into 3-in. pots, from which they may in due time be transferred into pots of some 6 in. or 8 in. in diameter, in which, unless in cases where large specimens are desired, they may be flowered. They should be wintered in a light pit, or on a shelf in a greenhouse as close to the glass as possible; and as Calceolarias are very liable to the attacks of aphides, the structure containing them should be fumigated with Tobacco or good Tobacco paper whenever these pests make their appearance.

The soil used for the final shift may be composed of about two parts turfy loam and one part well-rotted hotbed manure or leaf-soil, with the addition of a portion of silver or other sharp sand, should the loam be of a heavy or tenacious character. D. F.

THE PYRAMIDAL BELL-FLOWER.

(CAMPANULA PYRAMIDALIS.)

Few amongst what may be termed half-forgotten plants are less deserving of neglect than this stately Campanula, which, when well managed, stands a long way at the head of all the family. Its fine proportions, elegant habit, the length of time during which it remains in flower, and the contrast afforded by the white and the blue varieties, are far from all that can be said in its favour, for it is alike adapted to the hall of a mansion or the window of a cottage, the greenhouse or the open ground. It has yet another property of considerable importance—its immunity from insects; for it is rarely, if ever, affected by aphides, red spider, or any other of the numerous pests, the necessity for an incessant war against which does something, especially with amateurs, to mar the pleasure derived from cultivating the majority of plants. Nothing but the disposition that is so prevalent to discard old plants in favour of new ones, regardless of their merits, can account for this Campanula, along with so many other equally well-proved subjects, being so little grown, flowering as it does during the late summer and autumn months, when the majority of blooming plants are over. It is especially useful for greenhouse decoration, where its stately spikes, clothed with a profusion of blue or white bells, afford an acceptable contrast to anything with which it is associated. In an ordinary living-room it will keep on blooming for six or eight weeks, all the attention required during the time being to supply it with water, and to pick off the flowers and seed vessels as the former decay, which otherwise interfere with those produced in succession.

To get the plants strong before the end of the summer, which is important, the seeds should be sown early in pans or boxes, in any ordinary light soil, whether it be loam or peat—I have found it matters little which. Press the surface smooth, and slightly cover the seeds with a little fine material. They will vegetate in a greenhouse or cold frame; but if a little heat can be given they will come up quicker. As soon as large enough to handle, the seedlings should be moved singly into small pots, kept near the glass, well supplied with water, and have sufficient air to keep them sturdy. If raised, as I have suggested, in a little warmth, the young plants should be prepared by cool quarters in a frame, with more air, for two or three weeks previous to the middle of May, when they should be turned out-of-doors in a bed of moderately rich soil, sufficiently light to admit of their being taken up for potting in the autumn without the mutilation of the roots unavoidable where the ground is heavy. Fifteen inches apart will give room enough for the plants to thrive, and all they will want during the summer is sufficient water when the weather is dry. This they should have, as, if not kept growing freely, they will not get strong enough to produce flower-spikes of full size. They should be taken up, with as little injury to the roots as possible, about the end of September, and placed in pots from 8 in. to 12 in. in diameter, according to the size of the plants, using a fair amount of drainage and good, moderately rich, and open soil, giving a good watering immediately, and putting them for a week or two in a frame, kept a little close until the roots have begun to act, or they will lose some of their leaves, which would necessarily reduce their strength. Near the glass in a cool greenhouse will be the best for them during the winter. Here they will keep on increasing in strength at the roots and making more leaves. This Campanula is a very free rooter; and through the spring, as the pots get well filled with young fibres, the plants should be regularly supplied with manure water, which ought to be continued weekly up to the time of flowering, by which means the spikes will often grow to a height of 9 ft. or 10 ft. They look much the best when each plant is only allowed to produce a single bloom-stem; to confine them to which, all that appear above one should be cut away as they show themselves. When the flowering is over, a plant or two may be allowed to mature seed; the rest should be cut down and planted out in the herbaceous ground, or wherever they are likely to be effective. This Campanula is a native of Carniola and hardy, consequently can be raised by sowing the seeds in the open ground; but if treated as above advised time is saved, and for pot culture the flower-stems forthcoming from plants raised by early sowing under glass are very much finer than I have ever seen from examples raised in the open air. It may also be increased from suckers; but these, again, rarely produce anything like the tall spikes that seedlings will.

I look upon it as anything but advisable to follow the course, now often recommended, of growing numbers of plants in greenhouses whose proper place is out-of-doors in the open ground; yet this Campanula—so easily managed, and so exceptionally fine when well grown—supplies a want amongst pot plants that very few greenhouse subjects do. I should recommend that both the white and the blue varieties be grown. In no position out-of-doors is it seen to better advantage than when planted amongst dwarf Roses, the latter pegged down. Strong plants from seed, that have not yet bloomed, introduced amongst the Roses in the spring, after the latter have been pruned and the shoots pegged into their places, make a display after the height of the Rose blooming is over such as I have never seen equalled by anything else. Here, again, its non-liability to aphides stands it in good stead, and saves that continual attention inseparable from the growth of any plants along with Roses that suffer from the aphides certain to be communicated by the Roses to them.

T. B.

How to Grow Epacrises.—These excellent plants for greenhouse decoration have a strong objection to artificial heat during certain stages of their growth, while at others it is highly beneficial and even necessary. Although the flowers do not fall off, like those of Camellias, forcing causes them to come small and puny and without their proper colour, and not only this, but it endangers the health of the plants; and yet, strange as it may appear, at certain times, as just remarked, a little warmth does good. This is after they are cut down and have begun to break again, and from thence onwards till they have made plenty of young wood, after which, the cooler and more airy they are kept the better and finer will the individual blooms be. All the different sorts of Epacrises delight in fibry peat, which should be chopped up moderately fine and have a portion of the earthy matter sifted out by using a small-meshed sieve, and as this will carry away any grit the peat may contain, the loss must be made good by adding a heavy sprinkling of sharp silver sand, and mixing the same well up before using. One of the most important things to attend to is to see that the pots are properly drained, as nothing is so inimical to the welfare of the plants as water-logged soil. A single crock over the hole, placed so as to fit and prevent the ingress of worms, is a good practice, and over this about 1 in. in depth of others broken about the size of a nut. If on these a little Sphagnum or common Moss be scattered, it will keep the interstices clear by preventing the finer portions of the peat from running amongst them, which it is otherwise sure to do, and thus impede not only the percolation of the water, but also interfere with a free circulation of air through the soil, by which alone roots can be kept in health. These being of a hair-like nature, the potting should be done firmly by ramming the peat well down with a blunt stick made for the purpose. The great mistake many make when shifting Epacrises and other hard-wooded plants is in filling the pots too full, by doing which sufficient room is not left to hold enough water to thoroughly moisten the ball through; and this is a frequent cause of plants dying or getting stunted in their growth when, to all appearance, the soil is quite wet enough, if judged by that on the top. Even with the smallest pots, the space left should not be much less than 1 in., and for others of larger size nearly double that is necessary; and with this much allowed, it is advisable, when watering has to be done, to go over the plants twice, so as to ensure a thorough soaking, for in this way alone can Epacrises be kept in perfect health.—S.

Propagating Gloxinias.—For ordinary purposes these can be raised yearly from seed, and where a good strain of this is at command the plants from such a source are all that need be desired; but where it happens that more than usually fine varieties exist either from seed or otherwise, it is well to increase them by cuttings made from leaves in the usual way. If the kind is scarce a single leaf will make three or four by notching the midrib at the underside, laying it flat on a pot or pan filled with sandy peat, ½ in. of the top all sand, and putting on the surface of the leaf, over each incision made on the underside, a pebble about the size of a pigeon's egg to keep the cut parts in contact with the sand. They need to be kept slightly, but not too moist; in this way they will form small bulbs in the course of the summer; but where the leaves of the kind or kinds to be increased are plentiful, larger bulbs will be obtained by putting each leaf in as a cutting, simply inserting the stalk end to the extent of 1½ in. in the soil.

Gardenias as Greenhouse Plants.—Gardenias may be made to thrive in an ordinary greenhouse by adopting the following treatment. After flowering, say in June, place them out in the open air in a somewhat sheltered situation. In September place them in the greenhouse, and in the following June and July they will yield abundance of blossoms, after which they should be treated as before. In this way a quantity of plants are treated in Messrs. Henderson's nursery at Pine-apple Place, and at the present time they are as healthy and floriferous as Gardenias could be.

Annuals for the Greenhouse.—Perhaps the most useful annual of all for pot work is Rhodanthe maculata alba and also Rhodanthe maculata atrosanguinea. These have very good points to recommend them. They are dwarf in habit, profuse flowerers, rich in colour, and chaste in form, and their flowers are "everlasting." They may be sown every month in the year with a certainty that the plants will bloom. They are very valuable decorative plants when grown in 4½-in. sized pots; but where they are grown for cutting from they should be grown in 6-in. sized pots. A light rich soil with good drainage will suit them well, and about six plants should be left in a 4½-in. sized pot, and about eight plants in a 6-in. sized pot. A large sowing of these should be made about

the middle of January, the produce of which will prove valuable during the early summer months. Next let us speak of the dwarf varieties of Sweet Scabious. These possess an excellent habit of growth, and are very floriferous. The colours of some of the varieties are very striking, and are quite distinct from anything I have ever seen in any other class of plants. These are most useful as autumn plants; and as they are somewhat slow growing, they will require to be sown earlier than many other annuals. The end of the present month is the best season in which to make a sowing. The best size pot in which to grow them is 8½ in., and these should be plunged outside during the summer, always taking care that the plants do not suffer from want of moisture at the root.—R.

FINE-LEAVED HOTHOUSE CLIMBERS.

Cissus discolor.—It is not too much to say that this is one of the most singularly beautiful of hothouse climbers. When grown in a warm temperature, which it ought to be, the leaves acquire that gorgeous lustre and colour which give the plant its splendid appearance; and it is only when it is allowed to scramble in festoons about the roof of a house, drooping its long tapering shoots here and there, that it is seen in its true character. To train it on a balloon-shaped trellis, as it often is for exhibition purposes, is about the worst way of growing it that could be conceived. The plant must have a high temperature and generous treatment, as it will grow 20 ft. or more during the summer months, and produce leaves splendid both in size and colour, and such as can be produced in no other way. It is seldom that this Cissus is grown in this way or grown well, and though the leaves are always beautiful, it is only when it is growing fast and draped with plenty of young shoots and leaves that a true idea of its beauty can be formed. It strikes freely from cuttings made from the points of the young growing shoots, and inserted in sand under a bell-glass, and plunged in a bottom-heat of about 90°. Young plants succeed best. We used to strike them annually in February for the purpose referred to, and always had good plants. As soon as the cuttings were struck they were potted off in 4-in. or 5-in. pots, and again plunged in bottom-heat in a hot pit, and when the roots reached the sides of the pots they were shifted, for the second and last time, into 10-in. pots; the compost should be loam and peat in equal quantities, about one quarter well-rotted cow manure, and plenty of sand if the loam be heavy. After this they were put in the same pit again till established, and then removed to the hothouse about the middle or end of April, when the temperature of the house had attained to about the summer figure. A plant was set to each iron column, up to the top of which they ran directly, and then they were led round the house on both sides of the path with string, which is handier than wire for festooning. It is too late now to put in cuttings, but young plants are cheap, and half-a-dozen are sufficient for a long house if treated as here directed. The only enemy almost the plant has is the mealy bug, but a little attention with the brush will keep it down if the plants be kept growing fast, as they then run away from it. Frequent applications of liquid manure will also be serviceable in promoting a quick and vigorous growth.

Cissus porphyrophylla, the subject of our illustration, is also a free-growing stove climber with variegated leaves, which may be usefully employed for clothing a pillar, rafter, or wall. It succeeds well in a pot in either peat or loam, but when space is limited it should have root-room proportionate to the space which it is intended to occupy, as if it has too much liberty at the roots, it will need cutting in more than is desirable; the soil when exhausted can easily be renewed in the spring before growth commences, as it sustains no injury from the roots being interfered with.—J. S.

ROSES.

White Fairy Roses.—We lately saw a house full of these in the Pine-apple Nurseries, Edgware Road, London. They were dwarf and compact, and laden with pure white, well-shaped blossoms. The flowers of Fairy Roses are, as a rule, of little value when fully expanded, but in the case of this kind they are an exception. Fairy Roses are not difficult to propagate, and they make admirable little window or greenhouse plants.

Green Fly on Roses.—A simple yet effectual method of clearing Roses of this pest is as follows:—Take a two-gallon water-pot full of water, put into it two wineglasses of paraffin, and then well mix with the syringe; afterwards syringe the Roses with the mixture. It will kill every fly, and will not injure the tenderest shoot or the Rose blooms. The air will very soon remove the smell of the paraffin. I have used it on my pot Roses in the house this year, and on my Gardenias at the rate of one wineglass of paraffin to two gallons of water.—THOMAS GREEN.

Roses on Banks.—In gardens where banks occur nothing could be more appropriate to plant them with than Roses on their own roots pegged down. The Roses would succeed

Bank of Roses.

remarkably well in such a position, provided the soil was good and mulching was not neglected in summer. Gladioli, pyramidal Campanulas, and other plants might be placed between the Roses with excellent results.

HOW TO COLLECT, DRY, AND MOUNT PLANTS.

IN forming a collection of dried plants there are four different processes to be performed. The first is the collection of the plants, the second is the preservation and drying of them, the third is the mounting, and the fourth the classification and arrangement. The manner of collecting plants can be very little varied, but there are many methods both of drying, preserving, mounting, and classifying the specimens.

First, a tin case, called a vasculum, will be found very useful for carrying the specimens immediately after being gathered. It will prevent them from withering for several hours, but yet there are some plants which can only be secured by being placed immediately in the drying paper; therefore, it is as well to take a few sheets of this paper placed between two pieces of wood or strong cardboard, in addition to the vasculum, when starting for a botanical ramble. A strong knife ought also to be taken to dig up the plants with their roots. In every case perfect and typical specimens should be gathered. When dried they are much more valuable if they embrace the entire plant, its root, stem, flower, stem-leaves, radical leaves, some of its flower-buds, and its fruit or seed. But if this rule is to be strictly adhered to, two specimens must be procured of each, for very few plants have flower-buds, flowers, and fruit or seed at the same time. On arriving home after a botanical ramble, the plants gathered should only in very few cases be placed immediately under pressure. They ought to have their stems immersed in water, and be left till the following day, when the flowers, which were closed when taken out of the vasculum, will have opened. Or, if there are only flower-buds, the plants should be left in the water until some of them expand.

Secondly, to dry the plants, the usual plan is to place them in natural positions between two sheets of bibulous paper under a slight pressure. Botanical paper specially prepared for drying plants is sold, but blotting paper serves quite as well, or even when that cannot be procured, newspaper will easily extract the moisture from them. When first the specimens are placed in the drying paper they are often very difficult to arrange in suitable positions, in consequence of their natural stiffness; but if this is the case, it is the best plan to arrange them as far as possible, and then leave them for a day under pressure. By this time they have become softened, so that they can easily be made to assume any form. If any of the leaves are doubled, they should be straightened with a penknife; and if there are so many petals in each flower that in drying three or four overlap each other, they should all be severed from the plant and dried separately; in mounting they can easily be replaced. But before placing them in the drying paper many specimens have to be botanically trimmed, and care has to be taken during this trimming process lest any notable features of the plant become altered. For example, suppose a portion of a Cow Parsnip (Heracleum spondylium) is to be pressed and dried: its stem is so thick, that it would require many pounds' weight of pressure, and a long time to become dry and flat. But to save all this extra pressure and increased space of drying time, the stem may be entirely cut away, except a thin strip, and the plant when mounted appears no less perfect than if its stem were whole. This plan ought to be adopted in the case of all thick and succulent or juicy-stemmed plants. Suppose, again, that we have to press such a plant as the Marsh Rosemary (Andromeda polifolia), or the Toad Flax (Linaria vulgaris), the stems of which are so covered with leaves, that it is almost an impossibility to make neat specimens of them as they naturally are: several of the leaves ought to be carefully cut away from the stem, and then those remaining can be easily pressed in their natural positions.

When the plants are arranged in the drying papers the pressure may be exerted either by placing them in books, or in a heap under a board which is weighted. A screw press is generally used by botanists. During the pressing and drying process the specimens ought to be well looked after. Twice or at least once a day they should each be placed in dry paper; or if neglected and left in the same part of the bibulous paper until they are perfectly dry, they require more time than they would do if occasionally removed to dry portions of the paper; and, besides, they are liable to lose their colour and become mouldy. Yet, with all precautions, it is almost impossible to preserve the flowers of delicate tints with those tints when dried. The colours most liable to change are light blue, pink, some whites, some yellows, and the green leaves of Orchids. Concerning the preservation of these colours, there was a short paragraph in one of the scientific journals a few weeks ago, in which it was recommended that with a small paint-brush the petals should be covered entirely with a strong solution of alum before being placed in the press.

Thirdly, before mounting all specimens should be perfectly dry, or if not, they are liable to become covered with mould. Separate sheets, of paper of a size not less than foolscap are the best to use; these may be too large for some plants, but two or three species may be fastened to the same sheet if they are small and all of the same class. There are two methods of fastening the dried plants to the sheets of paper: the one is, to use gum or glue and entirely fasten them with it; the other is, to use small slips of gummed paper, placing them across the stems and tips of the leaves. It is better not to keep strictly to either of these methods, but to use both, according to which

will serve the purpose best. It requires a little practice to manage the narrow slips of gummed paper easily, for nearly all of them ought to be less than the sixteenth part of an inch across, but after a time they are not much trouble. The only difficulties are seeing which is the gummed side of such narrow pieces and preventing them from sticking to the fingers intead of to the paper. First cut the gummed paper into these narrow pieces; then suppose a piece is required to place across the stem of a plant which is being mounted; cut off from one of the strips a short piece sufficient to easily fasten the stem to the paper; then hold this small piece between yourself and the light, so that the light can be reflected from it to the eye; the gummed side can then easily be seen. Wet this side, and with the point of the scissors pick it up; place it, gummed side downwards, over the stalk; wrap one of the fingers in a piece of linen—a pocket handkerchief will do—and then press upon it. It will soon dry, and thus fasten the portion of the stem over which it is placed. Afterwards proceed with the other pieces of gummed paper in the same way, placing them over the stem wherever they are required. Next the leaves and flowers must be fastened. Gum will answer this purpose in many cases better than gummed paper. In gumming the leaves either cover them entirely, or only touch the extremities, but always, whether the gum is used universally or partially, well press these parts, or the specimens, after being mounted for some time, will very likely shrivel and turn brown. This pressure may be exerted by the finger wrapped in linen, as in the case of the slips of gummed paper. When the plant is firmly fastened to the mounting paper, its Latin or scientific name ought to be affixed to it, in addition to its common English name; and if it is a native of Britain, it is better to add also the month when it was found in flower and the locality where it was growing.

Fourthly, passing on from the more practical portion of the subject, we come, to the more scientific portion. This is the classification of the specimens. There are two methods of arranging them according to their several characters. The one is known as the artificial system, and the other the natural system. The higher divisons of classes and orders in these two systems are founded on different principles, while the minor divisions, or the genera and species, are the same in both. In the artificial system one or two organs are chosen, and by means of these the classes and orders are formed; while in the natural system these divisions are made after taking into account the alliance of plants in all their important characters. Thus, although the artificial class and order of a plant may be known, its structure and properties are not thereby learned; but when the place of a plant in the natural system is known, a knowledge of all its structural relations and affinities is acquired. Therefore, the latter or natural system is much the best for the arrangement of a herbarium if it is to be instructive and useful.

In arranging the plants, it is sufficient to have them in their own orders, but then these should follow each other in natural succession; thus, the orders of the sub-class Thalamifloræ should come first in the herbarium, then those of the Calycifloræ, and so on. Place the species of the same order or family together, using a whole sheet of paper or thin cardboard as a kind of portfolio, and write the name on the back. A. S. W.

Labels for Plants.—I enclose a small slip of ground glass which I use for writing the names of my plants on instead of wood or metal labels. It is cut from glaziers' small scraps of glass, which can be bought for a few pence; in fact, I get them ready cut for much less than I can buy the painted wooden ones. I formerly used black-lead pencil, but found it washed off in course of time; but now I use an ordinary blue lead pencil, which will stand any amount of water, and even a moderate amount of rubbing, before it will come off. Several of my friends have adopted them since they saw how neat, clean, and distinct they looked when in the sides of the pots. I do not claim to be the first who may have used them, but as I have seen so many different dodges in the GARDENING ILLUSTRATED, I thought this might perhaps be acceptable.—C. D.

ANSWERS TO QUERIES.

2381. — **Clay's Fertiliser.** — From use during the past and present seasons, I have formed a very high opinion of the fertiliser as a powerful stimulant and as a permanent improver of the soil; the latter qualification I look upon as one of the special advantages the fertiliser possesses over artificial manures generally. I am using it largely, both for market garden crops and on experimental plots. I have tried it on Wheat and other cereals growing on shallow land rather out of heart, and which looked very yellow and starved until they received a dressing of Clay's manure; the dressing has produced a very marked improvement.

Fine-leaved Hothouse Plant (Cissus porphyrophylla).

For Peas, Onions, Strawberries, Celery, Lettuce, Cauliflowers, and all the Brassica tribe, I can unhesitatingly recommend it. I am also trying it on a considerable scale for Potatoes, Roses, root crops, Vegetable Marrows, and Cucumbers, and hope to render a good account of its effects on these further on. From 1 cwt. to 1½ cwt. per acre is the extreme that can safely be used for general garden or field crops. I have given the fertiliser to a few plants in pots, and find it produces freedom of bloom, combined with very healthy wood, but it must be used sparingly; about a teaspoonful at a time to a growing plant in a 6-in. pot will be the best guide I can offer. I like to alternate the dressings with clear soot water, allowing an interval of about ten days between each.—T. LAXTON, *Experimental Gardens, Girtford, Beds.*

2408.—**Making an Asparagus Bed.**—Next autumn, or any time when the land is vacant, wheel on a good dressing of manure, and if the soil is heavy add sand, burnt earth, charcoal dust, ashes, or anything of a similar nature to make it lighter. Trench it as deep as it will bear up to 3 ft., but do not bring any bad soil to the top. Mix the manure well with the soil as it is turned over. In the spring give it a good dressing of soot and salt, and fork it lightly in. In April procure some good one or two year old plants, and plant them the moment they come to hand in shallow trenches 3 ft. apart, and 18 in. from each other in the trench. Spread the roots out evenly, and cover the crowns 2 in. deep with some light, well pulverised soil. It is a good plan to prepare specially a few loads of compost for this purpose, as it gives the plants an early vigorous start. This is specially desirable in heavy, cold land. A light crop of some other dwarf-growing vegetable may be had from between the rows the first two years. Afterwards the plants will occupy most of the land. I may add the bed may be either 5 ft. or 500 ft. wide—the principle is the same for both.—E. H.

2413.—**Show Celery.**—To produce Celery for exhibition the right kind should be chosen and grown on rapidly without a check, and as such produce is not tasted by the judges, flavour is of no consequence—only size and finish need be regarded. Liquid manure should be frequently given which may be varied occasionally, sometimes giving guano in solution, at others drainings from the farmyard, or soot

mixed with water. Strings of soft roffea or matting may be tied loosely round as the plants grow to keep them together. All small offsets that spring from the sides of the main head should be removed before any covering is applied. Paper is the best material for covering when it is necessary for applying it. Collars are sold for the purpose by some of the seedsmen, which can be passed round the plant and fastened with hook and eye, but any ordinary paper will do simply passed round one or more folds thick, and secured with soft matting. It must not be bound round too tightly, as room must be left for the stalks to grow. The blanching material should be of a yielding nature, and at the same time effectually exclude the light. Soil finely pulverised is usually employed taken from each side of the rows in equal quantities, but where this is harsh and stubborn some material from another source should be sought; this is especially necessary where worms and slugs abound. Fine sifted ashes, burnt earth, and old tan are all suitable, and do not tarnish the skin of the stalks. The earthing should be finished about three or four weeks before the show.—E.

2406.—**Cauliflowers Going Blind.**—Blindness in the Brassica family may arise from various causes. The heart of the plant in its young state is no larger than a pin's point, and at that early period the least injury to it is fatal. Insects are often the cause of blindness; thick sowing may conduce to it; as may also drought or any cultural condition that produces a sudden check; and it may indirectly arise from constitutional defects.—E. H.

2394.—**Fruit for Exhibition.**—Thin the fruit now, the Plums to 3 in. or 4 in. apart, and the Apples and Pears to 6 in. Pinch or cut back all young wood, except leading shoots, to four leaves; and if dry hot weather sets in mulch or cover the soil over the roots with 3 in. or 4 in. of manure, and give a good watering occasionally. When the fruit begins to ripen turn on one side, or otherwise remove all overhanging foliage, and protect from birds.—E.

2401.—**Climbers for Bleak Aspect.**—The Banksian Rose, Wistaria sinensis, Ampelopsis Veitchi, Clematis Jackmani, Lonicera grata, Jasminum nudiflorum; one or two of the variegated Ivies might be added. I saw the front of a house the other day one side of which was covered with a small-leaved silver variety and the other with a golden form. All that was required to make the front of that house perfect was a few trailing shrubs of Clematis, or some other flowering creeper over and among the Ivy.—E. H.

2343.—**Figs Rotting off.**—Figs often drop in the way stated, especially if the roots are deeply buried and unrestricted. The blossoms of the Fig are inside the fruits, and their setting is not perfected till the fruits are half grown. During the period of inflorescence plenty of ventilation and a brisk temperature should be maintained. Don't water with spring water; pond or soft water is best. Chills of all kinds should be avoided. Figs have been cast off by watering with cold spring water. Lift the roots in the autumn and bring them near the surface, working in some fresh loam and old plaster.—H.

2411.—**Azaleas not Blooming.**—It is evident that the plants in question did not properly mature their growth, and consequently failed to perfect flower-buds. Keep them in a light, well ventilated house until the beginning of August, when they should be placed in a sunny situation in the open air, housing them about the middle or latter end of September. The more they are exposed to sun and air when out-of-doors the more freely will they bloom.—C. B.

2320.—**Climbers for Greenhouse.**—The attempt to grow Grapes in the situation mentioned could only result in disappointment, as the only way in which they can be ripened in an unheated structure is to fully expose them to the sun's rays during the summer months. The list of climbers suitable for a north unheated structure is of a rather restricted nature. Passiflora Newmanni, Stauntonia latifolia, and Lonicera flexuosa would probably do fairly well.—C.

2330.—**Sulphur from Greenhouse Flue.**—We know of nothing more likely to answer the purpose than fire-clay. Beat it well and thoroughly stop the joints, ramming the clay well home. Do not make a fire until the clay has become quite hard and dry, and if the weather is hot, cover the joints with mats, so that drying progresses very slowly. In all probability, even with the greatest care, some cracks will declare themselves, in which case a thick wash of clay should be made and well worked into them with a brush, repeating the operation as often as may be necessary. In this manner we think there will be little danger of sulphur fumes escaping. Ordinary brick clay may be used, but it is not so good as fire-clay. We should, however, mention that the pipes should not come within at least 8 ft. of the furnace, or the heat of the fire at that part will be sure to crack the joints, no matter what material may be used to stop them. Carry a good solid piece of brick-work about 8 ft. into the house, and then commence with the pipes. It is generally near the fireplace where the sulphur escapes, consequently the brickwork cannot be constructed in too solid a manner at that particular spot.—C.

2393.—**Insects in Cucumbers.**—Take 1 peck of fresh soot, tie it up in a coarse bag or cloth, and sink it in a tub that contains about 30 gallons of soft water. Stir it about well with a stick for two or three days, then water the roots of the plants and soil round about without wetting the leaves. If it appears too strong, dilute it. Use it as often as the plants require water, and I have no doubt an improvement will soon be perceptible.—E.

2388.—**Grapes Failing.**—The cause of the failure appears to be deficient ventilation, and this is the rock on which a good many inexperienced Grape growers founder. Unless the Grapes were forced the heat named would be too exciting for winter, and if they were forced a low temperature, say 45°, should be commenced with, gradually rising as the Vines progressed until the blossoms opened, and even then a night temperature of from 60° to 65° will be ample. The border seems right. The management of the interior must be altered. More air and less fire-heat seems to be requisite. No Vinery should be altogether closed after the sun strikes it in the morning.—E. H.

2386.—**Lily Failure.**—The cause of the white Lily failing in the manner it does in some places is a mystery to me. The plant is reckoned to be of very easy culture, and yet in certain districts it will not give satisfactory results. In this locality (Surrey) I have failed to see a well grown mass of this old Lily. It lives, the bulbs increase in size, and are when taken up to all appearance sound and vigorous. It starts freely into growth, forms its flowers, which, although they expand, are never good, but the lower leaves turn black and eventually disappear, thus rendering the plant very unsightly. In the very same soil (alluvial) and situation its congeners longiflorum and auratum thrive satisfactorily. Whether the decay of the foliage is to be attributed to a disease or imperfect root action I cannot say; my own impression is that it arises from the soil being too porous and open on the surface. When the bulbs are planted I would make the soil quite hard around them, never afterwards hoeing or in any way stirring it. Early in the spring I would apply a good mulch of some kind, or I would carpet the soil around with some low growing plant. The Lilies as a rule do best when the lower leaves and roots are protected against the sun's rays or drying winds. They appear most at home when springing up from the midst of other plants.—J. C.

2416.—**Winter Gardening.**—In the first place we would form a neat edging of the common English Ivy, a plentiful supply of plants of which may be obtained by taking off the terminal shoots wherever it may abound, inserting them in a shady place, and keeping them well watered until well rooted. In planting, insert the shoots quite 6 in. in the soil, pegging each one down as it commences to grow. When planting the Ivy, such flowering bulbs as Snowdrops, Crocuses, Fritillaries, and autumn Crocus may be dibbled in here and there. They will thrive in such company, and will look very pretty when in bloom. Plants which retain their verdure during the winter months consist of Periwinkles, both green and variegated, Christmas Roses, Saxifraga umbrosa, the London Pride, Alyssum saxatile, Arabis albida, and Aubrietia purpurea. Then there are Pansies and Violas, which remain green throughout the winter, and flower freely during the spring and summer in a shady situation. Lamium striatum is an excellent plant for winter bedding, being prettily variegated, and remaining fresh and bright even in the most inclement weather. If diversity of colour is desired, there are Cerastium tomentosum and Stachys lanata, two effective white-leaved plants.—C.

2395.—**Roses to Flower at Christmas.**—The flowering season of some of the Hybrid Perpetual and many of the Tea Roses may, by a judicious system of culture, be prolonged into the winter months. It is, however, imperative that suitable sorts be chosen; otherwise, but little success can be expected to attend the attempt to do so. The plants intended for such late-flowering should, if the pots are quite full of roots, be at once shifted into larger pots, and be placed in the open air in a sunny situation, plunging the pots up to their rims. If the plants do not need fresh potting, plunge them in the open air and top-dress with rotten manure or Clay's Fertiliser. Water freely when needful, syringe in the evening in hot weather, and pick off all buds as they appear until September, when they may be allowed to form. As soon as cold nights arrive place the plants in a well ventilated structure. Be sure to give plenty of air and apply no fire-heat. Plants thus treated may be expected to give bloom up to December, and in mild seasons even almost to Christmas. The following kinds are amongst the best for the purpose—Gloire de Dijon, Souvenir de la Malmaison, Madame Lambard, Homère, Catherine Mermet, Perle des Jardins, Niphetos, Souvenir d'un Ami, Souvenir de Paul Néron, Aimée Vibert, and Adam. Many other kinds will flower late in the autumn, but not so late as these.—J. C. B.

2397.—**Cobæa scandens.**—The better plan would be to plant out the Cobæa in a bed of prepared soil consisting of one-third leaf-mould and two-thirds turfy loam. The plant will grow much more freely if thus accommodated, and will not need so much attention as if grown in a pot. The sooner the plant is put out the better. If carefully attended to it should cover the desired space the first year. When it is seen that the roots have taken good hold of the soil and that short growth is progressing, pinch out the main shoots, stopping the laterals, which will then form when they have made several pairs of leaves. The main point is to well clothe the lower portion of the wall before allowing full freedom of development. If it is not convenient to plant out, the plants may be potted into 10-in. pots, draining them well, and mixing some silver sand with the compost. Be careful not to overdose them with water until the pots get full of roots, when they will require liberal treatment in this respect. In order to maintain the plants in a state of vigorous health they must every year receive a dressing of some concentrated manure, or be watered every week with clear soot or guano water.—B.

2415.—**Budding Roses.**—The Rose in question may be budded any time during the present month, providing the wood is in a proper condition for so doing. Only the wood made during the present summer is fit for operating on, and the buds should be inserted before the bark becomes hard. Roses seldom flower well when growing in partial shade; they should have a light, airy position; underneath Vines is certainly not a good place for them. If planted in the border, the Rose will rob the Vines of a portion of their nourishment.—J. C.

2410.—**Calceolarias from Cuttings.**—If you allude to the herbaceous kinds, do not attempt to propagate them from cuttings. Sow some seed now, placing it in a cold frame. Prick out the seedlings when large enough to handle, eventually transferring them to small pots, shifting them on as may be necessary. The bedding kinds are propagated in October.—B.

2409.—**Plants for Shelves.**—Zonal Geraniums, Heliotropes, Fuchsias, Lantanas, single Petunias, Lobelias, and Tropæolums should all do well in the situation mentioned. Perhaps ventilation at the top of the structure is deficient, which would account for the plants drawing. They ought not to do so at that distance from the glass.—C.

2402.—**Canadensis sanguinea.**—Have you not in mind Sanguinaria canadensis, the Canadian Bloodwort? Seed of this may be sown when ripe in a cold frame. We have no experience of it for forcing purposes.—J. C. B.

2385.—**Planting Honeysuckles.**—Take them up at the fall of the leaf about the latter end of October, taking care not to let the roots dry. Taking up strong growing plants in a wild state is very different from transplanting cultivated specimens, and is generally un-

satisfactory. Better procure a good stablished plant in a pot.—J. C.

2413.—**Show Celery.**—Bind stout brown paper round the heads half way up; don t earth up too early, and when nicely growing, tie the heads up with matting; earth up in dry weather. I grow very good Celery with the treatment I have named.—W. A.

2323.—**Insects in Cucumber Frame.**—I find keeping a few toads in my Cucumber frame a good way of keeping them free from insects. I have also smoked the plants a few nights steadily, and I have had nothing to trouble me in the pit or frame.—AMATEUR GARDENER.

2384.—**Celery for Exhibition.**—I have grown Celery for exhibition, and, by binding stout brown paper about half way up the heads, I find them well blanched and quite free from worms.—AMATEUR GARDENER.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them again.

2462.—**Ageratums for Next Year.**—*Brown Eyes.*—Take cuttings now, and when struck pot them singly and place them in a sunny situation out-of-doors, plunging the pots in ashes. Shift into larger pots as necessary, and stop the shoots several times to make the plants grow bushy. In September remove them to the greenhouse, and they will flower in winter and spring; after which if they are cut back they will form good plants for the flower garden in June.

2463.—**Cutting Down Tall Geraniums.**—*Brown Eyes.*—We presume you mean zonal Pelargoniums. Cut them down now to within 6 in. of the pot. When they commence to grow again take off as much of the top soil as you can, and top-dress with good sandy loam and make firm. Keep the flower-buds picked off, and pinch out the points of the shoots when they are getting too long. Plunge the pots in ashes in a sunny situation; take indoors at the end of September, and they will bloom in autumn.

2464.—**Training a Plumbago.**—*Brown Eyes.*—All climbers should be kept on the outside of the trellis, as they can then be readily taken down to be cleaned should that be necessary.

2465.—**Frogs in Greenhouse.**—*Brown Eyes.*—Frogs are of little use in a greenhouse for the purpose of killing insects; a toad would be useful. If the floors and stages of the house are dry—which they should not be at this time of the year—a little water should occasionally be poured over the toad through a fine-rosed watering pot. This bath it will enjoy; you can feed it on worms if there are not enough insects in the house for it to live upon, but overfeeding will render it useless.

2466.—**Lettuces Damping off.**—*G. H. M.*—Unless the plants are very close together we cannot understand them damping off. This has been one of the best seasons for Lettuces we have ever known.

2467.—**Lead Water and Plants.**—I have a wooden cistern lined with sheet lead to catch the rain from my greenhouse roof. Will the lead in any way contaminate the water so as to render it unfit for watering the plants?—DOUBTFUL. [No.]

2468.—**Barren Strawberries.**—When examining the Strawberry plants in the spring, how can I tell which are barren ones?—G. H. [Those that do not show flower are the barren ones, of course.]

2469.—**Fly on Currant Trees.**—*S. B.*—Give the trees a good syringing with the following mixture: 4 oz. of Quassia chips boiled in 1 gallon of water for a quarter of an hour; strain through a piece of canvas and add 4 oz. of soft soap. Use when cold. Half-an-hour after syringe with clean soft water.

2470.—**Worms in Flower-pots.**—How can I destroy worms in flower-pots without injuring the plants? I have tried lime-water without success?—G. H. E. [Put a 6-in. flower-pot full of slaked lime into a bucket of water and well mix. Then put the pots which have worms in them gently into the bucket till the water is up to their rims, but do not allow it to run over. If you hold them in this position for a few minutes the worms will come to the top.]

3471.—**Fly on Cucumbers.**—*A. W.*—Fumigate them a few nights in succession, but take care the smoke is not too hot, and do not give it too strong at a time.

2472.—**Spring Flowers for Sale.**—*M. A.*—You should have no difficulty in disposing of early spring flowers in Covent Garden, but unless you can supply them in large quantities, the carriage, &c., would take all the profit.

2473.—**Manure Water for Plants.**—*Brown Eyes.*—Such plants as are pot-bound and flowering freely will be benefited by regular supplies of manure water. It is better to apply it weak and often than to give strong doses at longer intervals.

2474.—**Culture of Rhubarb.**—*R. M.*—Rhubarb of whatever variety succeeds best in deep well-manured land. The plants should have plenty of room to develop themselves. An open situation is the best, but good results may be obtained by planting between fruit trees. Planting may be done at any time after the leaves have died down. Myatt's Victoria is one of the best kinds for general culture.

2475.—**Blue Sweet Pea.**—*C. B.*—Blue is not an uncommon colour in the Sweet Pea, but a real blue like that in the flowers of Lobelias or Salvia patens would be worth careful attention.

2476.—**Thinning Strawberry Leaves.**—*Amateur.*—It would not materially affect the plants to remove a few of the leaves in order to allow the sun to shine on the fruit, but we should think the fruit could be exposed without pulling off the leaves.

2477.—**Insects and Mushrooms.**—*J. B.*—We suppose the insects to be wood-lice. Keep a toad or two in the house; also try a small ridge of soot all round the bed.

2478.—**Planting Roses.**—*A. W. S.*—Dwarf Roses on their own roots might be planted now if obtained in pots, but autumn would be the best time. As regards sorts, if you apply to a good nurseryman he will select for you those which are likely to succeed best in your soil and situation.

2479.—**Removing Asparagus Roots.**—*Shirley.*—Old Asparagus roots seldom succeed well after removal. If you determine to try, do it in early spring; but young plants will pay best, and one-year-old plants might be planted now with success; older plants than these are best removed in spring.

2480.—**Sowing Hardy Perennials.**—*C. J. W.*—Seeds of some of these to yield plants to flower next year should be sown now. Much, however, depends upon what kinds you wish to sow.

2481.—**Plants in Rooms.**—*F. W. P.*—Plants placed on shelves round a room which has only a window in front are sure not to succeed, and those which grow will become drawn. You must either put a glass roof on the room, or be content to have a few plants in the window only.

2482.—**Raspberries Unfruitful.**—*Somerset.*—If your Raspberries are unfuitful every year, you must have got a barren sort, which should be rooted out and replaced by a better kind.

2483.—**Orchids in the Sun.**—Our house is so situate that the sun streams in on our Orchids at about 3 o'clock. Will it hurt them?—KRITES. [The sun will not hurt the plants if it does not shine strongly on them until 3 o'clock in the afternoon and a moist temperature is kept in the house.]

2484.—**Blight on Apple Trees.**—*M. S.*—Syringe the trees well with water in which has been mixed paraffin at the rate of two wine-glasses full to a bucket of water. Mix by drawing the syringe full several times, and ejecting it into the bucket. Repeat this several times during the operation. In a week or so repeat the operation.

2485.—**Fuchsias not Flowering.**—I have several Fuchsias in my house, and to all appearance they are in a very healthy state, and some of them have a good quantity of buds on, but as soon as the buds get to a good size and about to open they fall off. They get the morning sun, plenty of air, well drained, plenty of rain water kept in tubs on purpose, and every three or four days I water them with liquid manure sufficiently diluted with water.—HOROLOGICAL. [Give manure water once a week and try the effect.]

2486.—**Putting in Cuttings of Violas and Pansies.**—*C. J. W.*—From now till the end of August is the best time to put in cuttings of these. Plant them in a bed of sandy soil in a shady situation, making the soil firm. Plant out in September or in spring.

2487.—**Sowing Pansy and Viola Seeds.**—*C. J. W.*—If sown in August and planted out in spring they will flower next year and yield cuttings in the autumn.

2488.—**Damage done to Gardens by Cows.**—*J. R.*—Your neighbour cannot be held liable for damage done to your garden by his cows if the fence they get through is in a bad state and belongs to you. If the fence belongs to him he is liable. If you leave your garden gate open you can hardly expect to keep cows out, even if they were only being driven along the road.

2489.—**Vegetable Marrows Shrivelling.**—*Busy Bee.*—Vegetable Marrows in a frame in the full sun would not be likely to succeed well. Remove the light from the frame, and let the plants have plenty of air. Guano water applied three times a week is too much for plants in a young state. When large and bearing a heavy crop of fruit it would be beneficial. Water with clear water only at present, and this only when the plants need it; then give a thorough soaking.

2490.—**Earthing-up Cabbages.**—*Busy Bee.*—Many good cultivators never earth up their Cabbages, whilst others believe it necessary. Leave one row unearthed and you will be able to judge from experience which way is the best.

2491.—**Cutting Tendrils off Cucumbers.**—*Tender and True.*—The tendrils are just as well pinched off, as they are of no value to a plant that is kept regularly trained.

2492.—**Grubs in Carrots.**—*George Lee.*—The crop is too far advanced now, we fear, to allow of any effectual remedy being applied. You might try soot water. Put half-a-peck of soot in a bag into, say, 10 gallons or so of water. A brick may be tied to the soot bag to sink it. Well stir it about for a day or two, and water the bed with the liquor; 1 lb. of salt added may do some good. Use a watering-pot without a rose, so as not to water the foliage.

2493.—**Training Cucumbers.**—*Telegraph.*—Six feet is too great a distance between the Cucumber bed and the greenhouse roof, but if you train the leading shoot straight up and tie the side shoots to a wire trellis or some stakes, you may get fruit much earlier than by cropping that part of plant only that reaches the trellis under the roof. When fruit shows leave one leaf beyond it, pinching out the growing point.

2494.—**Paraffin and Plants.**—*Novice.*—The water from a cask which has been used for paraffin will produce no ill effects on plants.

2495.—**Increasing Raspberries.**—*X.*—You can increase them by digging up in autumn the young canes which have formed this season.

2496.—**Planting Uncultivated Land.**—*A Working Man.*—If the ground has not been dug up for years and is in a bad state, we would advise you to work it well ready for planting in spring. A deep trenching, and working, and plenty of manure will be necessary, but we cannot tell you further without knowing what kind of soil it is—whether heavy and clayey, or light and sandy.

Red Spider on Apple Trees.—*C. E. S.*—Syringe the trees well every morning and evening for a time and try the effect.

The Shakespeare Gooseberry.—*S. de Jersey.*—The Shakespeare Gooseberry is a similar kind to the one you send, but it has a reddish skin. We will try to ascertain the correct name.

Pansies.—*H. Williams.*—Apply to Messrs. Downie & Laird, Edinburgh; Mr. Laing, Stanstead Nurseries, Forest Hill; Messrs. Dicksons & Co., Waterloo Place, Edinburgh; Mr. Hooper, nurseryman, Bath; or Mr. Dean, Bedfont, Hounslow, Middlesex.

Silkworms.—*G. H. M.*—If you procure a copy of GARDENING for November 15 of last year you will find an illustrated article on the subject.

Blight on Apple Trees.—*T. G.*—Well syringe the tree with water in which has been well mixed paraffin at the rate of two wine-glasses to the gallon.

Green Fly on Celery.—See answer to "S. B."—Fly on Currant trees,

Orchard.—Shaw's "London Market Gardens," price 2s. 9d., post free from our office.

Names of Plants.—*H. R. T.*—1, Asplenium alatum; 2, Asplenium Filix-Fœmina; 3, Onychium japonicum.——*H. C.*—1, Delphinium cashmerianum; 2, Campanula rotundifolia; 3, Campanula Rhombodia.——*G. G. K.*—1, Geranium sanguineum; 2, cannot name without flowers; 3, Veronica longifolia.——*Rev. L. A. B.*—Genista tinctoria flore-pleno.——*Mrs. S. Hartland.*—Geranium macrorhizum.——*Samuel Knight.*—Apparently the Winter Cherry (Physalis Alkekengi).——*Selby.*—1, the Day Lily (Hemerocallis flava); 2, Weigela rosea; 3, Solanum jasminoides.——*J. L.*—1, Origanum vulgare aureum; 2, Euonymus radicans variegatus; 3, Euonymus radicans aureus variegatus.——*T. G. L.*—The old York and Lancaster Roses; very beautiful.——*G. H. M.*—A variety of the Monkey Flower (Mimulus).——*W. G.*—Begonia nitida coccinea.——*R. C. S.*—Diplacus glutinosus.——*Pink.*—It is a variety of the Garden Pink, and a very good one we think. We cannot name it.

QUERIES.

2497.—**Fungus on Lawns.**—Will any one tell me the best means of destroying the fungus on my lawn? I have pulled up the Toadstools carefully by the roots, but they return, and the "fairy-rings" remain and spoil the Grass. I live near the sea, and the soil is sandy.—C. L.

2498.—**Buddlea globosa.**—How is this propagated?—ROBIN.

2499.—**Propagating Syringas.**—When is the best time to propagate these shrubs? and which is the best way?—ROBIN.

2500.—**Flowers for Button-hole.**—Being very partial to button-holes, and having a small greenhouse what flowers can be easily grown suitable for making them, leaving Roses out of the uestion?—F. W. W.

2501.—**Roses not Blooming.**—I have a Maréchal Niel and Cheshunt Hybrid Rose two years old, planted in a conservatory, S.E., heated in the winter, but the Roses, though growing, leaves healthy, have not flowered. I have given liquid manure. What is the cause? The leaves show mildew, yet the house is kept open.—C. C.O.

2502.—**Drying Herbs.**—I shall be glad to know a practical method of drying and pressing herbs like those to be purchased in Covent Garden Market.—NUMBER SIX.

2503.—**Seedling Pomegranates.**—How should I treat these after they have been a month above the ground?—B. C.

2504.—**Cottage Flower Shows.**—Will "Yorkshireman in Cumberland" kindly give me further information on this subject, as he promised in GARDENING, May 15?—A. F.

2505.—**Beta Cicla brasiliensis.**—Can any one tell me the best way to cultivate this plant for winter decoration?—T.

2506.—**Drying Aquatic Plants.**—How can I dry aquatic plants? I have failed completely in trying to dry Hottonia palustris, at least the leaves of it. As soon as I take it out of water the leaves cling and I cannot separate them.—MISS S.

2507.—**Plants for a Fern Case.**—I have a Fern case the Ferns in which do not get on at all. What other plants will do in it in pots?—TRIANGLE.

2508.—**To Make Putty.**—Will any reader inform me the proper proportions of oil and whitening to make putty for a garden frame. I have used colza oil with whitening, but after a few weeks it all crumbled away. Is this the proper oil? and should any other ingredient be used?—RECTOR.

2509.—**Hoya carnosa.**—Will any reader kindly give me treatment for above? I have just purchased one which seems to be potbound. Shall I repot it now?—OMICRON.

2510.—**Arbutus.**—Will any reader inform me what soil suits this best. I planted one two years ago in my garden, but this year it has nearly died. Can I cut all the dead part away?—OMICRON.

2511.—**Aspects for Hardy Flowers.**—I am about taking a house with the usual stereotyped suburban back garden. It is the width of the house, with a low wall all round, and under this wall runs a bed about 3 ft. wide, then a walk; the centre of the garden is a Grass plot, in which beds can be cut. These three walls and the house give every variety of aspect, the centre being most exposed to air and sun. I only intend growing hardy flowers, but want to do the best I can with them. Will some skilled gardener say what aspect will best suit each of the following flowers: whether south, east, west, or north, or centre:—Pinks, Carnations, Roses, Fuchsias, Auriculas, Phloxes, Primroses, Polyanthus, Hepaticas, Cyclamen, Christmas Roses, Pansies, Sweet Williams, Delphiniums?—AILENROC.

2512.—**Anthericum variegatum.**—Will some one tell me how to grow this plant?—S. S. T.

2513.—**Renovating a Garden.**—I have a suburban garden that has been used as a poultry run; a large quantity of coal-ashes have been strewed over it and dug into it; it seems to be about half soil and half ashes; it will easily crumble, but is not rich or mellow. Some plants and flowers seem sickly in it. What would be the best thing to add to it or do to it during the autumn or winter months, so as to bring it into good condition for next spring?—T. J. S.

2514.—**Ants and Strawberries.**—We have in our garden a fine bed of Strawberries which never fail to supply an abundance of fruit. This year I see the ants are making sad havoc among them, actually scooping out fine ripe fruit. Will any one kindly help me to get rid of them?—ANT.

2515.—**Management of a Room Fernery.**—I should be glad of any information as to the best way of managing a small glass Fernery in my drawing-room? Should it be kept perfectly air-tight and well watered, or not? Mine does not flourish the Ferns either have the green fly, or else become mouldy.—ANNIE.

2516.—**Evergreen for Covering Fence.**—Will any one tell me of a quick growing evergreen climber to hide an ugly fence, 9 ft. high, aspect N.W.? At present it is partly covered with Ivy, which, however, does not do well, as it requires nailing and does not grow thickly, as on a wall, always looking untidy. I must have evergreens, as I have no difficulty in hiding it in summer; but in winter, when there is nothing else to catch the eye, it is very obtrusive.—APIS.

2517.—**Wireworms in Gardens.**—Our garden is completely overrun with wireworms. They have this year destroyed our Runner Beans, Potatoes, Cabbages, and Peas. Could some reader propose a remedy?—TYKE.

2518.—**Plants for Exposed Beds.**—Can any one suggest a plan for filling beds in an exposed situation where flowers do not do well? Would shrubs look well? The soil is limestone, so that Rhododendrons will not grow. Would Cotoneasters make a good bed?—EINNA.

2519.—**Pruning Currant and Gooseberry Trees.**—My Currant and Gooseberry bushes have made much new wood, some branches 18 in. long. Should I cut it back?—W. PROCKTER.

2520.—**Christmas Roses in Pots.**—I should like to know the treatment the Christmas Rose in a large pot requires? I want it as a greenhouse plant.—W. PROCKTER.

2521.—**Nertera depressa.**—Can any one give me proper directions for the culture of Nertera depressa? I have tried it in many different ways, but find it turns black, and now I have only a few berries on my plant, and they are not looking well.—S. DE JERSEY.

2522.—**Book on Painting Flowers in Oil.**—Can any one tell me of an instructive book on this subject?—MONTE CRISTO.

2523.—**Rose Tree Dying.**—Will any one tell me why a climbing Rose tree should suddenly begin to die, one branch after another? The only thing I observe about the plant is a scar like a burn near the bottom of the stem.—HAREWOOD.

2524.—**Geraniums not Blooming.**—Why do my Geraniums not flower freely? They are planted out in beds, some in shade and some in sunshine; some I keep in the greenhouse, and others stand out in their pots; but none ever produce more than one or two blossoms at a time. What can I do to make them bloom?—A. C. D. P.

2525.—**Fern Fronds Withering.**—I have a Polypodium phigopteris in pot kept in room, no gas, not exposed to sun, and regularly and well watered. It throws up new fronds abundantly, but they wither before arriving at maturity. What can be the cause?—H. S. G.

2526.—**Abobra viridiflora,** Canarina campanulata, and Medeola asparagoides.—How can I grow these? The plants were procured from Holland three years ago; they grow for a while, then dwindle away, and never flower.—W.

2527.—**Cape Gooseberries.**—Can any one give me any information on growing Cape Gooseberries, as I have some plants about 6 in. high in 3-in. pots standing on a shelf in a Cucumber house?—A. B. C.

2528.—**Insects and Mignonette.**—Mignonette being a great favourite of mine, I sowed a quantity of it this year, and with an amount of pleasure watched its rapid progress. Business called me from home for a few days; when I returned the greater portion of my Mignonette was withered to the ground. On pulling up some of the plants I discovered a little lump on each root, which lump I carefully examined. Inside was located a tiny insect of a whitish-brown colour, resembling a small spider. Can any one tell me how to destroy the insect, and preserve the Mignonette which remains?—DICK.

2529.—**Grapes not Progressing.**—On one Vine there are about half-a-dozen bunches of Grapes, which during the last three weeks have made no perceptible progress whatever. They are hardly larger than a pin's head now, and they were just as large three weeks ago. Can any one tell me the reason and give me some instruction? There are three Vines, and the bunches are forming beautifully on the middle Vine. Ought fire to be kept when we have no sun heat?—RHOS.

2530.—**Climbers for Cottages.**—What would be the best sort of climber for the front wall of a cottage facing the south? I think a climbing Rose or Clematis would look well, but would like the opinion of some one who has had experience in the cultivation of climbing plants.—R. M.

2531.—**Propagating Sweet Briers.**—I have a Sweet Brier tree, and am wishful to have some young ones. Will any one give necessary instructions?—W. J.

2532.—**Blight on Ferns.**—Will any one tell me the best way to destroy blight in a little window conservatory? The Ferns grow well and look healthy, but the young fronds get the usual small green blight, and also a minute insect like a thread of white cotton, which I never remember seeing before, and at first could not believe was an insect at all. Will it injure the Ferns to water with any preparation?—A. B. C.

2533.—**Keeping Roses Fresh.**—Is there any way of keeping Roses in a cut state fresh for any length of time?—C. E. S.

THE HOUSEHOLD.

Our readers will oblige us by contributing for this department useful receipts which they have tried and found good. Our desire is to make known all good and simple ways for cooking, or otherwise serving or utilising the various products of the garden and orchard.

GOOD VEGETABLE SOUP.

THERE is an important distinction, recognised chiefly on the Continent, and related to the demands of religious observance, between soups which have meat for their basis *(potage gras)* and those which have fish or exclusively vegetable bases *(potage maigre)*; into the latter class also eggs are admitted. They are referred to separately here in order to draw attention to a fact not generally recognised in this country, that excellent soups may be made without employing meat. Vegetable soups, clear and thick, are extremely palatable, the former being agreeable and wholesome, especially in the warm season when fresh vegetable growth is abundant and full of juice and fragrance; and the latter or thick soup may be very nutritious also, since they contain a considerable quantity of Barley, Peas, Beans, Haricots, Indian Corn, Rice, &c. I append the following as an example of a good *consommé* made from vegetables only, and therefore *maigre;* if well done it is very fragrant and agreeable in warm weather.

Consomme of Fresh Vegetable Roots.—Cut in slices 2¼ lb. of Carrots and the same weight of Onions; put them in a stewpan with some Parsley, Thyme, Shallot, and Celery, and also 1 lb. 2 oz. of butter; fry gently to a red colour, add 8¾ pints of water, let it boil, and skim it. Next put into it 1¾ pints of Peas and a couple of Lettuces; then add 1¼ oz. of salt, ⅓ oz. of whole Pepper, one pinch of Nutmeg, three Cloves, 1¾ pint of dried Peas, 1¾ pint of white Haricots; let it simmer for three hours at the side of the fire, skim off the grease, and strain through a cloth; then put aside for use. This *consommé* may form the basis of spring soup, *jullienne, brunoise, aux œufs pochés, crécy,* &c., fresh vegetables being added in each case as required in the ordinary way.—*Food and Feeding.*

POULTRY.

Fowls Making Strange Noises.—I have a black Spanish fowl which about every five minutes makes a strange cawing noise. Will any one tell me if there is any cure for it? she eats and lays well, and has the run of a large meadow.—CONSTANT READER.

Brahma Fowls.—Will any one be kind enough to tell me the real colour of the Brahma fowl?—J. T. L.

Fowls Going Blind.—Can any one tell me how to remedy (if there be any) the above? My fowls are almost pure Spanish, but there is a little of the Dorking in them. I am told it is not an uncommon thing for them to go blind whilst moulting, although I never saw such a thing occur before, which to me is rather singular, having always kept poultry.—C. S.

Eggs Hatched in Dog Days.—In this part (Wilts) it is said that chickens from eggs hatched in dog days never thrive, always having something the matter with them. Can any reader tell me if this is true, or only a superstition?—J. L.

Poultry Keeping in Rooms.—I have two rooms over a workshop about 18 ft. by 9 ft., facing east, with small windows north and south, partly boarded, the other part brick. I should like to know if I could keep fowls in them? if so, how many in each room? If it would answer, I should like to take the roof off the top room, so that it was quite open, with the exception of a small place for them to roost in. What cheap covering could I use for the floor, so that the wet could not get through?—PISCATOR.

Hens Hatching Turkey Eggs.—In answer to your correspondent in respect to hens hatching turkey eggs, I beg to say I have hatched them under Brahma and Cochin hens. I pick out the thickly-feathered birds and about two years old; in fact, the hens (Brahmas and Cochins) bring turkeys up better than the turkeys.—ROBT. BIGGENDEN.

Pullets Laying Early.—I have always thought that young pullets commence to lay when about eight months old. I had a setting of Crève cœurs hatched on March 7, and two of the pullets laid their first egg on June 19, being only a little more than three months old. Is this not very extraordinary? or is it a characteristic of this breed?

Nests for Sitting Hens.—I have got thirty-five chicks hatched by three hens since March 16. The nests were made in old tea-chests placed on the ground with some soil made hollow in the middle and a little hay placed on it. All did well, and are strong and growing rapidly.—MABOR.

Globe Mowing Machine.—A new mowing machine under this name is now being brought out by Messrs. Ransome and Co., Ipswich. Its speciality is that it will cut long rough Grass as well as closely shave the finest turf. We had an opportunity of testing it lately, and it performs perfectly all that is claimed for it. It cuts evenly and well without ribbing or tearing the Grass. Where lawns can only be mown occasionally this machine will be found of great value, whilst it is equal to, if not better than Ransome's well-known Automaton for use on a well-kept lawn. The knives are made of steel and wrought iron of great thickness, and are not so liable to breakage as in the case of steel knives screwed on to a cast-iron barrel. A 14-in. machine can be worked by a man, whilst a boy could work a 10-in. machine easily. Every part of the machine is adjustable, and it can be fitted with one handle like the American machines, or with two handles like the Automaton. It can be used with or without a collecting box, and altogether it appears to be a machine likely to be used largely when it becomes known. We may add that the wheel guards are so constructed that the Grass cannot clog the wheels, and they can be removed without interfering with any other part of the machine.

Catalogues of Pelargoniums.—I am endeavouring as far as possible to make a complete list of all the zonal Pelargoniums now in cultivation. Allow me through the medium of your columns to ask all nurserymen who feel disposed to assist me to send me their catalogues as soon as possible.—C. C. EWBANK, *Langford Vicarage, Biggleswade.*

A French Way of Killing Slugs.—The Paris *Figaro* gives the following advice to gardeners:—Do not waste your Orange peel, but make an incision round it midway and remove carefully in two halves; take the two cups and place them, hollow downwards, one on the Grass and the other among the plants or vegetables; at the end of a few days you may be rid of all slugs, black or green. Every morning you will find they have taken refuge under the two cups of Orange peel, and can be easily destroyed.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 6s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb. 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 2s to 3s; Strawberries per lb, 9d to 2s; Gooseberries per qt, 3d to 6d.

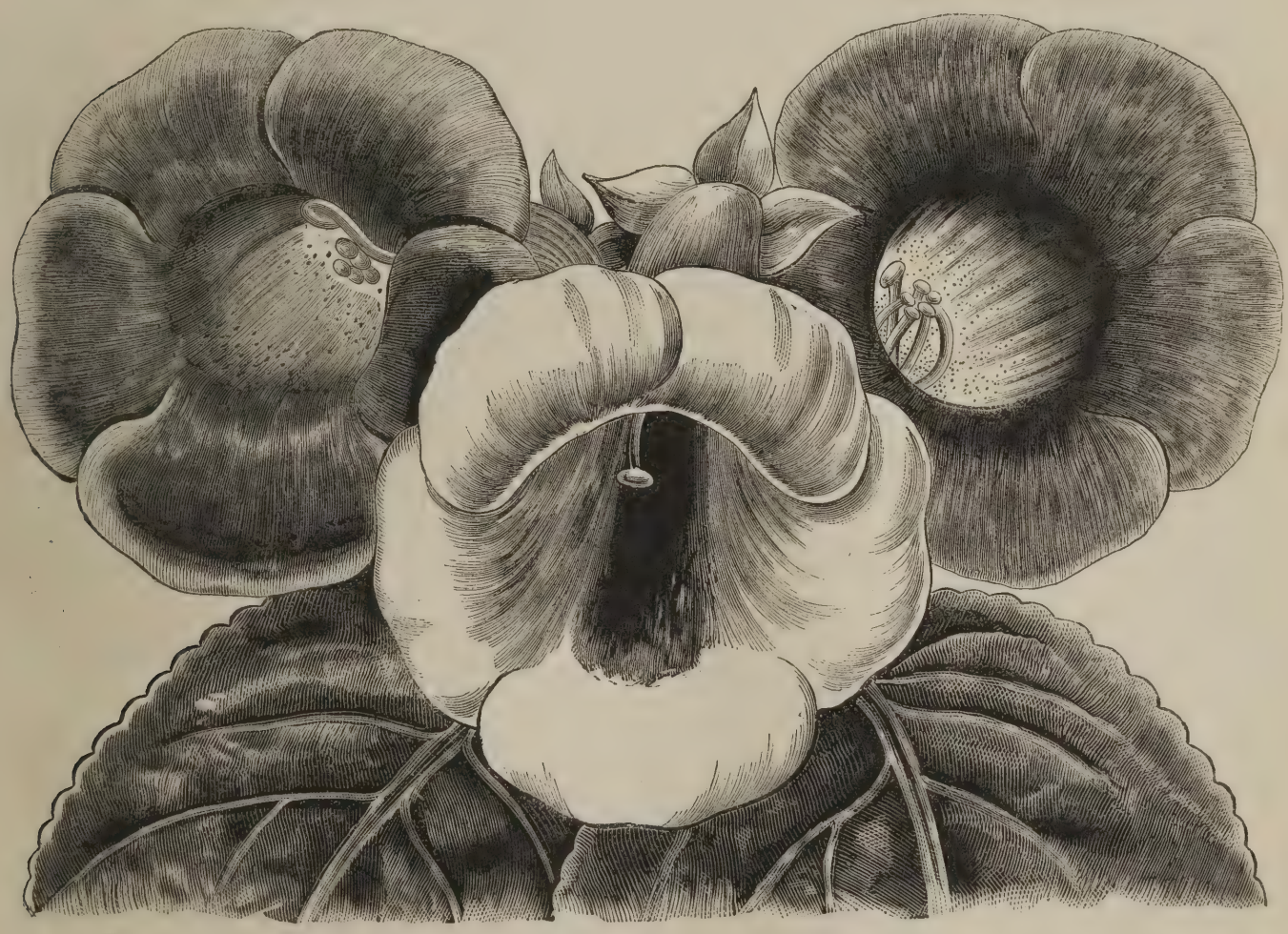
Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 6d to 8d; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 4s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard, or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 6d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 1d to 3d. Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

VOL. II.—No. 71. *SATURDAY, JULY* 17, 1880. PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

GLOXINIAS.

A SHORT time ago we received a box of cut blooms of Gloxinias from Messrs. Sutton & Sons, of Reading, which were, we think, the largest we ever saw. They were varied in colour, some being pure white, others embracing all shades of crimson, purple, and blue. These were the results of seed saved from time to time from the best hybridised flowers only. The leaves sent with the flowers, too, showed the vigorous habit of the plants, and the good culture they had been subjected to. In regard to culture, Messrs. Sutton remark: "These may be had in bloom almost all the year by judicious management. As cut blooms in the early spring, we know of nothing that has a more beautiful effect in vases, &c. When required for early blooming, those that 'start' first should be selected and carefully shifted on into other pots, and be kept near the glass, as they depend much on light for a rapid and luxuriant growth. A moist atmosphere, with the temperature about 60° to 65°, greatly facilitates the growth of Gloxinias, but they may be grown well in either greenhouses or pits (heated by hot water or manure). The soil most suited to Gloxinias is a light compost of fibrous loam and a little peat and silver sand, and a careful watering with manure water during the growing period twice a week, and when flowering once a week, is very useful. The plants love shade, and at no time should suffer from drought. Storing Gloxinias for their season of rest (that is, in winter) must be carefully attended to, as losses frequently occur during this stage. It is also important that the plants should not be 'dried off' too quickly, but let them rather be placed in a light, airy position, and then by a gradual reduction of moisture the leaves will fall off naturally. The plants or bulbs may then be stored away on a shelf in the shed, in an even temperature of about 50°, each bulb being closely surrounded by Cocoa-nut fibre and peat in equal parts to prevent excessive dryness, which, like too much damp, often causes the loss of the bulb. Besides growing on the same plants from year to year, it is always desirable to have a fresh stock coming on, as the old bulbs may deteriorate after two or three years. This can easily be managed by successive sowings of seed. The seedlings rapidly form strong healthy plants, and from sowings in February and March flowering bulbs will be obtained in July, August, and September, and by sowing again in July there will be young plants to flower early the following spring. One great advantage to be obtained from seedlings is an almost endless variety of colour, for the careful hybridisation of the choicest flowers not only secures the reproduction of those colours, but other fine shades also. At the same time those who prefer to propagate their own bulbs can do so by leaf-cuttings; but except where it is desirable to



GLOXINIAS (LIFE SIZE).

perpetuate any one particular shade of colour, the raising of seedlings is much to be preferred."

VEGETABLES.

CULTURE OF CAULIFLOWERS.

IN the Midland and Northern Counties Cauliflowers cannot be relied upon to stand the winter without some protection. Of course there is nothing so good as glass in some shape, and although I hope to see the time when every cottage gardener who really loves his garden may have his frame or turf-pit, yet at the present time such aids to cultivation are not generally found; but by sowing and planting the early crop in the warmest positions, by frequently adding dry ashes to the young plants to prevent damp settling round the stems, and at the approach of cold, frosty weather applying some thin shelter that will protect without weakening, Cauliflowers may easily be wintered. A few evergreen branches staked amongst the plants, or laid over them without touching them, will generally be sufficient; fronds of Bracken will answer even better, or a few dry leaves scattered amongst them will also be effective. Simple contrivances are often more serviceable if put on and removed at the right time than more elaborate protection thoughtlessly used; it should always be borne in mind that protection, except in the most severe weather, is neither necessary nor desirable. By adopting the means I have just recommended there is nothing to prevent the humblest cottager having his Cauliflowers ready in June, and a man of limited means within reach of a town will find this a very paying crop to grow.

Sowing.—Sow from the middle to the end of August, according to situation and season. There is nothing gained by sowing too early, especially where only one sowing is made, on account of the tendency of the early-sown plants to bolt prematurely. It has generally been the custom to recommend such plants to be pricked out at the foot of a south wall to stand the winter on account of the warmth and shelter afforded, but I very much doubt the wisdom of such a proceeding, unless the plants can be shaded from bright sunshine during severe weather, otherwise the extremes of temperature will cause more losses than if the plants had been wintered in some open, fully-exposed situation sheltered in the way I have suggested. The same objections do not apply with so much force to the south side of a hedge, as the constant circulation of air prevents in a great measure any ill effects arising from bright sunshine when followed by frosty nights. After all danger from severe frosts is past, the foot of a south wall is a most desirable situation in which to plant the earliest patch, as they will be free from that alternate thawing and freezing to which they would be exposed in such a position in winter. The Early London is a good kind to sow for early work, and if at the same time just a pinch of the Walcheren and Veitch's Autumn Giant be sown, a succession may be secured without much further trouble.

Planting.—When the young plants are large enough to handle prick them out into some dry, warm bed, bearing in mind the hints just given about the destruction often caused by alternations of frost and thaw during severe weather without the true cause being always suspected. Give them sufficient space, in order that they may form vigorous young plants; not less than 3 in. apart will be necessary, and even more if it can be spared. About the end of March plant them out finally on land that has been thrown up roughly and well pulverised during winter. Draw rather deep drills 2 ft. apart, and plant in the bottom of the drills 18 in. apart. Inexperienced planters often make a mistake in not fastening the plants firmly in the soil, especially where a dibble is used, but in moving any that have been pricked out a trowel is the proper implement to use; but, whether planting with a trowel or dibble, the plants should be fixed in their positions with a moderate degree of firmness, somewhat resembling those they previously occupied. Where this operation is not attended to the plants are a long time before they make a fresh start, and of course valuable time is thereby lost, and some of the plants not unfrequently perish.

After Culture.—The other culture consists in frequently stirring the soil during the early season, drawing a little earth up to the stems each time; liquid manure, if it can be obtained, will pay well for any labour or trouble incurred, and on dry, porous soils, mulching will be very beneficial. For late summer and autumn use sow a pinch of the Walcheren and Autumn Giant about the middle of April and again in the middle of May. These sowings may be planted out direct from the seed-bed whenever and wherever vacant land in good condition can be spared. Usually an open position is the best, but during hot summers, if a cool partially-shaded spot be available, it will be very useful, not only for Cauliflower, but for many other plants. Those who have a frame or a turf pit (the latter especially is a very cheap and useful structure, which will be referred to more fully hereafter) may delay the sowing till September 1, and sow in the pit either in a box or boxes. In such a position the seeds will vegetate with certainty without any danger of the buds destroying the young plants as they come up. Where there is a turf pit, there is no better way of managing young Cauliflower plants in winter than putting them into 3-in. pots when large enough to take from the seed-bed or box, plunging the pots into sawdust or anything similar that will keep the roots moist and comfortable, fitting them as close to the glass as possible without absolutely touching it, ventilating abundantly when the weather is favourable. Any one who has noted how such plants start away when planted out in March or April will not begrudge the little extra labour involved by such operation. Young plants with plenty of healthy roots may be moved without receiving any check, whilst plants pricked out close together in the ordinary way, no matter how carefully moved and planted, must lose a great number of their best roots. I may just mention now that in the early stages of growth soot or lime may be dusted over them occasionally to keep slugs at a distance; and this refers equally to all the other members of the Brassica family. Birds are very partial to their seeds, and wherever the feathered tribes are plentiful some means must be adopted to protect the seeds from their ravages. There is nothing better or cheaper in the long run than covering with old fishing-nets, raised a few inches from the ground on sticks. Cotton or thread crossed and re-crossed over the bed will often scare them for a sufficient time to enable the young plants to get out of their reach. H.

Early Autumn-planted Potatoes.—We planted Ash-leaved Kidneys under a south wall last October (for I like autumn planting), and I have been digging up a good crop, while spring-planted ones were not bigger than Hazel nuts. This shows the advantage of autumn over spring planting for getting new Potatoes fine and early, and although we had a long wet winter and severe frost not one set missed coming up, and yet autumn planting is one of those things that people read of but are afraid to practise. It will be quite the middle of July before spring-planted ones are ready, and that invaluable of sorts, the Beauty of Hebron, will be ready to dig as soon as the Ash-leaved kind. It can be taken up and housed as soon as the Ash-leaved.—G. B., *Shropshire.*

Heartwell Early Marrow Cabbage.—I find this to be a very excellent Cabbage either for early or main crops. We sowed seed of it the third week in July, and put out the plants the second week in September on a well-sheltered piece of ground from which a crop of Onions had just been cleared. We did not dig the ground, but deep drills were drawn in which to plant. Nevertheless, the severity of the winter cut the plants up severely; but as soon as they commenced to grow in spring we loosened the soil between the rows with steel forks, and after a few days earthed them up a little. Under this treatment we cut nice little hearted Cabbages in the end of April; and in the case of each of the first cut ones the stalks have now from four to six little heads on them fit for cutting. Those that promised to make the largest heads were left, and, in spite of continuous drought, they are now very fine Cabbages. I would advise any one who wishes to have good Cabbages for the main crop next year to procure seed of this variety at once. Select an open piece of ground, and sow it thinly in drills, 6 in. apart, about the 20th of July. Keep the soil moist and free from weeds, so that the plants may be dwarf and sturdy; and plant out about the middle of September, so that the plants may get well rooted before winter sets in. I think premature running to seed is oftener caused by checks to growth, such as arise from crowding in the seed bed, than from any other cause. We grow Early York and Atkins' Matchless, for the earliest cutting Early London and Heartwell Marrow, and they are all that can be desired. Any loss by cutting the heads before they attain full growth is fully made up by the second crop of Sprouts, which for supplying a daily demand for vegetables are even more useful than the first crop.—J. G., *Maidstone.*

Sawdust in Gardens.—As one of the correspondents who under the above heading answered the query of "Ferndale" on September 13, 1879, the soundness of such answer "Ferndale" in last week's number, and after a lapse of ten months, calls into question, I will review the whole subject in case any reader who may not have had the previous correspondence under his notice be misled into using a material which is (by itself) useless for lightening clayey soil. On August 30, 1879, query 556, "Ferndale" asks, "Can any reader inform me whether sawdust will assist in lightening clayey soil?" to which I replied, September 13, 1879, answer 556, "Charred sawdust, intermixed with wood ashes, rotten manure, and road scrapings, will greatly assist." "Ferndale" next writes on the subject on July 3, 1880 (p. 209), to say that he procured several sacks, which he shook thickly all over the ground. Then note what follows: He applied "more manure, more ashes, about a bushel of soot, a quantity of salt and fresh-slaked lime worked over several times." After admitting the use of so many ingredients, "Ferndale" sums up by (as I view the matter) giving the sawdust full credit of enriching the soil. Now, I most emphatically maintain from practical experience, as also on the advice of the head gardener of a large estate, better throw your sawdust on the dust-heap than on a garden, the soil of which is clay, for the effect is that the sawdust holds moisture to such an extent as to render matters worse, and in making this assertion I allude to the question of the use of sawdust by itself, and do not embrace a dozen other things therewith, and I am sure all practical gardeners will bear out what I say. I therefore think that "Ferndale" does not act fairly towards those (myself included) who, after giving him the advice he solicited, writes and disputes the soundness thereof, simply on the ground that he used sawdust mixed with a heap of other things. Let him try fairly the use of this article in the manner in which he originally asked the question—by mixing a barrow-load of clay and one of sawdust together in a corner of his garden, turn it over every day if he likes, and if in twelve months' time he can write and say that he has made rich soil of this he will then, and not till then, convince—SOLICITOR'S CLERK.

Sending Plants by Post.—Your correspondent "E. Gill," writing with reference to the sending of plants by post, and their stoppage on account of their being likely to damage the contents of the mail bags, will find the plan of using a tin tube, which can be again wrapped in paper and the enclosures being kept safe by sealing the ends, to answer the requirements of the Post Office, and be the most efficient protection for young plants or Ferns that can be adopted. I recently received from the midland counties some seedling Primulas sent in the manner I have described, and they came to hand in capital condition. Whilst writing on this subject I would desire to call the attention of readers who forward flowers through the post to their friends to the very objectionable though common method of enclosing flowers in card-board boxes such as are used by drapers, the effect being to cause their ruin and bring disappointment rather than pleasure to their recipients. The senders of flowers, desirous of keeping their specimens in good con-

dition, surround them with moisture, either in the way of Moss or leaves, the effect being to not only dissolve the adhesive matter which was used in the manufacture of the cardboard box, but to cause it in very many cases to entirely collapse. This cannot be otherwise, and will readily appear if your readers will only think of the numerous and various kinds of parcels conveyed by the Post Office, and which are heaped one on another into mail bags. Flowers may be sent in the best condition in small wicker baskets or tin boxes such as are sold with biscuits. The cost is nominal, and the pleasure of feeling that our cherished blossoms have reached our friends safely will counterbalance any extra cost.—Postal. [We quite agree with our correspondent's remarks. We have much experience of bad packing. Our readers who send us plants to name often pack them in the most slovenly manner possible, and when they reach us they are smashed to pieces.—Ed.]

ROSES.

OLD AND NEW ROSES.

Some few years ago an argument went through the gardening papers as to whether the old-fashioned cluster Roses or the newer Tea climbers were the more beautiful and effective. My blush climbing Rose began to bloom this year about Midsummer day; so did my Gloire de Dijon. The cluster has gone on bearing hundreds of blossoms; the very dark calyx and lovely pink buds are perfection. There are quite a hundred and fifty Roses varying from deep pink to pale rose and white on the bush now, and quantities more to come. The Gloire de Dijon was also splendid, but the blossoms are quite over now; plenty of buds coming, but there have been no flowers for some days. I put a flower from off each bush in a specimen glass together, and they were equally beautiful. Therefore I think every one should grow both the old sorts and the new. The common white, with its lovely buds and delicious perfume, is running all over a wall and blooming very freely. My China Roses are not doing much; they do not like the east aspect, I fancy. This year, when the rarer Roses are very late or failures, the old-fashioned climbers are the more acceptable. In some years my Céline Forestier bears numerous clusters of lovely large lemon blossoms and exquisite deep red buds. This year I do not yet see a single bud; I shall, therefore, plant a cluster Rose by its side this autumn. Mark.

Treatment of Budded Roses.—Under favourable circumstances, a bud generally gets firmly united in about five or six weeks, and if the growth beyond the bud is not cut in the bud generally remains in a dormant condition. Some few buds it is impossible to keep in a dormant state—they will start into growth whether you wish it or not. In this case, when the bud has grown a few inches, it is better to reduce any wild growth from the Brier at once and try to make as much wood as you can from the pushing bud. Some buds grow and only make a few inches of weakly unripe wood; these are in great danger of being killed in winter. The best way is to nip out the top in the autumn as soon as it has grown about 6 in. This will cause the sap to concentrate about the rings of the bark, and in the ensuing spring it will throw out side-shoots for the formation of a head. It is always best to keep the buds in a dormant state, and this can only be managed by allowing as much wild growth as possible to remain on the Brier until the sap goes down about the end of October or November. About the 20th of November, not earlier, all the wild growth of the Brier may be cut away, leaving only about 6 in. of wood beyond the bud; all side branches may be cut in close. This winter-pruning of budded Briers is necessary, otherwise any weight of snow lodging on the wild growth would break down the shoot and destroy the bud. Budded Briers are very liable to accident from wind, and often break at the place where the cross-cut was made when the bud was inserted. In consequence of having had so many accidents from this cause I have long since discontinued making the cross-cut. I now only make the long incision, and insert the bud with a piece of flat ivory filed down to a bluntish point, like a very flat lead pencil. Such an instrument can be easily made from the broken handle of an old razor. Since I adopted this plan I have never had an accident from the Brier shoot breaking near the bud. About the end of March all the budded Briers must undergo the operation of pruning; the portion of wood left in November, when all the wild spray was cut away, must now be entirely removed, except one bud just above the inserted bud; this one wild bud must be left on the shoot which was worked, and this is called the sap bud, its office being to draw the sap upward, and help the pushing of the inserted bud. When the sap begins to flow freely, it is directed to the one wild bud, which hastens the completion of the union where the incision was made, and the inserted bud, which has remained so long in a dormant state, breaks strongly, and soon commences to grow in earnest. If no sap-bud was left, the inserted bud might not start so readily, and the stock, in order to get rid of its sap, would commence throwing out side-shoots and suckers from the root. When the bud does not start into growth after receiving the pruning and treatment above stated, it is a sure sign that some growth is going on under ground—probably a strong sucker or two are starting from the Brier root. If anything of this sort is suspected, get the garden fork and loosen the soil a little, when you will probably find the enemy, which must be promptly removed; all side-shoots proceeding from the stock must also be removed. When the Rose has grown 3 in. or 4 in., a stick about 2 ft. long must be tied to the Brier in two places, and it must stand well up above the growing bud; to this support the Rose must be tied, as the growth proceeds, with worsted, which is better than bast, as it does not rot in winter, and allow the snow to weigh down and break the yet tender growth of the Rose. Occasionally we find a bud very obstinate, not starting into growth in the spring; sometimes it will start at midsummer, and I have seen a few cases every year where the bud actually refuses to commence growing until the following year; but these cases are exceptional. It is, therefore, unwise to cut away the sap-bud until after midsummer; but the points of the shoots may be nipped out occasionally, by way of coaxing the inserted bud into growth. Watch the stocks closely until midsummer, and rub away any wild growth that the Brier may make as fast as it appears, in order that the full flow of sap may be directed to the growing Rose. When the bud has grown 6 in. nip out the top, and side-branches will be thrown out, and a head soon formed which will bloom in autumn.—H. T.

Window Ornaments.—I was short of flower-pots one day, so, seeing a small drain-pipe lying in the potting shed, the idea of converting it into a flower-pot of some kind entered my head. I first knocked a round hole in the centre of the pipe, and took two rather stalky Geraniums, and inserted one in each end, so that their roots would not be far from the centre hole, which hole I made for the purpose of watering the plants. I then filled in with earth, putting a half-moon shaped piece of virgin cork into the ends to keep the water from running out too much; then I planted some Nasturtium seeds in the centre hole, and ran a piece of wire through to hang the pot up by. I have made several others; some have Sweet Peas and creeping plants hanging from them, which look pretty and are much admired.—H. S. S.

Camphor for Killing Slugs.—A short time ago I placed some powdered camphor in a Melon frame to destroy some ants, and on examining the frame on the following morning I found several large slugs in a dying condition; this induced me to try the camphor in other places where the slugs had been troublesome, and I have invariably found the experiment successful.—James Simmonds.

An Easily-made Fumigator.—Having a small greenhouse which was infested with green fly, especially the Roses, and not having a fumigator, I constructed one which answered well. I got 1 ft. of india-rubber tubing; to one end I attached a clay pipe, so that the head fitted exactly inside the tube; to the other end I fixed a mouthpiece made of wood, which also fits inside the tube. That being completed, I light the pipe and blow through the mouthpiece, which sends a continual volume of smoke on the plants desired to be fumigated. I find this works admirably well on specimen plants.—E. H. McM.

TROPÆOLUMS AND DATURAS.

There are few plants more peculiar in their requirements and capricious in their likings than Tropæolum speciosum. In some places, especially in the northern parts of this island, it grows with great freedom, demanding but little care at the hands of the grower, whilst in many localities the greatest amount of care and attention will not induce it to make anything like satisfactory progress. In many cases, however, growers have only their own impatience to blame; for this plant, unlike the generality of climbers, cannot be pushed along into growth at a rapid rate. As a rule, even when in the enjoyment of the most favourable conditions, it requires to be established at least three years before it shows signs of attaining luxuriance. Then it will suddenly rush away into growth in a manner that will at once surprise and delight the grower. At the present time, when so many free-growing flowering plants are at the disposal of the horticulturist, this waiting for effect cannot be endured, the consequence being that one of the most beautiful ornaments of our gardens is seldom seen in anything like good condition. The situation chosen for this handsome creeper should be partially shaded, and where a certain amount of atmospheric moisture prevails during the hot summer months. The soil should be free, deep, and tolerably rich—a good compost, consisting of half loam and peat with the addition of a little leaf-mould. Some recommend the admixture of well rotted manure. I would not, however, counsel the employment of any strong manurial agent, preferring to use a soil which might err on the side of lightness and poverty, but in which the roots might be depended on to remain in good condition. The great point is to secure a vigorous root action, any deficiency in the way of nutriment being easily supplied by means of liberal top-dressings. Plant the tubers some 6 in. deep in the soil and await the result patiently. As soon as growth appears above ground place some twigs for the shoots to ramble on. As before stated, the first year but little growth will be made, and in all probability not a great deal the second. During hot weather a cool, grateful atmosphere may be maintained by well sprinkling the foliage and soil around both morning and evening.

Tropæolum polyphyllum is by no means of such difficult culture; it requires a free soil, demanding at the same time perfect drainage. It succeeds well on a rockwork, for which position its habit of growth better fits it than for training to trellis-work. Plant the bulbs about March, choosing a sunny, well-drained situation; or if such does not naturally exist, form a raised mound of stone and earth, setting the tubers somewhat deeply in the soil. If the tubers are strong they will give a good display of bloom the first year.

Datura chloranthe.—Seeds of this should be sown either in the autumn and wintered in a cool greenhouse, to be potted off and grown along in a cold frame early in spring, or it may be sown about the beginning of March. It will thrive in the open air in any free soil, but gives most satisfaction when afforded some shelter. J. C.

Byfleet.

Phlox Drummondi.—Here is what is known as a tender annual, that is, for all practical purposes, a hardy bedding plant, and a most effective one, too; its great requirement is a fine soil into which its roots can make a free growth. I have recently seen a bed the soil in which was made up of loam, manure, leaf-mould, and a quantity of finely-sifted mortar rubbish. During dry weather the plants were watered freely, and they now cover the bed completely, and are throwing up remarkably fine trusses of flowers, double the size usually seen. This Phlox must be in rich soil to produce fine flowers, and it is a mistake to have it in poor soil; a good mixture of kinds is essential, that is, the beds should contain plants having flowers of varying and, let us add, striking colours. I saw a bed a few days ago in which the prevailing colour was a pale, indistinct lilac, with scarcely a dash of any brightness to break the monotony. Phlox Drummondi is much to be preferred to the Verbena as a bedding plant, and the rich blood-crimson P. grandiflora splendens is most effective. This variety especially should be used for bedding and border purposes.

Tuberous-rooted Begonias.—When planted out in a light rich soil on a sunny, warm border these do well, and flower profusely, and their blossoms prove more durable than when the plants are in pots in the heated atmosphere of a greenhouse. It is an interesting process to raise a few of these Begonias from seed. It is easy to get a good strain of seed from any seedsman, and it should be sown in a pan or box of light sandy soil, and then placed in a gentle bottom-heat with a piece of glass over it. As soon as the seedlings are large enough to handle, they should be pricked off into pots and grown on as fast as possible. Tuberous-rooted Begonias make good exhibition plants, but they require to be conveyed with much care to the place of show, or they will shed their flowers. It may not be generally known that B. Weltoniensis makes an excellent town plant, growing well and flowering freely in confined places where other plants will fail.

Mauve Beauty Stock.—This magnificent Stock is the result of several years' careful selection, and has commanded general admiration tor its great beauty. It has a true pyramidal, free-branching habit, and forms a dense pyramid of flowers; colour, a lustrous pale mauve; it is a grand variety for exhibition purposes. It can be grown as an intermediate variety if sown in August and September.

Canterbury Bells.—The are some beautiful forms of these, the flowers of which are very large, and in many cases double. They vary in colour from pure white to blush, lilac, pink, rosy-purple, violet, and blue. They rank amongst the most attractive of border flowers, because they bloom so freely and so continuously. Then there is the form known as C. Medium Calycanthema, in which the calyx is coloured and of large size—in the form of a disc. In this section we get white, cream, delicate mauve, and blue flowers. They are very attractive, but one could wish they were a little less lanky in growth. In this respect the new strain of Canterbury Bells decidedly gets the best of it. It is best to sow the seed in March and April, in order to get the plants strong before planting-out time, but some may be sown at once if the plants be pushed on into growth as soon as possible.

Pentstemon heterophyllus; flowers lilac.

Eschscholtzia.—The beautiful forms of this glowing annual, which we have recently seen, are indeed great acquisitions; the rich reddish-orange of Mandarin, and the unique form of the double crocea, are accessions of real value, and, with crocea, alba, and the orange aurantiaca, give us a batch of most attractive flowers. What is known as E. rosea is decidedly pretty, but is so apt to revert to the white form from which it sprang. Some jagged-edged sports, named dentata, are really not worth growing, and have become almost lost. Eschscholtzias are very effective when treated as biennials, the seed being sown in well-prepared ground in September to bloom early in spring; the plants get well established, and send their roots readily into the soil during winter, and then bloom with dazzling splendour in May.

Pansies.—The late rains are greatly helping Pansies, which are now throwing up young growths from the roots. These may be taken off for cuttings as soon as large enough, and put into a well-prepared bed under a shaded north wall. Such a bed as this is of great value at this season of the year for striking cuttings of such plants as choice Antirrhinums and Pentstemons, Pansies and Violas, Wallflowers, Rockets, &c. I have such a bed as this, which is raised about 9 in. above the ground level. At the bottom is a layer of brick rubbish, and over this another of coarse cinder ashes, and above that some pieces of green turf with the Grass downwards. This was trodden down firmly, and then filled up with prepared soil to the depth of 4 in., made up of fine sifted loam and leaf-mould, a little rough Bedfordshire sand, and some finely-sifted cinder ashes. This is well mixed together, and the whole placed in the bed and firmly pressed down; then I add a thin layer of very fine cinder ashes on the top. In such a compost cuttings of the plants I have named strike freely, and the cinder ashes seem to keep the soil open and slugs and other vermin at bay. Cuttings of Violas may be similarly treated. A little top-dressing greatly helps the production of strong young wood, from which cuttings can be made.—D.

HOW TO GROW PENTSTEMONS.

PENTSTEMONS succeed in any good soil, but in a good loam enriched with manure and leaf-soil they are certain to do well. They can be planted out singly or in groups in the mixed border or in beds, in which the various colours become charmingly blended.

The Pentstemon is increased both by means of cuttings and seeds. The former method must be resorted to in order to increase any particular variety. Cuttings should be taken in August or early in September from the young growths thrown up round the main stem, and they should be put into a prepared sandy bed, on a shady border, under a hand-glass, or in boxes or pots placed in a cold frame. They root readily, and those in boxes or pots might be wintered in this way, and not transplanted till spring. Those struck on the border should be lifted and potted, or planted out in a cold frame for the winter, or transplanted to the open ground in a well-prepared bed, and protected with a little litter or branches of evergreens during severe weather. Under general circumstances the young plants should not be planted out till the March or April following. When it is desired to increase the stock of any one or more varieties as rapidly as possible, the store pots of cuttings rooted in autumn should be taken into a gentle bottom-heat in spring and induced to grow; and if the young growths be taken off as soon as they are 2 in. in length, and put in pans of sandy soil in the same temperature, they will quickly strike, and by May and June, if properly treated, will have grown into healthy plants. Seed only of the best varieties should be sown. The Pentstemon is a very free seeder, and there is no difficulty in obtaining some. In saving seed for sowing, only the very finest varieties should be selected for the purpose, and those showing novelty of character—for variation is always a most acceptable characteristic—and such flowers can scarcely fail to yield something well worthy of cultivation.

The seed should be sown in February or early in March in a gentle heat. It will quickly germinate, and when the plants are large enough to handle, they should be pricked off into shallow boxes, and after a time hardened off in a cold frame. Here the plants can remain till the end of May or later, according to their size, and then be planted out in well-prepared beds. A generous soil will serve to bring out as fully as possible the quality of the seedling flowers. When they flower, which they will do by August and September, any varieties of extra good quality should be marked for propagation by cuttings or for seeding from, while the inferior ones will do for the mixed border. If the bed of seedlings be allowed to stand for another season (and it is always a good plan to do this), the seed stalks should be cut away as soon as ripe, the bed cleaned, top-dressed with leaf-soil and short manure in spring, and it will yield a plentiful harvest of flowers the following summer.

The following are twenty-four beautiful varieties that may be obtained from any nurseryman making a speciality of the Pentstemon, viz.:—Agnes Laing, Apollo, Apollon, Bridesmaid, Calliope, delicatissimus, Euterpe, Flora, George Sand, H. M. Stanley, Mons. Clément, Madame Louis Schmitzer, Monarch, Novelty, Polly King, Giant, Iona, Stanstead Rival, W. E. Gumbleton, W. P. Laird, Secretary Curzon, striatus, Volunteer, and Yeoman. Of the species, P. azureus, P. ovatus, P. Jaffrayanus, and P. heterophyllus (represented in our engraving) well deserve cultivation. The flowers of P. Jaffrayanus are of a charming hue of blue, which is only to be found in a very few of the improved varieties. P. heterophyllus bears pinkish-lilac coloured blossoms.

Forget-me-not in Derbyshire.—Myosotis grows as the weeds of the field in the limestone regions of Derbyshire. I applied some Derbyshire lime to mine and had abundance of bloom.—W. W., *Belper*.

Petunias.—Beds and ribbon lines of these are now very effective. For decorative purposes the small, finely-formed, striped section is to be preferred; the growth is dwarf, compact, and somewhat spare, while the flowers are produced with great freedom. There is a section with a more robust growth which produces large but looser flowers than the foregoing, flowers that hang their petals and have a flabby appearance; this section does not bloom so freely as the foregoing. Sometimes persons who grow Petunias are apt to be disappointed because the flowers come self-coloured; this is frequently the case in regard to their early blossoms, but the later ones invariably break into the correct striped form, and then all sense of disappointment is lost in the contemplation of so much beauty. During dull, wet weather the flowers will come self-coloured, but let a hot, sunny day follow, and then the striped character flashes forth again with charming effect. Petunias, both double and single, make fine exhibition plants; they succeed uncommonly well in the west of England, especially the single varieties, where plants can be seen having from fifty to one hundred flowers—and very fine flowers, too. There is nothing like them to be seen round London.—D.

Mimulus.—I give my experience of Mimulus, hoping that it may do good. The first Mimulus that came into my possession was the old M. Fraseri. It has a very pretty flower, but when not in flower looks rather dowdy; it is a good bedding plant, showing its flowers to perfection, for they will stand wind and rain; it is very easy to propagate. The double Mimuluses are very pretty; one of the prettiest I know has a pale Hose-in-hose flower, and possesses the advantage of being very pretty when out of flower, its small serrated leaves looking more handsome than those of M. Fraseri. I have propagated this outdoors sheltered from the rain; the name is M. Duplex. The best Mimulus I have seen is M. tigrinum.—G. SIETHORP.

Hardiness of Indian Pinks.—Two years ago I purchased a packet of seed of these Pinks, also one of Japan Pinks, sowed both out-of-doors, and they have been in my garden ever since without the slightest protection. Last spring I gave them the best bed we had, hoping for a grand display, but they did very indifferently, and went somewhat out of favour. This spring, and up to the present time, they have bloomed splendidly, and those friends who were loudest in their condemnation last year are almost as loud in praise this. The Japan ones are very interesting; the blossoms are but small, but well thrown up above the leaves. When the sun shines on them they expand and seem to

revel in it; but at night they close up their little heads, and, if I may use such a term, appear to go to sleep. Mine are pink, white, and crimson; last year there were a few different colours. For a rock plant I have seen few things to beat them, and they have the advantage of being green all through the winter. I may add that my garden is very exposed, standing quite 12 ft. above the road, and exposed to strong north-east winds. My plants have been shifted from place to place frequently, so that in these respects they are not at all favoured.—T. C.

Propagating Clematis.—In the spring of 1878 I bought several of these plants specially to try whether I could propagate them. The following is the course adopted and the result: 1st July, 1878, I put in two cuttings of the Queen Clematis, two joints each cutting, measuring between 2 in. and 3 in. each, and dibbled them in a 2½-in. pot in light garden mould, no sand or shade, sank the pot in south border and put hand-glass over pot, kept them rather wet; after they had been in a month I put a stone under the glass to give them air day and night. I took the pot up on August 19, and found the roots coming through; November 21 they were two very nice plants, and nearly as large as the parent plant I bought June 10 same year. One of these I planted in May this year on north wall, and is a promising plant. August 19, 1878, I dibbled eight cuttings of Clematis M. Albani in a 4½-in. pot; October 7 slipped them out to see if rooted, and found they had; October 21 potted them in 3-in. pots, treated as above; planted one on south wall last year, but now rather backward; another I planted in May this year against south wall, and is growing very fast considering the weather. All the attention I gave them was to keep them wet, and look morning and evening for slugs, and press down worm-casts in the pots; watered with cold water.—C. S.

Double-flowered Pæonies.—These constitute at the present time one of the chief features of the hardy flower garden, and too much cannot be said in their praise. They possess an exquisite perfume similar to that of Tea Roses, and their large handsomely-formed flowers possess a striking variation of colour, varying from the deepest crimson to the purest white. In Mr. Parker's nursery at Tooting, which contains the finest collection we know of, there are upwards of seventy sorts which are more or less distinct, though necessarily there is a strong resemblance to each other in some of the kinds. The majority appear to be of Continental origin, a circumstance owing no doubt to the climate there being more favourable for perfecting the seed; hence the greater number of the sorts bear foreign names. Without making a long list of the best varieties we append an enumeration of a few of the most distinct. Among the best white kinds are Alba sulphurea, Candidissima, Marquis de Lory, Nivea plenissima, and Queen Perfection. Of pinks—Souvenir de l'Exposition, Oberlin, Madame Lemoine, Louisa d'Estrees, and Dr. Brettonneau. Of crimsons—Ambroise Verschaffelt, Henry Demay, Souvenir d'Auguste Miellez, Victoire d'Alma, and Augustin Dhour. Such sorts as the following would fill up, as it were, the intermediate shades in making a representative selection, viz., Eugène Verdier, Madame Calot, Madame Serret, Triomphe de Paris, Prince de Salm Dycke, Madame Vilmorin, and Gloria Patria. All the above grow to much the same height, about 3 ft., and thrive well in any ordinary garden soil. All the varieties appear to have sprung from the old P. officinalis and its varieties, and more particularly from the Anemone-flowered kind (anemonæflora), the flowers of which have an outer row of large or guard petals enclosing numerous small petals.

Gladioli and Marigolds.—A slight mulching of 1 in. or so of rotten manure over the surface of Gladiolus beds will benefit them, and will help to keep the soil moist and the roots cool, which has a considerable influence in preventing the disease. Tie the plants up before they get so large as to be acted upon by the wind, using for this purpose a neat stick, such as a stout dry Willow or Hazel, the thickness of one's finger; and be careful, when inserting it, not to thrust it down so near the roots as to injure them. There are few more handsome and continuous border flowers than the French Marigold, blooming, as it does, from the present time until it is cut down by frost. Those who happen to have a good strain of striped or edged kinds should now, as the plants come into flower, remove all that are single or semi-double. This not only greatly improves the appearance of what are left, but is also necessary in saving seed, which is deteriorated by the presence of poor flowers. No seed should be saved except from the best double blooms. If the strain is too dark, or does not possess a sufficient number of the rich yellow-striped forms, or is deficient in size, a few plants of the African Yellow should be grown near or amongst them. These will cross with and improve the French varieties, both in colour and size; but this must not be repeated every year, or they will become too yellow.

Tom Thumb Fuchsia.—This is a pretty little plant, somewhat resembling F. gracilis, but smaller, rarely exceeding 1 ft. in height, and forming spreading little bushes from 1 ft. to 1½ ft. in diameter, each tiny shoot being ladened with crimson-sepalled, purple-petalled flowers and bright buds, as suggested in the annexed engraving, which represents the top of a flowering shoot exactly of the natural size. The plant does not appear to be generally grown in England, but here, in Ireland, the naturalised home of the Fuchsia, it is more common, although nowhere so plentiful as the F. globosa, F. Riccartoni, and F. gracilis. Little bushes of all the kinds mentioned are charming ornaments to the rockery and herbaceous border, or even for isolated positions on the lawn in sheltered places. Cuttings inserted in any light garden soil about July, and sheltered by a hand-glass or cloche, root freely, and form pretty little plants for flowering the following year. As a pot plant it is very desirable, and if cuttings be forwarded in a cold frame pretty little specimens may be obtained, and are very useful for summer and autumn greenhouse or window decoration. Were it more readily procurable it would prove to be a most desirable plant for the cottage window. Whether this Fuchsia is a puny form of the hardy F. Riccartoni, or a pure species hitherto overlooked in the great struggle after "new and rare" plants, is a question of merely secondary importance. The main point is that it is one of the most distinct and effective of all hardy kinds of Fuchsia, and as such worthy of a far more general distribution than it now enjoys. It would probably be obtainable in Irish nurseries, such as those of Mr. Smith, of Newry, or Messrs. Farrell & Sons, Chapel Street, Dublin.—B.

Tom Thumb Fuchsia (a hardy plant).

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 19.—Potting Daphnes into a mixture of loam, peat, charcoal, bones, and sand; also Amarantus and Dracænas, and put them in warm house; digging up Rivers' Early Ashleaf Potatoes; thinning Mignonette in pots, and clipping Cerastium edgings, and preparing borders in which to put Pelargonium cuttings; sowing black-seeded Brown Cos Lettuce for winter use; potting on small Cinerarias; planting out Lettuces and Endive; earthing up Cardoons; pulling up pickling Onions and spreading them out to dry; sticking Peas and getting them earthed up, and topping those which are growing above the sticks; getting large rough frames ready for sowing late Peas and late Dwarf French Beans, so as to protect them from the early autumn frosts; nailing and tying in Roses on walls and picking off all dead flowers; hoeing and weeding amongst Strawberries, and cutting away all runners that are not required for planting.

July 20.—Layering Strawberry runners with which to make new plantations; digging land for Turnips cutting Lavender, weeding and thinning Chicory, and earthing up Cucumbers; Sowing Laxton's Omega and Unique Peas; budding Roses, and giving them a good mulching with rotten manure; hand-weeding herbaceous borders and giving them a general clean up; watering Celery; also Leeks, Parsley, Turnips, &c.; gathering Black Currants for preserving; lifting early sorts of Potatoes and spreading them out in the sun to ripen them well for seed next season.

July 21.—Potting Abutilon Boule de Neige; also Primulas, and afterwards placing them in a close shady frame until well rooted; planting Coleworts on land cleared of early Peas, making the holes with a crowbar, and afterwards watering the roots well in; staking Petunias and Rhodanthes; dressing Apple trees with paraffin to kill American blight; putting in Pink and Carnation pipings under hand-lights; earthing up Celery when the soil is dry and in workable condition; weeding and picking over carpet bedding borders; making up new Mushroom bed in the open ground; looking over Marrows and Gherkins, and closely stopping them all; digging up, manuring, and watering borders previous to sowing with Wheeler's Imperial Cabbage, and stopping and nailing in the shoots of Tomatoes on walls; nailing in all the leading shoots of Peaches, Nectarines, Apricots, and Cherries; looking over Cucumbers and Melons, watering them and stopping them where required, and renovating the linings round all manure frames.

July 22.—Potting Sir Harry Strawberries for forcing; putting in cuttings of Lady Plymouth Pelargoniums for pot culture; watering herb beds and Pear trees; filling pits with fermenting material in which to plant Cucumbers; digging land for main crop of Spinach; potting on Celosias, Coleuses, and Begonias; picking off early blooms and pegging down the branches of exhibition Balsams; stopping the laterals through all Vineries and giving late houses a good soaking with guano water inside and out; staking and tying in plants on borders; training out and pegging down bedding plants and clearing away decaying leaves and flowers; thinning out Turnips, Carrots, and Spinach; cutting back Laurels in pleasure grounds where overgrowing walks; watering Lettuce and Endive beds, and hoeing amongst all growing crops.

July 23.—Putting in Phlox and Pelargonium cuttings; weeding, hoeing, and afterwards mulching Aster beds; stopping and tying out Dahlias and thinning out the blooms where required for exhibition; cutting back Ivy on walls where overgrowing windows; clearing off Peas and manuring and digging the ground ready for autumn Cabbages; getting new mould into cold pits and pricking them out with Parsley roots for winter use; cutting back the breastwood and nailing in the leaders of Plums and Pears; potting Pinks and winter-flowering Carnations; sowing Sir Joseph Paxton French Beans under the protection of a wall; earthing up Cauliflowers; planting Paris Cos Lettuce.

July 24.—Pricking off a late batch of Primulas and Cinerarias; transplanting Silenes and Forget-me-nots from seed beds, also seedling Violas; planting out a large breadth of Savoys for small heads, also Coleworts; mulching late Peas with rotten manure; giving Scarlet Runner Beans a good soaking with manure water; weeding and cleaning Box edgings in garden walks; watering Celery, Cardoons, Cauliflowers, and Tomatoes; potting Caladiums and young Begonias; sowing Nemophilas for pot culture; also Ten-week Stocks, Phlox Drummondi, Lobelias, Rhodanthes, Schizanthus, and Clintonia pulchella; also sowing more Lettuce, American Cress, French Beans, and Spinach; watering Rhododendrons likely to suffer from drought; putting in cuttings of Centaurea and Artemisia; tying up dried Basil and putting it in paper.

Flower.

Verbenas, Petunias, Heliotropes, and Ageratums are growing straggly and require pegging, in order to preserve uniformity of height and truthfulness of design. Stake Sweet Peas, top back a few inches the earliest flowered ones, in order to induce a second bloom, and clip over, with the same intent, annual flowers that have produced a first bloom. Virginian Stocks, Schizanthuses, Nemophilas, and Eschscholtzias are all amenable to such manipulation. Lawns must be frequently mown and swept, using the roller assiduously in damp weather. Daisies, Dandelions, and other objectionable weeds in Grass must be eradicated on every favourable

opportunity, taking care to do the least possible injury to the turf. A slight sprinkling of salt is beneficial to Grass at this season; it should be applied in wet weather. Those who grow common spring flowers, as Daisies, Pansies, Arabis, Aubrietias, Forget-me-nots, &c., may now sow seeds in cold frames, pricking them out when ready; they will thus make good strong plants by the time the bedding plants have played their part. The above may also be propagated by means of cuttings or root division; indeed, seeds of most perennials may now be sown in nursery beds, and a few annuals in borders for late flowering. A mulching of well rotted manure given to beds of Asters, Stocks, Zinnias, Helichrysums, &c., will materially assist in developing their flowers and deepening their colour.

Asters.—Do not allow these to grow too thickly, or the flowers will be small and the plants will soon become exhausted. If they show signs of weakness through the ground not being rich enough, assist them with manure water. There is no plant less able than Asters to bear the effect of aphides, whose presence is easily detected by the leaves curling up. A good washing with Tobacco water is the best remedy, and this should be applied as soon as the insects are detected, or the plants will be surely spoilt. The tall-growing kinds, if at all in an exposed situation, will require a small stick and tie to each plant.

Lilies in Pots.—These will now require attention; the necessary supports, consisting of a single stick to each stem, should at once be put to them. Where there are several bulbs in a pot it is necessary to be careful as to how the sticks are inserted, otherwise the bulbs will get injured. Where the plants are strong and the pots comparatively small for the number of bulbs which they contain, the roots will by this time have permeated every particle of soil. Liquid manure will be of the greatest possible benefit in enabling them to retain their lower leaves in a green healthy state until the flowering is over. Another matter is to keep them scrupulously clear from insects, as there are few plants that sooner suffer from neglect in this matter. L. eximium, the earliest bloomed plants of L. auratum, and others that have done flowering, so far as their future well-being is concerned, require to be just as well treated in the matter of attention as to water, so long as their leaves keep green, as they did previous to blooming.

Phloxes in Pots.—These should be supported by means of stoutish sticks, and it may be necessary to plunge the pots in Cocoanut fibre refuse or some similar material, to prevent their being overthrown by the wind. They must be attended to with regard to watering, and they will be benefited by liberal supplies of manure water up to the time when the flowers open. All such subjects out-of-doors require the same attention. The best time at which to propagate Phloxes is early in spring, but there are side-growths to be obtained now, which may be inserted either in a shady border or in small pots.

Pentstemons.—These are just coming into bloom, and the growing shoots must be carefully fastened to sticks. Pentstemons have a good effect in mixed borders and also in beds. Cuttings of them may be put in now if the object be to attain a large stock of plants, but the best time is September or early in October.

Delphiniums.—These are now in full beauty, and well repay the cultivator for any care which he may have taken with them. Nothing now is required except to see that the flowers are not injured by the wind.

Pits and Frames.

Where pot plants are grown in pits they must be kept well up to the glass, or they are apt to become drawn. Plants in such structures are more liable to get neglected as regards water than in houses, where they can be more readily examined. Under such circumstances, too, insects are more likely to escape observation than in more open quarters, and therefore must be looked after more closely. In addition to supplying pot plants with sufficient water at the roots, it is also requisite, while active growth is progressing, to keep the floors of the pits or frames on which they stand well and regularly moistened, for if this be not attended to the atmosphere during hot sunny weather becomes so dry that healthy growth is out of the question.

Fuchsias, &c.—Some cuttings should now be put in to keep on growing slowly through the winter; these will give much more satisfaction than old plants, which, as generally managed, are thin and scraggy, showing too much of the old wood, whereas a well-grown Fuchsia should be profusely furnished with young shoots covered with flowers and healthy foliage. Fuchsias, Petunias, and zonal Pelargoniums that are intended to flower through the autumn should receive all requisite attention, and be kept in a blooming condition so long as there is sufficient atmospheric heat and light, as from this time forward there are comparatively few greenhouse plants to maintain a display.

Hardy Fernery.

Ferns, unless well looked to and properly supplied with water, both overhead and at the roots, will soon present a shabby appearance, as thrips are sure to attack them. Where bulbous plants and others of a semi-wild character are grown in suitable portions of the hardy Fernery, as they always should be, the less interference they receive in the way of trimming or removal of leaves the greater will be their strength and capacity for blooming next year. It is a great mistake, for the sake of appearances, to denude such plants of their foliage, as is frequently the case, long before it has died off and ceased to be useful, the effect being to stop the maturation of the bulb or crown of the plant, as the case may be, and prevent the formation of flowers.

Shrubbery.

Flowering shrubs, as soon as they go out of bloom, should have dead and decaying flowers removed, and when necessary the plants should be cut back. Box edgings may also now be trimmed, and all Sweet Brier and Privet hedges may be cut. The common Yew is an excellent hedge plant, but it is of slow growth. There are, however, several other hardy coniferous trees to which this objection does not apply, such as Cupressus Lawsoniana, Thuja Lobbi, Thujopsis borealis, &c., all of which are well suited for ornamental hedges or screens. Where such already exist the present is the most suitable time for cutting, or rather clipping them; but when such hedges or screens consist of large-leaved plants, such as the common or Portugal Laurel, it is then advisable to prune with the knife, in order to avoid, as much as possible, the mutilation of the leaves. The present is a suitable time to attend to the cutting or trimming of dwarf coniferous trees and ornamental shrubs of various sorts, in which it is necessary to preserve a certain amount of uniformity as regards shape and size. Among plants well suited for this purpose are the Sweet Bay, the Portugal Laurel, the Laurustinus, &c., trained in the form of standards or otherwise, together with various sorts of Cypresses and Junipers, and other plants of a drooping habit of growth; also the Irish Yew (Taxus fastigiata), generally trained in the form of pyramids, upon which are sometimes grafted the gold and silver-striped varieties of the common Yew, a union which produces a very striking effect, as do also trained specimens of the fine-foliaged Maple (Acer Negundo variegatum), which, although deciduous, produces, nevertheless, during the summer months a very pleasing contrast when associated with sombre or dark-foliaged plants.

Fruit.

Strawberries.—Old Strawberry beds that have become exhausted should be dug over as soon as the fruit is gathered. The best method is to cut them off with the spade just below the collar and bury them as the work goes on, opening a trench for the purpose sufficiently wide at the commencement. The old tops thus dug under will benefit the ground, especially if it be of a heavy character. There is no better crop to follow Strawberries, when dug up at this time of the year, than Turnips, which should be sown as soon as rain falls after the ground is prepared.

Pears and Plums on walls should have their summer shoots removed as soon as they have ceased to grow, in order to give the tree a better opportunity to form fruit-buds for the ensuing year, and to expose them to the ripening influence of sun and air; but if such shoots be removed too soon, *i.e.*, whilst there is a considerable flow of sap in the trees, more harm than good will be done, as the trees will start again into growth. The usual way is to break off the breast-wood (for that is the term usually applied to these summer shoots) with the thumb laid across the blade of the pruning-knife, or a stout pair of ordinary nippers may be used for the purpose, severing the shoots at about ½ in. or ¾ in. above the point from which they spring.

Vegetables.

Sowing Cabbages.—In sowing Cabbage seed during the present month for the early spring supply, a difference of ten days has an important influence upon the time when the crop will be ready, and also affects the varieties grown. In the northern parts of the kingdom, where hardy sorts, such as the Enfield Market, stand the winter best, the seeds of these should be sown as soon as the 20th of the present month is passed; delay beyond this will cause the crop to be fit for use later in the spring. If sown sooner many of the plants will run to seed instead of hearting at the proper time. Where early varieties, such as the York, are grown, they must not be sown until eight or ten days later, or the plants will bolt. In the southern parts of the kingdom Cabbages should be sown a week later than the above dates, the later kinds being put in first and the earliest last. Where these directions are followed the disappointment of seeding instead of hearting will not be experienced. Select an open situation where the plants, from the time they are up, will get plenty of light and air, for the drawn and weakly plants sown near trees or high walls are not calculated to stand a severe winter.

Celery and Scarlet Runners.—Where the seeds of Celery were sown early, and the plants prepared with a view to obtaining an early supply, they will now be growing fast. Where the ground was well enriched there will not have been any necessity for watering; but where there has been a deficiency of manure, weekly applications of manure water will be required. Should Celery become at all affected with green fly, to which it is very subject if grown near anything else that is troubled with the insect, its presence will be indicated by the leaves curling up and an unhealthy, stunted appearance of the plants. So soon as any aphides are found give a good washing with soapy water from the wash-house, applying it with the syringe. To be effectual it must reach every part of the plants above ground, for, even upon such portions of the leaves as harbour no living insects, it is more than likely that there are eggs which will quickly come to life. Should they not be killed by one dressing, give a second within a few days. Scarlet Runners grown without sticks should have their shoots repeatedly nipped out as they push up.

GLASSHOUSES AND FRAMES.

Campanula calycanthema. — How rarely one sees this charming plant receive the attention it merits. I think it is not generally known how useful both the purple and white kinds are for pot culture, and with how little attention they may be grown to produce a most pleasing effect in the greenhouse throughout the months of April, May, and June if sown now or any time next month in pans, pricked out when large enough to handle, and in due course potted, increasing the size of pot each time they are potted, finally into 8½-in. pots, in which size they will make fine bushy plants in April; after the last shift stand them by in a cold frame, then let them remain until the month of February, when you may introduce them as required into a warm house; they will soon start into growth, when a little manure water will greatly assist them. I generally remove them out of the warm house into a cold one a short time before they open their flowers. When there is a great demand for large pieces of cut flowers for indoor decoration it is a most useful plant to grow. I frequently cut off the whole plant to the surface of the pot in one piece from 3 ft. to 4 ft. high, thus destroying the plant at once, but this one can do without incurring any serious loss or sacrifice. There is also a very old favourite plant which I have

applied to pot cultivation with equally satisfactory results as the Campanula, viz., the Corn Marigold (Chrysanthemum segetum); sown in September and treated as the above three plants in a 8½-in. pot, it will flower in March, and following months up to July. I have had large pots full of it in flower throughout spring this season. It is a common, valueless plant, and looked upon by some people as a mere weed; nevertheless, it is a very useful one when grown to flower in early spring.—G. B.

Lobelia in the Greenhouse.—Having an over-supply of Lobelia (Crystal Palace Gem), it occurred to me how well some small pots of it would look in the greenhouse interspersed amongst the other flowers; so I accordingly filled several 4-in. pots with nice clumps just coming into bloom, and now the result is that every one is delighted with the pretty effect the bright blue has in contrast with the various shades of crimson and yellow so abundant at present, and the scarcity of blue just now makes the Lobelia quite invaluable for inside as well as outside decoration.—W. A. G.

An Easy Way of Raising Tuberous Begonias.—Some persons find it so difficult to grow these beautiful plants from seed, that a simple plan I found to succeed admirably will no doubt prove useful to such. Last April I sowed a 1s. packet of seed in a pan of loam and silver sand and put it in a hotbed; but, seeing that the seed failed in coming up, I placed it under a glass in a warm corner of the greenhouse, and about three weeks after the young plants began to appear, and now we have several dozen of strong little Begonias ready for potting. This proves that these flowers can be raised without any bottom heat whatever, which is very important to know.—W. A. G.

Martynias and Campanulas.—I would advise amateurs to grow in a greenhouse Martynias. I had a threepenny packet, and they are splendid, easily cultivated, sweet-scented, and, in my opinion, as handsome as Gloxinias, and not requiring extra heat. Any one trying to grow them will be well repaid by the bloom. I would also mention Campanula calycanthema (white); mine are now in bloom lovely from seeds sown last summer.—MIGNONETTE.

Crassula coccinea or Kalosanthes.—This is an old greenhouse favourite, much thought of in former days, when gardeners used to grow specimens of it several feet through, each shoot being furnished at its summit with a broad truss of waxy-scarlet flowers, showy and sweet-scented. The plant also grows out-of-doors freely in summer, and when in flower is most brilliant and effective. This plant is known now-a-days as Kalosanthes. To flower it well it requires to be grown in hot, dry quarters. Cuttings, which strike very easily, should be made from the young shoots which have not flowered in August or early in September. Make the cuttings about 3 in. long; do not stop them, but divest them of a few of their bottom leaves, and pot each singly and firmly in a 3-in. pot, using a light compost of sand, leaf-mould, loam, and pounded bricks or crocks. They will soon root if placed near the glass in a warm pit, or an intermediate house shelf, if they are not damped too much at top or bottom. When rooted remove them to a cool, dry greenhouse for the winter, and give scarcely any water till spring; the object at this time is simply to keep them at rest. About the beginning of March the plants may be potted in 8-in. or 9-in. pots, which is a suitable size for plants intended to have six or seven shoots. A little heavier compost should be used for this, the final potting, and with it plenty of broken crocks or bricks, taking care also to drain the pots thoroughly. After potting, the plants should have a growing temperature near the light. A warm greenhouse or pit will do, but do not give too much water at any time. At this stage some of the plants will break up into a number of shoots at the top, and the others will keep to a single shoot only. The former should be thinned out to six or eight shoots, and the latter pinched at the top to make them break; the young shoots secured in this way will also bear flowers. By May the plants will be growing fast, and at this time they may, in warm localities, be plunged out-of-doors in a warm corner. In front of a hothouse is a good place for them, and it is a common practice to plunge them in sand, which gets hot with the sun; otherwise they need not be plunged at all, but simply set on a hard surface. In cold localities it is better to grow the plants under glass all summer with plenty of air and sun. Whichever plan is adopted, let the plants from this time grow uninterruptedly, and before cold weather sets in take them into any house where the temperature is genial and dry. Here they will show flower, if the trusses are not already in an advanced state, and the season of flowering may be prolonged by keeping the plants in cool houses. If the plants are intended for planting out, they must simply be wintered in a cool house and not permitted to flower, and planted out the following season, where they will be certain to flower and make a bright display.—J.

Tabernæmontana camassa.—Growers of flowers for market should cultivate a house of this plant alone. It is a newly-introduced evergreen stove shrub of a neat, compact, dwarf habit, with glossy bright Laurel-like leaves and racemes of double white flowers of Gardenia-like outline and fragrance, which are produced on the point of every shoot. From the Gardenia it differs in its easier growth, and in requiring a much less stimulating atmosphere to produce its bloom; the usual temperature of a hothouse with less humidity will produce blooms more freely and longer in succession. The petals of the flowers are lighter and more elegantly arranged than the Gardenia and not quite so large; small plants in 3-in. pots will produce flowers freely.—J. S.

A Fine-leaved Hothouse Plant (Dieffenbachia baraquiniana). — This Dieffenbachia, an illustration of which is given on the next page, is the best species of an easily-grown, handsome genus of hothouse plants. It is of moderate stature, and associates well with larger fine-leaved plants, or it may be intermixed with flowering plants. It is a free grower, and is not over particular as to the material in which it is grown. Either peat or loam, or a mixture of both, will suit it, to which add a liberal admixture of clean sand, with a little thoroughly rotten manure. Use plenty of drainage. The plant will stand a liberal shift, say from a 6-in. pot to a 10-in. or 12-in. one. It will grow well in a moist warm temperature, and it must never, even when comparatively at rest in winter, be subjected to a temperature lower than 50° or 55° at night. It is a gross feeder, and will grow all the better if supplied occasionally with manure water; it is, however, best as a rule not to apply liquid manure to quick-growing, succulent, variegated plants, as most of them do not come so finely coloured if grown too vigorously. This Dieffenbachia is not much troubled with the attacks of insects, but should they appear they are easily kept in check by an occasional application of the syringe. It strikes freely from cuttings made of short pieces of the stem inserted in sand, and kept a little close until they have struck root. It likes a little shade during the growing season, as its leaves are too soft to withstand the sun's rays when at all powerful. The beauty of its leaves makes it a desirable plant for room decoration, but it must not be kept too long indoors at a time, or it will fall into ill-health.

NATIONAL ROSE SOCIETY.

THE exhibition of this society, which was held at the Crystal Palace on July 3, was better than many expected on account of the bad season for Roses which we have had, the classes being fairly well filled and the quality of the blooms of the usual high standard of excellence. The amateurs' exhibits were, on the whole, superior to those shown by nurserymen, and especially those in the contending stands for the challenge cup, some of which were remarkable examples of high class culture. The small collections shown by amateurs were particularly good, while the growers about London and others, whose nurseries are in cold soils, could not show such fine blooms as they do in some seasons; and the absence of many leading growers in the trade was a conspicuous feature. The only miscellaneous exhibit was some bright collections of cut blooms of Pelargoniums, backed by a fine row of Canterbury Bells in various shades of colour, the whole forming an attractive display, which tended greatly to relieve the monotony of the long lines of Rose boxes. Some of the finest blooms in the amateurs' winning collections were Annie Laxton, Dr. Andry, Sultan of Zanzibar, Madame Frères, A. K. Williams, Capt. Christy, Madame Charles Wood, La Havre, Elie Morel, Princess Beatrice, Alfred Colomb, Duchesse de Vallombrosa, Abel Carrière, Marie Van Houtte, Fisher Holmes, Exposition de Brie, Hippolyte Jamain, Beauty of Waltham, François Michelon, Sir Garnet Wolseley, Henri Ledechaux, Mons. Noman, Duke of Wellington, Madame Marie Finger, Comtesse d'Oxford, Marie Baumann, Madame Lacharme, Marguerite de St. Amand, Madame Furtado, Lord Macaulay, Souvenir d'Elise Vardon, Camille Bernardin, La France, Xavier Olibo, Baron Brouste, Magna Charta, Charles Lefebvre, J. S. Mills, Auguste Rigotard, Mons. E. Y. Teas, Duke of Edinburgh, Marguerite Brassac, Ferdinand de Lesseps, Catherine Mermet, T. Mills, Madame Victor Verdier, Edouard Morren, Jean Luizet, Mdlle. Marie Rady, Pierre Notting, and Madame Hippolyte Jamain.

ALEXANDRA PALACE ROSE SHOW.

JULY 10.

THIS was quite a novelty in the way of Rose shows, the competitive exhibits being supplemented by an immense mass of Roses sent by Messrs. William Paul & Son, of Waltham Cross, who has undertaken to keep up the display until the 17th. The show was arranged in the centre transept, which had been made exceptionally tasteful. The collateral display made by Messrs. Paul & Son comprised an extensive arrangement which filled back and front, two elevated stages erected the whole length of the centre transept on each side. Mr. Cannell, Swanley, showed eighty trusses of both double and single zonal Pelargoniums, making in this respect a fine display. Alongside were thirty-two varieties of Verbenas, showing a wonderful variety of colour and an advance of size by comparison with many older examples. Among some of the most remarkable blooms of Roses shown may be mentioned Etienne Levet, Marie Baumann, Baroness Rothschild, and La France. A detailed list of awards will be found in our advertisement columns.

An Unexpected Crop of Mushrooms.—In the summer of 1879 my gardener made a bed for Mushrooms in a covered frame, but nothing whatever came in it. In May of the present year he prepared a bed for Tomatoes in the open air close to the garden wall, having a south aspect. On this with more manure he put the contents of the old unproductive Mushroom bed. The result is a continuous and abundant crop of remarkably fine Mushrooms. More of the same bedding was put on other beds, but no Mushrooms yet, July 8.—A.

FRUIT.

Strawberry Culture.—The letter of "R. E." in GARDENING, June 26, so fully gives directions for Strawberry culture, that I have little to say. Of course runners should be taken from fruiting plants and pegged into pots, though I have found pegging into the ground answer fairly well. I use hairpins as the cheapest of peggers. The pots should be sunk in the ground and watered when the plants are taken from the parents. I put all the pots together in a very shady spot. As they are easily watered I always plant the runners in a triangle, 4 in. apart; when showing bloom next spring I go over all, and if I see any barren ones, pull up. It is an excellent plan to tie the flower-stalks together with a thick soft bit of twine or bast, putting the string through the ring of a croquet spike, so as to keep up the string; if the leaves can be kept down and the fruit fully exposed to the sun, they are much sweeter and ripen better. And now I would ask information as to keeping the fruit clean, and at the same time prevent slugs from eating the fruit. This year I have tried Cocoa-nut fibre, but the rain washes it away. Last year I tried tan, the carriage of a cartload costing 8s., and the Strawberries were clean, but still the slugs eat them. I use crinolines, two dozen; they are best of all, but 500 of them at 7d. each would be nearly £15—too expensive. I believe half circles of earthenware are made, and they are very useful to keep the

fruit clean, but I fear not to keep off slugs. I have thrown lime over the plants, but the rain soon washes it off. As to traps of bran or brewer's grains, I have tried both, and never caught a slug. I this year trapped a number of large slugs with Cabbage leaves, but the Strawberry slug is, I think, a different kind to the others—a small grey slug. I think the best plan is to tie up all the fruit stalks, and let them have sun, and give water; but this must be carefully done, for I got a boy to help, and all were tied so loosely, that the fruit by their weight rested on the ground. Mulching keeps clean, but is of no use against slugs.—OLD INDIAN.

Manure Water for Strawberries.—Never, I think, has the show of Strawberry blossoms been finer than it was this year, but in many cases the fruit has not been proportionate. When the blossoms of the earlier sorts had fallen, I noticed that the stalks continued upright, and the calyx spreading star-like instead of folding over the young fruit; I instantly took the alarm, knowing the fruit could not be setting or swelling. I accordingly poured pails full of liquid manure between the rows, of course taking care that none went over the plants; a good deal of the manure went through the spout of the watering-pot; every alternate night I washed in this with clear water, and then the rain came, and I have a very large crop of deliciously flavoured fruit; have quite beaten all my neighbours, who simply used clear water, although all have certainly four times my number of plants. I think the management of Strawberries must be varied according to soil. In our sand of Redhill I find it the best plan to keep the ground between the rows as hard as possible, and if I mulch with manure at all I do it in the spring. My plants have been in the same place some six years. Now and then I destroy a row of old plants and put in the runners which have rooted from them. I simply plant them, and do not touch or manure them in any way. The success of my plan is the wonder of my neighbours, although the gardeners, who come to assist me very occasionally, from time to time shake their heads and protest—"they do not hold with them doings."—MARK.

Potting Strawberries.—An eminent fruit grower has stated that these should be potted as firmly "as the fingers and thumbs can make them." In the open quarter Strawberries like a deep, open soil, and they, too, will send their roots down to a great depth; but with pot plants for forcing it is different. The less-sized pots they can be crammed into consistently the better. The object should be to get the pots well packed with roots before winter; 4½-in. and 5-in. pots, and for the most vigorous growers 6-in. ones, are as large as should ever be used. The last size is rarely employed; the 5-in. suits almost all kinds, and if the plants be potted tolerably hard, it is as much as they can do to fill the pots before October, after which time it is preferable that the plants should mature rather than prolong their growth. In the case of Strawberries, however, it is possible to make the soil too hard, as has been proved. Under the roots, next to the drainage, the soil may be pressed hard enough, but in filling in round the plants it need not be rammed quite so firm.

Training Fruit Trees.—The illustration on the opposite page represents a form of training Pear trees much employed in France. It is an excellent way, but for covering the wall quickly we prefer the upright style of tree with two main branches in the shape of a U. This form of training of course takes more trees in a given space than the one shown in our illustration, and therefore many may prefer the latter way.

A fine-leaved Hothouse Plant (Dieffenbachia baraquiniana). (See preceding page.)

ANSWERS TO QUERIES.

2459.—**Hedges for a Garden.**—Privet makes a good hedge quickly, and will answer for divisional lines. White Thorn is better where sheep or stock have access, or a mixture of Thorn and Privet makes a good fence, especially for sandy situations, as the Thorn gives strength to the Privet to enable it to resist the force of the wind. There is an objection to Privet: its roots rob the land more than most plants. The Yew tree is a good hedge plant, and grows quickly; so also is the Arbor-vitæ and the Holly. The Privet, however, is the fastest grower and cheapest.—E.

2447.—**Growing Tobacco.**—I do not think that, legally, Tobacco can be grown at all in this country, although, of course, the Inland Revenue officials never trouble about a few plants grown for private use or experiment. The seed should be sown in March on a slight hotbed and be thinned out to 2 in. apart, or it may, if desired, be sown in pots or pans and pricked off when large enough. The young plants should be hardened off in the same way as ordinary bedding plants are, and be planted out about the middle of May, 2 ft. apart, on good land. When the plants show flower pinch out the points to take off the flowers, as they take some of the substance from the leaves. When full grown and the leaves are beginning to change colour cut the plants off at the base, and hang them up in an open shed to ripen off. When this is done gather the leaves and place them in a heap to ferment. If there is only a small quantity place them in a warm house, such as a Mushroom house, for two or three days. After the fermentation has proceeded the time I have mentioned let them dry again, and it may be necessary to ferment them again in order to give the Tobacco a mellow flavour. Perhaps for merely fumigating purposes once fermenting will be sufficient. It should be thoroughly dried and packed away in a dry place. The Virginian Tobacco (Nicotiana tabacum) is the kind commonly grown, but Nicotiana rustica is hardier and dwarfer, and would suit our climate better.—E. H.

2461.—**Ants in Lawns.**—Scatter guano in the ants' runs and about their nests. Water with a mixture of paraffin and water, a wineglassful of the former to a gallon of the latter. If any should remain in the autumn, take up the turf, dig out the rest, water the place with the paraffin and water, and lay down the turf again. They do not like to be disturbed; digging up their nests generally banishes them.—E. H.

2450.—**Slugs, Snails, and Wireworms.**—Paraffin of a less strength than one gill to the gallon will kill all insect life. A wineglassful to two gallons will be ample. I should not recommend salt now, as if given strong enough to kill snails it might kill the crop also. The cheapest and simplest plan is to obtain some brewer's grains and lay about in small heaps, visiting the place after dark with a light and destroying the enemy. Scattering a few sifted coal-ashes round any plants generally saves them, as the snails cannot travel over the jagged edges; they stick on their slimy bodies. A very thin sprinkling suffices.—H.

2449.—**Insects on White Thorn Hedges.**—The best remedy is the natural one, viz., to encourage the birds to build their nests in it and feed their young with the insects. An unlimited supply of soap-suds applied forcibly through a garden engine will be useful, and a simple remedy, and one easily applied, would be to dust it over with equal quantities of fresh lime and soot mixed.

2451.—**The Currant Caterpillar.**—Looking over the bushes in May and picking off the leaves on which the eggs are laid will probably be the best and cheapest plan to adopt another year. Take a peck of fresh soot, tie it up in a cloth, and sink it in a tub containing thirty gallons of water. Stir it occasionally, and at the end of three days drop in a lump of lime (about 2 lb.) to clarify it. Syringe the Currant trees in the evening with the liquid.—E. H.

2445.—**To make Skeleton Leaves.**—Mix a tablespoonful of chloride of lime in a liquid state with a quart of pure spring water, soak the leaves or seed vessels of plants in the mixture for about four hours, then take them out and well wash them in a large basin of clean water; after this they should be left to dry with free exposure to light and air. Some of the larger species of forest leaves, or such as have strong ribs, will require to be left rather more than four hours in the liquid.—JANE.

2448.—**Treatment of Grevillea robusta.**—There are few plants more easy to keep in good condition in a room than Grevillea robusta. It needs only to be supplied with water when necessary, and to have the foliage well washed once a week, and it will retain its beauty for years without even needing to be repotted. The best place for it is a light, well-ventilated apartment, which is kept quite cool, but from which frost is excluded during the winter. It will, however, thrive in a warm room where gas is burnt, but when thus placed take it out once or twice a week and well wash the leaves. Some of the lower leaves are sure to drop at this time; these may be removed, as they become unsightly; they will not be missed if the plant is otherwise growing freely. Nex

April the plant may, if so desired, be shifted into the next-sized pot, using a compost of half peat and loam. When the nights are warm place it in the open air, sprinkling it with clear water. Such treatment will have a most refreshing effect, and will endow any foliage plant with sufficient vigour to pass the winter in good condition. All plants intended to be kept in rooms during the winter should be as much exposed to the full air during the summer and early autumn months as their respective natures will allow of.—J. CORNHILL.

2456.—**Propagating Wistarias.**—These are propagated by means of layers. Strong young shoots of the current season's growth are chosen for the purpose, every other joint being cut about half through with a sharp knife, and fixed into the soil by means of a stout peg. During the summer roots will be emitted, and in the autumn the plants may be taken off and planted out. Layering may be performed either at the fall of the leaf or during March. As to soil the Wistaria is by no means particular, preferring, however, like most other outdoor climbers, a good sound loam. Where the natural staple is poor, gravelly, or parching, it should be taken out some 2 ft. in depth, to be filled up with a prepared compost of loam and a little good manure, road scrapings, leaf-mould, or any good material which may be at hand may be added to it well incorporated with the natural soil. Climbers of all kinds enjoy a free extended root-run in congenial soil, and seldom give a faithful idea of their worth and beauty unless thus circumstanced. The greater the pains taken to prepare the soil for the reception of the roots, the more satisfactory will progress be, not only during the first few seasons, but also in after years.—J. C. B.

2399.—**Plants for Photographic Studio.**—We cannot think of anything more suitable for the purpose than Euonymus japonicus. At the same time we should inform you that it is a matter of considerable difficulty to preserve in health hardy evergreens of any kind in a close apartment. During the summer months they require full exposure. The only way to obtain fair success is to give abundance of air at all times, occasionally taking the plant out and thoroughly washing the foliage.—B.

2442.—**Cultivating Indian Plants.**—The seedlings should be potted off when large enough to handle into small pots, in a well-sanded compost of fibrous peat. Keep them growing freely in a close warm house, shading from hot sun, but admitting as much light as possible. The Asparagus and Acacia should, towards the close of the summer, be placed in a somewhat cool, airy situation, and may be wintered in a temperature of 50° to 55°. Bixa orellana, when well established, does not demand a high temperature, and requires a somewhat free admission of air during the summer months. Without knowing what species of Clitonia and Bauhinia are referred to, the exact temperature and treatment cannot be indicated. A minimum temperature of 50° by night and 55° by day will, however, suffice to maintain the generality of them in health. During the summer months they prefer a position near the glass, where they get a portion of the sun's rays without being subjected to its full force. At the same time a moist, growing atmosphere must be at all times maintained around them, and the foliage should be occasionally sponged. In potting, the most perfect drainage should be given, and plenty of river sand should be used in the compost.—J. C.

2455.—**Raising Begonias from Seed.**—The great point in sowing Begonia seed, or, indeed, any seed, is to so place it when sown that it is not in any way affected by atmospheric fluctuations. If the soil becomes dry there is a great chance of the seed suffering at a critical moment, and unless watering is conducted with extreme care, there is, in the case of such minute seeds as those of the plant in question, considerable danger of their perishing from excess of moisture. Having filled the pot with proper soil, water it so that the whole body of it becomes thoroughly moistened, allow it to stand until superfluous moisture has drained away, and then scatter the seed thinly upon an even surface, and cover very thinly with fine soil or silver sand. Place the pot in a moist, shady, close situation, cover the pot with a piece of glass, placing thereon a piece of paper, keeping the seed quite dark until germination takes place. In this manner there will be no need to water; the soil should remain quite moist until the seedlings are above ground. If these instructions are carried out and the seed is good, almost every grain will germinate. I am, however, of opinion that the seed of Tuberous Begonias loses its germinative power much sooner than is the case with most other seeds; it is therefore highly imperative that it should be procured quite fresh. Buy your seed of some grower who makes a speciality of this plant, and who grows the seed he sells.—C., *Byfleet*.

—— Fill a 6-in. pot to within ½ in. of the rim with a mixture of good fibrous loam, leaf-mould, and sand. Sow the seed equally, cover with ¼ in. of compost, place a piece of glass over the pot, and then plunge in a gentle hot-bed. In six weeks it will be up. Seed sown now will make fine plants next spring for either exhibition or decorative purposes.—J. C. B.

2453.—**Lily of the Valley not Flowering.**—The Lily of the Valley should thrive and flower very well in the situation mentioned. It is a plant which grows naturally in moist, sheltered, and partially shaded places; at the same time, when large highly-developed crowns for forcing are desired, it is better to grow in more full exposure, and trust to rich deep soil and copious waterings to supply the necessary conditions. Where, however, flowers of average quality only are required, they may be obtained in almost any obscure corner of the garden.—C.

2454.—**Fuchsias for Greenhouses.**—Avalanche, Rose of Castile, Miss Lucy Finnis, Tryme-O, Earl of Beaconsfield, and Mrs. Marshall. These are six of the best Fuchsias that an amateur can grow, being distinct, of excellent habit, and profuse flowerers. Mrs. Marshall is an excellent forcing kind, being largely grown for Covent Garden Market. Rose of Castile may be had in bloom almost up till Christmas. Avalanche is the most free flowering dark double that I am acquainted with, and Earl of Beaconsfield is so distinct, that no collection should be without it. If any more were needed I would add Boliviana, an interesting and distinct kind, with handsome foliage and of graceful habit.—J. C.

2444.—**Irises from Morocco.**—The Iris in question is probably I. alata, a winter flowering species, and worthy of pot culture. We would pot them at once, keeping them in the open air until the middle of October, and then placing them under cover. They may not flower well the first year, owing to the removal, but will in all probability give a good show the following year.—B.

2457.—**Elder Trees from Cuttings.**—The insect might be one of the Snake Millipedes, and if so, it might have eaten the young succulent roots of the Elder cuttings. Lime, soot, and salt—the latter in moderate quantities—are beneficial applications for land infested with insects.—E. H.

2451.—**Gooseberry Caterpillars.**—If the Gooseberry or Currant bushes are standards, or can be made so, procure a thin rope in which there is a strand of horse-hair; tie it round the stems; it acts as a *chevaux de frise*—no caterpillar will pass it. I used the rope of an old casting-net.—M. P. D.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them again.

2534.—**Strawberry Runners.**—*H. H. H.*—To obtain Strawberry plants, peg down those runners which have plump crowns and plenty of healthy foliage. They are best pegged into 3 in. pots, filled with good soil. When you have chosen what runners you require, the others may be cut off; also all runners proceeding from those pegged into the pots.

2535.—**The Screw Pine in Windows.**—*W. G.*—The reason the young leaves are twisted is probably because the plant gets often moved, and the leaves in struggling for the light get twisted round. The plant wants to be in a glasshouse with plenty of heat and moisture in order to succeed well.

2536.—**Treatment of Yuccas.**—*Eliza.*—Very small plants are best grown in pots, so that they can be placed in a frame or greenhouse during winter. Very small plants are often a long time before they make rapid growth.

2537.—**Foxgloves.**—*A. B.*—These are perennials, and should flower every year. A few of the species are only biennials.

2538.—**Vegetables on Peat Land.**—I have some peat land that I am getting into cultivation. It has been trenched 2 ft. deep and the peat burnt. What vegetables may I grow? and what would be the best manure for such land?—D. J. T. [If you manure it heavily with good rotten farmyard manure now, well incorporating the manure with the soil, you might next year be able to grow Potatoes, Lettuces, French Beans and Scarlet Runners, Beetroot, and even Carrots, but you cannot hope to grow well such crops as Broccoli, Cabbage, &c., that require stiff land, until you can give the ground a good dressing of clay, marl, or stiff loam.]

Pear tree as trained in French gardens.

2539.—**Striking Rose Cuttings.**—*Roby.*—August is the best time to take cuttings. Shoots of the current year's wood with a heel attached are the best to take. Plant them firmly in sandy soil in a shady situation. See illustrated article on this subject in GARDENING, Aug. 9 last.

2540.—**Propagating Seakale.**—*E. B.*—Lift some of the old plants in January, and trim off the thongs, leaving only the straight stem. Then put these old plants into a box of soil in a cellar or similar place where it is dark, and you will get some early Seakale. Cut the thongs into 4-in. lengths, and plant them close together in a bed of light soil, covering them over 2 in. or 3 in. In March or early in April they will have commenced to grow, when they should be taken up and have all the buds rubbed off, except the strongest on the top of the root, and be planted in threes triangular fashion, putting them about 5 in. apart, each set of plants being 2 ft. apart.

2541.—**Budding Roses.**—*W. A. V. S.*—The Roses you mention, viz., La France, Duchess of Edinburgh, Jules Margottin, Madame Victor Verdier, and Mdlle. Annie Wood, are all good kinds, and will succeed when budded on Brier stocks. They also succeed as dwarfs either on the Manetti, or on their own roots. We should advise you to strike cuttings in autumn, and thus obtain plants on their own roots. The Cabbage Rose will do well budded on the Brier.

2542.—**Sweet Williams.**—*W. S.*—Seed of these may be sown now in rather rich soil in a shady part of the garden. When large enough, put out the plants where they are to bloom. The wet weather would probably be the cause of your plants rotting off, and your soil may be badly drained. Tall-growing kinds require some support when flowering, or rough weather will soon break them down. Get Hunt's or Dean's strain.

2543.—**Manetti Stock.**—*M. G.*—This is a strong-growing Italian Brier. You could doubtless obtain plants of it on which to bud Roses from any extensive Rose grower.

2544.—**Vegetables in Shallow Soil.**—*W. T. K.*—The reason the vegetables run to seed is because the good soil is so shallow, and they will not root in cold clay. Next winter trench the ground all over, bringing up a few inches of the subsoil, and incorporate it well with the top soil; also put into the bottom of each trench a good lot of rotten manure and some coal ashes, and well dig it into the clay. This should be repeated each year, and in time you will get a good depth of rich soil.

2545.—**Cucumbers Failing.**—*Amateur.*—Cucumbers that have been fruiting in a frame since April last probably need a little renovating. Give them a top-dressing of good rich soil, pick off all blossoms and fruit, and stop the shoots. Remove all weakly growths and peg the strong ones down. If there is any green fly on them, fumigate with tobacco for several evenings in succession. Keep a moist temperature, and doubtless the plants will recover their strength.

2546.—**Apple Trees as a Screen.**—*Ailenroc.*—Apple trees trained as espaliers would form a good screen in summer; in winter, of course, they would be bare. Cox's Pomona is an excellent sort for espaliers. Plant the trees 4 ft. apart, and train the shoots upwards, not horizontally. They will then soon cover the trellis. A strong wooden trellis painted would be better than a wire one.

2547.—**Asparagus Planting.**—*G. T.*—It is much better to plant young plants than old ones, as the latter seldom succeed after removal. Get two-year-old plants in spring.

2548.—**Cyclamens after Flowering.**—Is it necessary to keep the earth around Cyclamen corms moist after they have quite done flowering for the season?—J. H. M. [Give just enough water to keep the leaves from flagging.]

2549.—**Treatment of Maiden-hair Ferns.**—I have a very fine Maiden-hair Fern in a pot; what should be the treatment of it before winter?—W. V. [Keep it in a light but sunless place, and give it plenty of water. In winter less water will be needed.]

2550.—**Plants in Lumber Room and Attic.**—*Stag.*—In such places you can winter Fuchsias, Geraniums, and similar plants, but you could only grow plants in the windows.

2551.—**Pyrus japonica.**—What is the proper management of this on a wall? It covers a space of about 3 yds. and makes long shoots every year. I cut it in very close last autumn, and it has scarcely flowered this year. It is again covered with young wood about 1½ ft. to 2 ft. in length.—W. D. [Let the tree remain as it is, only nailing in the leading shoots.]

2552.—**Summer Pruning Fruit Trees.**—I have some thirty Apple, Pear, and Plum trees on a wall which I have trained as upright cordons. Having been absent from home since the beginning of May, I find they have made by this time a rampant growth, in some cases of 3 ft.—W. D. [Cut them back to three or four eyes. You need not remove them all at once; go over them two or three times.]

2553.—**Sowing Pansy Seed.**—*H. H. H.*—Pansy seed sown now will produce plants which will flower next spring.

2554.—**Forcing Asparagus.**—*H. H. C.*—If you obtain good plants from any nurseryman early in December, and plant them in a frame on a good hot-bed, you may easily get "Grass" fit to cut in January.

2555.—**Brussels Sprouts among Potatoes.**—This year I planted my Brussels Sprouts between rows of Potatoes, the latter being planted the usual distance apart from row to row to allow the Sprouts proper air. Owing to the season the tops of the Potatoes have grown beyond all bounds, and are choking the Sprouts, and will in time spoil them. Would you advise me to cut the Potato tops down to give proper air and light to the Sprouts? Such a course I have seen recommended when disease is attacking Potatoes.—AMATEUR. [We should not advise you to cut the tops off the Potatoes; rather go to the trouble of staking the Potato haulm up a little. This may be done by driving stout stakes 3 ft. or 4 ft. apart along each side of the row, and straining stout strings from stake to stake.]

2556.—**Celery Without Trenches.**—Will this succeed grown on the level ground? if so, what is the proper course of earthing up, &c.?—IGNORAMUS. [Celery will succeed well when planted on the level ground. When it requires earthing put a paper band round each head and put a drain pipe over them, filling up with fine dry soil or sand. If one drain-pipe is not sufficient, another may be placed on the top of it, driving a stout stake by the side to which to tie the pipes to.]

2557.—**Material on which to Stand Plants.**—What is best for material to put on the stage of a greenhouse for pots of Ferns and flowering plants to stand on?—J. A. [Broken sea shells or gravel, out of which has been taken the finest and coarsest portions. It should be well washed before use.]

2558.—**Pansies and Violas.**—What is the difference between "white selfs" and white grounds, and "yellow selfs" and yellow grounds?—OLD SUBSCRIBER. [If you had a black coat with white spots on it, the ground colour would be black; if a black coat without spots, it would be a black "self."]

2559.—**Writing on Labels.**—Which end of a label is it proper to commence to write from, the top or pointed end?—W. BENNETT. [In writing labels the writer should always begin at the top and write towards the pointed end.]

2560.—**Rose Suckers.**—About two months ago I planted some Rose bushes, and all the leaf-buds that were on them died off. They are now making fresh growth, mostly from the bottom part of the plants. I can tell which are suckers and which are not, as I suppose all suckers should be taken away.—SOUTH HACKNEY. [There is a great difference between the growth and leaves of the suckers and those of the Roses. Examine the plants and find out where they were budded; all below the part where the bud was inserted should be removed.]

2446.—**Flower Boxes** faced with fancy tiles require slips of wood rabbetted or grooved and screwed on top and bottom edges, mitred at the corners; rounding the top edges of the slips or bedding tiles in plaster is optional.

2561.—**Seedling Carnations to Flower in Winter.**—Pot them into 5-in. pots, and plunge them in ashes out-of-doors in an open sunny situation. Give them plenty of water, and house them when frost appears. Introduce into a warm house when the flower-buds show themselves.

2562.—**Sportive Foxgloves.**—*Mrs. Wm. S.*—The cultivated Foxgloves frequently produce abortive flowers. The flower you send is a combination of several buds which have developed into one cup-shaped blossom.

2563.—**Vines Scorching.**—*C. R. H.*—Young Vines exposed to the full sun are very liable to be scorched at this season when one day is all cloudy and the next all sunshine. Shade the young leaves slightly with thin canvas or a little whitewash rubbed over the glass, and give air early in the morning.

2564.—**Roses not Flowering.**—*Siward.*—Some kinds of climbing Roses take longer to reach a flowering stage than others. They will doubtless flower all right next year.

2565.—**Propagating Laurels and Laurustinus.**—*C. J. F.*—Take cuttings of the current year's growth in September or October, and plant them in firm sandy soil, or they will strike in spring when growth is about to commence. If taken off with a heel, *i.e.*, a piece of the old wood attached, the cuttings are more likely to strike.

3566.—**Tuberous Begonias Failing.**—*A Learner.*—The fact of your keeping the plants in a shady place, and then suddenly exposing both leaves and roots to the full blaze of the sun, will account for the leaves drooping. They should have been inured to the sun gradually.

2567.—**Lilium auratum after Flowering.**—*Cyclamen.*—When the stems have died down repot the bulbs in the same sized pots, removing most of the soil from their roots. Use turfy loam, plenty of silver sand, and some rotten manure or leaf-mould; withhold water until growth commences.

2568.—**Melons Damping off.**—*F. H.*—We cannot tell you why your Melons damp off without knowing under what conditions they are being grown. Probably it is for want of heat, or too little air, or both.

2569.—**Cyclamen not Flowering.**—*Cyclamen.*—Take the bulbs out of the pots, remove most of the soil, and repot in the same sized pot, using turfy soil and leaf-mould. Plunge the pots in a partially shaded situation; take indoors in autumn, and place them where they can get plenty of air.

The Best Winter Lettuce.—*Old Indian.*—The London Cos; All the Year Round is an excellent Cabbage Lettuce.

Twin Cucumbers.—*R. W. B.*—By no means uncommon.

QUERIES.

2570.—**Balsams for Show.**—I have strong healthy Balsams in 9-in. pots, which I intend to exhibit about the 1st of September. When should the last potting be made, so as to have them in full bloom by exhibition time? They are in an ordinary greenhouse, where they get plenty of light and air.—A GENERAL SUBSCRIBER.

2571.—**Window Plants.**—I am living close to the outskirts of a town where the air should be comparatively pure, yet my window plants loose all their leaves during the winter, consequently they cannot regain them in time for flowering properly. I keep them in a window facing due west, therefore they do not get any sun till late in the day. The flowers consist of Fuschias and Geraniums.—GEORGE WOOD.

2572.—**Forming a New Garden.**—Will any of the correspondents of GARDENING ILLUSTRATED kindly inform me how to go about forming a kitchen and fruit garden? I have purchased a couple of acres of land in Cheshire, and intend to lay out about half an acre in garden; the land is at present under Grass. The soil is a fair loam, about 1½ ft. deep, but with a clay subsoil.—NOVICE.

2573.—**Ants in Gardens.**—My garden is overrun with ants—some black, and others of a red colour. How can they be effectually destroyed and totally exterminated?—P. LL.

2574.—**Removing Moss from Stones.**—Can any reader tell me how to remove Lichens and weather stains from stonework?—JANE.

2575.—**Propagating Myrtles and Roses.**—I put in some cuttings of climbing Devoniensis about the middle of May in the way recommended by "Mark" (answer 1848), but all have failed. Will "Mark" kindly inform me at what time of the year he put in his Rose cuttings? how long they were in rooting? and, when that had taken place, whether they were put into pots or at once into the ground? Any information on raising Roses from cuttings will greatly oblige.—ELIZA.

2576.—**Copying Machine.**—In "Subscriber's" receipt for making a copying machine he does not mention what quantity of glue is to be dissolved in water with which to mix the other ingredients. Would he be kind enough to do this?—A TEACHABLE READER.

—— There appears to be a slight mistake in the receipt given in GARDENING ILLUSTRATED, July 3, and "Subscriber" would oblige by giving some further information. "Subscriber" says:—"Gelatine glue, 2½ oz.; water, 5 oz. Let the above soak together for twelve hours, then add glycerine, 5½ oz. (fluid); carbolic acid, minims x. Dissolve glue in water at a gentle heat in a jar in pan of water, then add the other ingredients." Must the glycerine and carbolic acid be mixed with the glue and water before the glue has been dissolved in the pan of hot water, or afterwards? and how long should the whole be kept in the pan of hot water? Am I correct in supposing that "minims x" means ten drops of carbolic acid?—C. H. A.

2577.—**Figs not Fruiting.**—I have a Fig tree in a greenhouse, and the soil is gravelly; it thrives well, but this year it bore no fruit. Perhaps some readers will kindly give some probable reason for it, and give instructions when to prune it and what shoots to dispense with?—J. B.

2578.—**Blight on Asters.**—My Asters are attacked by a kind of black fly; the effect on the plants is that of shrivelling the leaves, and it greatly retards their growth. Can any reader suggest a remedy?—JOHN E. CHEESE.

2579.—**Treatment of Auriculas.**—I have a number of seedling Auriculas ready for pricking out into pots Will some reader kindly explain their course of treatment? They are not the alpine variety. Will they bloom next spring?—JOHN E. CHEESE.

2580.—**Pansies for Show.**—Will some one suggest how Pansies should be arranged for exhibition, remembering that without plenty of moisture they soon fade—W. G. R.

2581.—**Heavy Strawberries.**—I have had fruit of James Veitch Strawberry this season which weighed 2½ oz. each. Is this an unusual weight for a Strawberry?—J. M. P.

2582.—**Unheated Glasshouses.**—I think of putting a glass roof, 3 ft. deep, against a garden wall, resting on iron brackets, leaving it open in front and at the sides, planting Chrysanthemums and Roses at the back, and in front Auriculas and Christmas Roses. Will some practical person say if this will improve these flowers and prolong their flowering? and if any other hardy herbaceous flowers would be the better for being planted under such a shelter, say Fuchsias? Would Tree Carnations stand the winter under such a roof, Malmaison, for instance? Ought I to have frames to cover in the sides with canvas stretched over, and leave only the front open? I shall be truly grateful for advice, and what would be the cheapest way to get the glass roof and fix it?—AILENROC.

2583.—**Apples and Pears for Town Gardens.**—Will any one give me the names of six good Apples and two Pears which will succeed in a town garden?—AILENROC.

2584.—**Disease in Cucumbers.**—I have lost three fine Cucumber plants from a disease which causes the stem to rot away just above the earth. Can any one tell me the cause and the remedy?—AVE.

2585.—**Mushrooms in Passages.**—Would Mushrooms grow in the passage to an ice well where all light is excluded? If so, would some reader kindly give me a few instructions as to the management of them?—G. B.

2586.—**Carnations and Picotees.**—Which are the best six sorts of each of above? If pipings of each be obtained now and struck, will they stand the winter?—IGNORAMUS.

2587.—**Roses for North Aspect.**—What six kinds of standard Roses would be best for planting in a northerly aspect on good mixed loamy soil in West Suffolk—good decided colours? and also those that come on in succession—some early and late preferred? When should they be planted?—IGNORAMUS.

2588.—**Plum Trees not Bearing.**—I have two Plum trees which I planted four years ago; they have grown about 12 ft. high against a wall facing south, are healthy and strong, but have not yet fruited or blossomed. Some of the branches are nailed to the wall, others grow straight out at right angles, with profusion of foliage. How and when must I prune them to induce fruiting? Does the fruit come on this or last year's wood?—HOLLOWAY.

2589.—**Fruit Falling from Trees.**—Perhaps some reader might be able to give some instruction how to improve Cherry and Plum trees which, after blooming well and setting their fruit, cast it off when it is about the size of Peas, leaving scarcely any on the trees. Mine have done so for the last seven years or more.—NOVICE.

2590.—**Roses not Blooming.**—I planted two Gloire de Dijon Roses two years ago last autumn; one has not yet produced a flower, the other has showed two this year. In a short space of time they threw shoots 2 ft. and more in length, with fine foliage. They are planted at the foot of a raised bed. My other Roses do well in the same position and soil. Will any one tell me how to get more bloom and less wood?—A CONSTANT READER.

2591.—**Roses and Beetles.**—My Roses are every year ruined by large green beetles. Although we kill thousands every summer, their numbers seem to increase year by year. Can any one tell anything about their habits, their resorts during the winter, breeding places, &c.?—W. R. BURGESS.

2592.—**Climbers for Winter Garden.**—I am erecting a winter garden in South Kensington, 30 ft. square, to be kept at a temperature of not less than 60°. I should be extremely obliged for a list of the best evergreen creepers to plant round the walls, which will be covered by trellis work.—H. B. F.

2593.—**Lilies Unhealthy.**—I should be glad to know why my Japanese Lilies are spotted, and the leaves showing signs of decay at the axil? One shoot on a plant will be quite green and strong, and others affected in the way described. Is green fly responsible? I can think of no other cause. This applies both to plants in pots and in the ground.—LILY GROWER.

2594.—**Grubs in Carrots.**—I have had two beds of Carrots destroyed within the past ten days by a little white maggot about one-fourth of an inch long. Each Carrot contains about one hundred of them; they seem

to have commenced to bore at the point of the root and worked up to the top. Perhaps some reader will be kind enough to give a remedy for the destruction of the above insects: also, would they be injurious to any other crop put in the same ground?—J. M. G.

2595.—**Drosera rotundifolia.**—What is the summer and winter treatment of this plant, particularly the latter, as it seems difficult to preserve so as to come up again?—M. Davey.

2596.—**Sowing Annuals and Perennials.**—I have a large garden near London very open and exposed to the street, and often to a cutting wind. Some parts of it, however, are protected. I should like some one to tell me what seeds of hardy perennials I should sow now to yield plants to flower next year. May I safely sow annuals in the autumn, where they are to grow? and what kinds?—Talbot.

2597.—**White Worms in Carrots.**—Can any one suggest a remedy for this? My crop of Carrots is being entirely destroyed.—Monaghan.

2598.—**Blood and Bone Manure.**—How should blood and bone manure be used, and in what quantity?—Subscriber.

2599.—**Marsh Sundew.**—Can any reader give me any information as to the cultivation and habits of this interesting little plant?—E. C.

THE HOUSEHOLD.

STRAWBERRIES.

Strawberries, now plentiful, are usually in season from June to July. Plants forced in spring often fruit in the open air in autumn. The Quatre Saisons, a small and good fruit, bears through the summer and autumn. The Grove End Scarlet is one of the best for preserving, whilst for dessert purposes none are equal to the British Queen. Sir Charles Napier and Sir Joseph Paxton are the best for general culture, as they are good for either dessert or cooking.

Strawberries and Cream.—Procure the fruit when it is freshly gathered and just ripe. If it is not to be eaten immediately, keep it in a cool place till wanted; but the fresher it is the better. Do not wash the berries unless it is absolutely necessary. If, however, they are dusty or not quite fresh, they may be cleansed and freshened by passing them quickly through a basin of cold water. They should not be allowed to remain in it one instant. If the Strawberries have been gathered in rainy weather, it is very desirable that this cleansing process should be performed. Strawberries are very delicious served with thick cream and finely-powdered sugar. These accompaniments should be sent to table separately, as if the sugar is put upon them even for a short time it will draw out their juice and change their colour.

Bottled Strawberries.—Gather the Strawberries in dry weather when they are ripe, but not over-ripe. Pick them without bruising them, and put them into perfectly dry wide-mouthed bottles. Shake them down, and fill the bottles with clear syrup made by boiling three-quarters of a pound of refined sugar with half-a-pint of water. Cork the bottles tightly, and tie them down. Wrap straw round them to keep them from being broken, and put them into a large stewpan with cold water up to their necks. Let the water be made to boil, then draw the pan to the side, and let it simmer gently for ten minutes. Take the pan off the fire, and leave the bottles untouched till they are cold. Refit the corks, tie them down again, if necessary wax them over, and store for use. Time to simmer, ten minutes.

Strawberries for Flavouring.—Gather the fruit in dry weather, pick it from the bolls, discard any bruised or unsound berries, and weigh it with an equal weight of finely-powdered sugar. Fill perfectly dry wide-mouthed bottles with alternate layers of fruit and sugar, and shake them gently to mix them. Cork the bottles closely, and cover the corks with bladder which has been cleaned, dried, and moistened with spirit on the side which is to be next the cork. Store in a cool dry place. The Strawberries should be perfectly fresh when they are thus preserved.

Compote of Strawberries.—Take a pint of freshly-gathered ripe Strawberries. Pick them and put them into a bowl. Pour over them a little clear syrup which has been made by boiling a quarter of a pint of water with five ounces of sugar for ten minutes. Cover the bowl containing them with a plate, and let them stand for an hour or more. Drain off the syrup; boil it for a few minutes, skim it, and strain it over the Strawberries piled in the centre of a compôte-dish. The flavour of this dish will be greatly improved if a wine-glassful of Red Currant juice is added to the syrup. When it is at hand a glass of maraschino may also be added with advantage. For a superior dish, the syrup, after being flavoured with maraschino or kirschenwasser, may be set in ice till it is almost frozen, and in this condition poured over the fruit. Time to soak the Strawberries, one hour.

Preserved Strawberries.—The fruit must be gathered in very dry weather. The stalks must be left on. Place the Strawberries upon a china dish without touching each other. Strew over them double their weight of sifted loaf sugar. Have ready also some very ripe Strawberries with their stems picked off. Bruise these in a basin into a mash, and mix with them their weight in sifted sugar. Stand the basin well covered in a stewpan of boiling water. Place it over a slow fire, and there let it remain until the juice of the Strawberries is drawn out and begins to thicken. Strain this juice through a muslin rag into a pan, pressing the pulp well; boil and skim it, and let it cool. When cold, put the whole Strawberries into this syrup, together with all the sugar strewed over them. Place them on a stove till they become a little warm; take them off and let them cool, then heat them again. Continue this several times until they are clear, warming them gradually, but taking care that they never approach a boil. If ever you perceive a tendency in any of them to break, remove them instantly from the fire, and do not replace them on it until they have become quite cold. When they are sufficiently clear, put them with great care into pots.

Strawberries Preserved in Wine.—Take the fruit when perfectly ripe and fresh; pick it, and put it immediately into dry wide-mouthed bottles. Sprinkle amongst it four ounces of powdered sugar with each pound of fruit, and let the bottles be filled to the neck. Pour in good sherry or Madeira to cover the fruit. Cork the bottles securely, wax them down, and store in a cool dry place.

Strawberries Preserved Whole.—Take perfectly sound ripe Strawberries which have been gathered in dry weather; pick and weigh them. Put them in layers on a large dish, and sprinkle finely powdered sugar between the layers—a pound of sugar will be required for every pound of fruit. Let them stand all night. Next day put the whole gently into a clean preserving pan. Let it boil; shake the pan to keep the Strawberries from burning, and pass a spoon round the edges, but be careful not to crush the fruit. Remove the scum as it rises, and boil the fruit gently for a quarter of an hour. Drain the juice from the berries, and boil it separately for half an hour. If liked, a pint of Red Currant juice boiled to syrup with half a pound of sugar may be added for each pound of Strawberries, and this will greatly improve the flavour of the preparation. Pour the boiling juice upon the fruit, put both again into the pan, and boil the mixture for a quarter of an hour, or till the juice will set when a little is put upon a plate. Put the preserved fruit into jars, cover in the usual way, and store in a cool place. Strawberries preserved thus are very good served in glasses mixed with cream.

Strawberry and Custard Pudding.—Take four ounces of finely-grated bread-crumbs. Place four tablespoonfuls of Strawberry jam in a buttered pie-dish, cover this with the bread-crumbs, and add some good nicely-flavoured custard made with a pint of milk, two eggs, and a little sugar. Stir the custard over the fire till it begins to thicken, pour it gradually upon the bread-crumbs, and bake the pudding in a moderately heated oven. Time to bake, half an hour.

Strawberry Blancmange.—Take a quart of clear stiff blancmange made with isinglass or gelatine. Sweeten this, and stir into it the juice which has been drawn from a quart of fresh Strawberries. Mix the ingredients thoroughly, put the blancmange into a damp mould, and leave it in a cool place till set. Turn it upon a glass dish, and serve. To draw the juice from the Strawberries, pick them, spread them on a large flat dish, and sprinkle over them about six tablespoonfuls of powdered sugar. Let them stand for six or eight hours, and pour away for use the syrup which has flowed from them.

Strawberry Cardinal.—Hull a quart of ripe, finely-flavoured Strawberries, and discard all berries that are unsound or bruised. Sprinkle upon them a pound of powdered and sifted sugar, and pour over them half a bottle of Rhine wine. Cover closely, and let them stand in a cool place for half an hour. Just before they are to be served, pour over them the remainder of the wine, with another bottle, either of Moselle or of the same wine. Add a bottle of seltzer and serve. If liked the liquor may be strained and bottled for use.

Strawberry Cheesecakes.—Take a quarter of a pint of ripe, finely-flavoured Strawberries, measured after the stalks have been picked from them. Bruise them thoroughly with a wooden spoon in a basin, and mix with them a heaped tablespoonful of powdered sugar and two well-beaten eggs. Line some patty-pans with good pastry, three-parts fill them with the mixture, and bake in a well-heated oven. If fresh fruit cannot be had, Strawberry jelly may be used instead, and then no sugar will be required. Time to bake, ten minutes.

AQUARIA.

MAKING AN AQUARIUM.

Some few months back I was desirous of making a tank for my fish &c., and to give them as near as possible an approach to their original habitation, I proceeded in the following way:—Obtaining a sheet of zinc measuring 31 in. by 24 in., I cut and bent it into the shape of a large oblong square box without a top. By allowing a depth of 7 in. for the sides, I had a tank of 24 in. by 17 in. I fastened Virgin cork to its inner sides with Proutts' elastic glue, which, as far as my experience goes, never taints the water or does injury to the fish. A small movable fountain is fitted up in the centre. An inch from the top a waste pipe is inserted; also in the bottom is fixed a piece of 1-in. pipe with a water-tight cap, which on being removed allows the water to run out in a very short time for the purpose of cleaning the receptacle out. The bottom is bestrewed with road-grit and shingle, and a few aquatic plants are placed in the cork. The tank has one side resting on the sill of a window at the back of the house, the others being surrounded with a flower-box constructed the same depth as the aquarium, and the outside is decorated with rustic woodwork. The whole is under glass and in a south-eastern position, thereby receiving the benefit of a few hours' morning sun in bright weather. Convolvuluses, Ferns, Mignonette, and the Canary climber are growing in the box surrounding the tank. I may here mention that I have continually used Virgin cork decorations for my aquariums, and have not found that it affects the water or fish in the least. Before placing new cork in the tanks I sunk it in water for a week, and this doubtless was the means of drawing off any offensive matter the cork contained; and when taken out and thoroughly dried in an oven, fastened it in the way indicated. To fit this up the expense has been from 3s. 6d. to 4s., the sheet of zinc costing the most, viz., 2s. Here, then, is a method by which anyone who has a few spare shillings may have a fish-pond in miniature. Certainly the inhabitants are not seen to advantage, as in a square or round aquarium; but what matter? Such a contrivance is a fair imitation of what they once inhabited, as all light proceeds from above, and not all round, as is the case with ordinary aquariums, when too much will often injure the fish. I find my minnows and carp enjoy their new home exceedingly, and appear quite healthy. If at any time I find they are covered with a white film, I catch and place them on a little silver sand in a plate, with which they soon get smothered, then lightly press one finger on the head of the fish and draw another tenderly up and down the body a few times and then set them free again, and when the sand falls off the fish are quite clear of film. I have done this many times, and have had no fatal consequences arising therefrom. For the newts a piece of cork is kept floating on the surface of the water upon which they can crawl, and this they highly appreciate. I feed these pets on worms, shreds of raw beef or mutton, pills of flour and water, and twice a week throw in a small quantity of Roberts's food for gold fish and minnows, which may be purchased at 2d. per

packet, and this they seem desperately partial to. A few weeks ago I brought home about thirty sticklebacks from a running stream in the country, and out of that number only two have survived; and I have come to the conclusion that this species must be either very delicate and die on account of removal, or else because the London water is so different from brook water. I feel sure it cannot be for the want of vegetation in the tank, as I have sufficient of that. I placed a few river minnows in an aquarium in company with six or eight young tadpoles, and shortly after I found the fins and tails of the minnows bitten off, and some nearly to the flesh. If any one can tell me through these columns if the probability is that the tadpoles did the mischief, I shall feel obliged. Nothing besides was placed in the water with them. NEWT.

BEES.

WE hear great complaints in many directions as to the loss of queens consequent upon the destructive nature of the past year's weather; and now many, finding that their bees are active about the mouth of the hive, but seem neither to work nor inclined to swarm, learn, on examination, that there is no queen bee, and that the stock is practically good for nothing. If it were possible to provide queens for such forlorn stocks, a great benefit would result; but that is not an easy matter, as spare queens are rarities. To ascertain the condition of a doubtful looking stock, it is well to prevent the bees from coming outside in the mornings, and when convenient obtain a piece of the fungus commonly used for the purpose, set it on fire, and place it just within the entrance. The fumes will soon make the bees insensible, and when so the hive may be lifted off and the bees thrown out upon a cloth spread on the ground. They then may be examined as well as the comb within the hive, and if a queen is not to be found, then the hive or stock is useless, unless a strange queen can be provided. If this is not possible, then it will be advisable to endeavour to unite the old stock with another that has a queen, but is perhaps weak, and to accomplish this it will be necessary to simultaneously send both stocks to sleep as before, throw each lot out together upon a cloth, and stand over them, tilted partly on one side, the hive which held the stock having the queen bee. The two stocks will then as they revive unite in the one hive, and most probably will agree to live in peace. In the case of strong stocks, whether old or new, it is time that supers were placed on the hives, to prevent if possible further swarming, and to secure the best of all the honey, which in the supers is pure virgin and of the finest quality. A. D.

I shall be glad if some practical bee-keeper will give me a few hints in GARDENING respecting the practice of stupifying bees by means of burning fungus, &c., as my first experience has been most unfavourable, having lost my best stock. On the eve of swarming I gathered 13 lb. of delicious honey, but at the expense of days of great suffering to the industrious insects before their final collapse. I proceeded as follows: Procuring a shilling packet of fungus from Messrs. Neighbour and Sons, I followed their directions by igniting one half the quantity in a empty hive, over which the full one to be plundered was placed, and soon heard the bees dropping into the lower one. When all was quiet I separated the hives, expecting to see nearly the whole of the bees below, but found only about an eighth part of them. The combs of the full hive appearing to be closely packed, I carefully removed the stupified bees from the empty hive, and again placed the full hive over it, burning the second half of the packet, the result being as at first, viz., the stupefaction of about one-eight part of the bees only. I was obliged to repeat the operation five times, using latterly brown paper, as my fungus was quite exhausted, and even then, when I turned up the full hive and allowed it to remain exposed to air and light, about 500 poor suffering bees crawled out, covered with honey, having tried to escape the fumes by hiding in the half-filled cells. Well, I placed the hive into which I had introduced them on its stand, expecting to see them active enough next day, but only a dozen made their appearance, and these wretchedly ill. The next day after about fifty crawled out, but soon dropped to the ground, and this they continued to do until the ground around the hive was covered with half-dead bees. When revived by a warm sun they seemed active enough, but could not fly far, and when placed in front of the hive crawled in more dead than alive. Even the most active in the hive would suddenly run out, as if frantic, and drop from the hive board. Upon raising the hive yesterday, a week after operating, I found that they had eaten the honey I placed for them, crawled out, and left but about sixty behind. These poor insects tried to hide in the empty cells of the comb I had introduced, but pity, not cruelty, induced me to drown them. But two dead bees —drones—were in in the hive.

Is this a fair sample of the humane system? If so, by all means let us continue to smother the bees outright. If not, what was the cause of my failure? Can any one tell me? Was the brown paper hurtful? If so, the first two lots should have recovered, as none was used to them; besides, the bees out for the day escaped the smother altogether. Why should they all die, or so nearly die, that it was a mercy to kill them?

I continue to find half-dead bees upon the lower leaves of shrubs 10 ft. from the hive.

NOVICE.

Book on Bee Keeping.—*Cottager.*—"Manual of Bee Keeping," by John Hunter. London: Macmillan & Co.

POULTRY.

Cramp in Chicks.—Cramp in chicks at this time of year must arise from some error in feeding. Probably their food is too soft, and they have not sufficient access to sand and small gravel, without which they cannot digest their food. For the first week after chicks are hatched they should be kept to split grits and hard boiled egg, mixed with stale crumbled bread; the second and third week substitute whole grits, with one meal a day of Spratt's Poultry Meal, and after that they should be ready for good sound Barley twice a day, Spratt's food once. Chicks should never be allowed to run on damp ground till after the third week. If very delicate, bread soaked in ale with a pinch of Cayenne strengthens them.—C.

Disease in Fowls.—Two sources of disease in fowls are, want of Grass or green stuff and a dust bath. I throw all the Grass of a small plot to the fowls; not one ever fails. I have forty-five in a space of 100 square yards.—MABOR.

Malt Dust for Fowls.—Can any reader tell me if malt dust is a good thing to give to fowls? if so, in what quantities must I give it them? and with what mixed if not alone?—G. A. F.

Ventilating Hen Houses.—I have built a hen house, 9 ft. long, by 5 ft. deep, by 4 ft. broad, and should be glad to learn a simple way of ventilation. Would an open space top and bottom of the door covered with perforated zinc be efficient? How many fowls should be put in a house of that size?—C. W.

Rats in Fowl Houses.—I have a fowl house built of wood surrounded with walls of turf, but unfortunately am much troubled with rats. I have lost many chicks through them. Can any one advise me as to the best way of getting rid of these pests?—H. BULL.

Cats Killing Chickens.—May I suggest a plan to cure cats of chicken-killing which I find successful? It is to catch the culprit and shut it in a small space with a hen who has chickens; if of game breed so much the better. She will generally give the cat such a lesson, that nothing will persuade it to approach the chickens again, especially if a good ducking in a bucket of water follows the performance. I am so pestered with my friend's "pet animals," that I was obliged to get a legal opinion, and was told I was justified in killing cats caught destroying poultry; but of course a friend's "dear tom" must sometimes be spared. I find a terrier with "cat-killing" reputation is a great preventive.—H. B. A.

Dropsy in Fowls.—All high-bred chickens are subject to swellings on different parts of the body. It is a skin affection, and the swelling does not contain water, but air. I have found Spanish chicks especially troubled in this way, and always just before the formation of the quill feathers. I have never lost one since adopting the following treatment: Give the chick a small teaspoonful of castor-oil, containing as much flour of sulphur as will lie on a threepenny-piece, and rub dry flour of sulphur thoroughly into the skin of the bird, especially under the wings. If the swelling is very large, it may be pricked with a needle.—C.

Eggs Without Shells.—Every morning on going into the chickens' house I find under the perch a shell-less egg attached to the dung, and it appears to be emitted with the dung; sometimes it has no yolk, sometimes it is a perfect egg minus the shell. It is not for the want of mortar, bones, oyster shells, or such like, for we have splendid eggs, usually with shells hard and thick.—J. H. B.

Single or Double Combs in Cockerels.—This depends entirely on the breed, A Spanish cockerel with a double comb would be worthless, and a white rose comb Dorking with a single comb equally bad. With cross breeds it is quite unimportant, as they are of no use for show purposes.—C.

Turkey Eggs.—Turkey eggs can be hatched under hens, but it is best to let turkeys hatch their own eggs. It is rather late to sit them now, but we should try some.

HOME PETS.

Canaries Losing their Feathers.—As to the cause of canaries casting their feathers at a wrong time, it is most probably from the birds living in a draught; nothing throws them into the moult so soon and prevents their singing. This is about the season they begin to change their feathers, though rather too early. When moulting canaries do not sing, but begin again in September if placed in a good situation out of draughts and gas. The irritation is from their new feathers coming. Rape and canary seed mixed ought to be the best food; now and then Groundsel, Chickweed, Lettuce, Shepherd's-purse, Celery, and Apple. During breeding and moulting season, a little hard-boiled egg chopped up with some soaked bread (all water well squeezed out), and a small pinch of Maw seed once or twice a day. Care must be taken to keep the cage clean, and plenty of gritty sand and fresh water; a bath they require every day if they will take it.—P.

King and Queen Parrots.—Will "A. D'A.," who gave a description of the king and queen parrots in GARDENING for October 25 last, kindly say where a queen parrot can be obtained? I have a fine king parrot, and would like to find him a mate. Also of what country are they natives? what kind of nest-making materials they will require? if the young require any particular kind of food? and if the parrots will live out-of-doors during the winter? I have also a light green parrakeet with red beak, smaller than the king parrot. Can "A. D'A." tell me its name, and from what country it comes? Also if it and the king parrot ever learn to talk?—E. M. H.

Tortoise in Gardens.—Can any reader give me an idea of the habits, likes, or dislikes of the tortoise? I bought one some days ago and put it in the garden. Beyond that I know little or nothing; have given it soaked bread, which I do not think it has touched. Should it have a dry place to go in to sleep on out of the rain? and in winter do they bury themselves, or ought they to be brought into the house? The only apparent object of this one is to hide itself.—K. A. H.

Rabbit with Matted Hair.—My son has fancy rabbits, and of five young ones one (the male) has a very long white coat, which, from its length, we suppose has got matted. What can be done? He has put him in a hutch alone, thinking the four others for warmth laid too close to him. He has pink eyes and would be lovely if it were not for his long matted hair.—MIGNONETTE.

Canary Mopish.—I have a canary which till lately has always been in very good health. About a month ago I discovered lice on the water in which he washes. This last week I have seen nothing of them, but he is mopish, rough in plumage, and his breath is short and sharp. When he is sleeping, he seems as though he would tumble off his perch with every breath he draws. He is hanging in a sunny window free from draughts and eats well. He does not appear to be moulting. What should I do with him?—BLUEBELL.

Food for Birds. If "J. R. B." will refer to GARDENING ILLUSTRATED for June 5, he will find an answer to his question on strengthening food.—FERNDALE.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.—*Per dozen bunches.*—Anemone, 2s to 6s; Azalea, 4s to 9s; Cineraria, 6s to 12s; Ferns (various), 3s to 9s; Heliotrope, 6s; Lily of the Valley, 4s to 12s; Lilac, 2s to 8s; Mignonette, 4s to 9s; Narcissus, 6s to 12s; Pelargoniums (zonal), 3s to 6s; Pelargoniums (large flower), 6s to 12s; (double), 6s to 12s; (Rose-scented leaf), 6s; Spiræas, 6s to 12s; Tropæolums, 1s to 3s; Tulips, 4s to 9s: Violets (blue), 1s to 2s.—*Per dozen flowers.*—Abutilon, 4d to 6d; Arum Lilies, 3s; Tree Carnations, 1s 6d to 3s; Eucharis, 4s to 6s; Gardenias, 2s to 8s; Roses, 1s 6d to 6s.—*Per dozen sprays or trusses.*—Bouvardias, 1s 6d to 3s; Fuchsias, 2s to 4s; Primulas (double), 9d to 1s; Stephanotis, 2s to 4s.

Plants in Pots.—*Per doz.*—Arum Lilies, 9s to 12s; Adiantum cuneatum (ordinary), 6s to 18s; Begonias (flowering), 6s to 12s; Begonias (fine-foliaged), 6s to 12s; Bouvardias, 12s to 18s; Cineraria, 4s to 12s; Daphne indica, 4s to 6s; Dracæna (green-leaved kinds), 12s to 30s; Euonymus, 4s to 12s; Euonymus (variegated), 6s to 18s; Ferns (greenhouse and stove, various), 6s to 18s; Ficus elastica, 18s to 60s; Fuchsias, 6s to 12s; Gardenias, 24s to 36s; Lily of the Valley, 12s to 24s; Mignonette, 6s to 9s; Nasturtium, 3s to 6s; Palms (small), 18s to 60s; Pelargoniums (fancy), 9s to 24s; Pelargoniums (scarlet), 4s to 9s; Pelargoniums (double), 6s to 12s; Roses (hybrid perpetual), 12s to 24s; Spiræa japonica, 6s to 18s; Selaginellas, 3s to 4s; Virginian Creepers, 6s.—*Per pair.*—Maiden-hair Ferns (large), 4s to 7s; Palms (large), 15s to 42s; Amaryllis, 1s 6d to 3s each.

Fruit.—Apples (culinary), per bushel and barrel, 9s to 30s; Cobs and Filberts, per 100 lb, 120s; Grapes (English hothouse), per lb, 2s to 6s; Lemons, per box, 30s to 35s; Oranges (various kinds), per 100, 8s to 16s; Pomeloes, per dozen, 3s to 6s; Pine-apples (St. Michaels), each, 5s to 15s; Pine-apples (English hothouse), per lb, 2s to 3s; Strawberries per lb, 9d to 2s; Gooseberries per qt, 3d to 6d.

Vegetables.—*Per* 100.—Asparagus, 3s to 5s; French Beans, 9d to 1s. *Per dozen bunches.*—Carrots (outdoor), 4s to 5s; Watercress, 6d to 8d; Leeks, 1s 6d to 3s; Mint, 4s to 6s; Parsley, 4s; Turnips, 1s to 1s 9d; Radishes, 9d to 1s; Herbs, 2d to 6d. *Per doz. punnets.*—Cress, Mustard, or small salad, 2s. *Per dozen.*—Cucumbers, 4s to 7s; Endive, 2s to 3s; Lettuce, 6d to 1s. *Per bundle.*—Horseradish, 3s to 6s. *Per lb.*—Shallots and Garlic, 6d; New Potatoes, 1d to 3d. Chervil, per punnet, 3d; Corn Salad, per half-sieve, 2s; Mushrooms, per pottle, 1s 3d to 1s 9d; Potatoes (general store, round kinds), per ton, 100s to 200s; Kidney, per ton, 120s to 180s; Parsnips, per tally, 5s to 7s; Rhubarb (per dozen bundles), 2s to 3s; Spinach, per half-bushel, 2s 6d; Tarragon, per bunch, 6d.

GARDENING
ILLUSTRATED.

VOL. II.—No. 72 *SATURDAY, JULY* 24, 1880. PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

THE CALIFORNIAN AND OTHER LILIES.

THERE is now such a variety of Lilies, that a really beautiful garden may be made of them alone. Many of the kinds commence blooming early in June, and others keep up a succession till far into the autumn. Thus with a number of well-selected kinds a fine display may be had for at least five months in the year. Lilies again possess other advantages besides variety of flower and long continuance of bloom—they grow of all heights, so that they can be used in any position. Beginning with such kinds as L. Thunbergianum, which yield blood-red and apricot-coloured blossoms when little more than 1 ft. high, we can have kinds gradually increasing in height till we reach the fine spotted crimson and orange-flowered L. pardalinum, which attains a height of 8 ft. in good soils. A

HUMBOLDT'S SPOTTED ORANGE LILY (LILIUM HUMBOLDTI).

visit just now to the Hale Farm Nursery is well repaid if only to see the collection of Lilies, which are just now at their best. We never remember seeing the North American, and especially the large Californian, kinds so grand as they are there this season. Of L. pardalinum there are large masses in full flower, ranging from 5 ft. to 7 ft. high, and the gigantic form of it, named Robinsonianum, is even taller and more robust. L. californicum, too, has attained remarkable size and vigour, and is unsurpassed in brightness among all the forms. A late-flowering variety, named by Mr. Baker Bourgæi, is a very desirable one, though the buds are not yet expanded. The stately L. giganteum is likewise finely in flower, some specimens being furnished with fifteen flowers, all bright and perfect on a stem about 5 ft. high. L. Browni, perhaps the finest of all Lilies, is unusually fine this season, the large beds of it now in flower at Tottenham being a sight well worth seeing. It yields large, chocolate-coloured buds, which, when they expand, reveal a perfect trumpet-shaped flower of ivory whiteness. The old Martagon and its numerous forms, including the handsome dalmaticum, album, Cattanæ, &c., are still in perfection, as are also the late varieties of L. davuricum, Thunbergianum, and others of a similar type, together with the rarer L. philadelphicum and L. canadense in all its varieties, including the distinct-looking L. parvum. These are all in fine flower, as is also the singular-coloured L. testaceum. The beds of L. Krameri have for some time been very attractive, and presently L. longiflorum and its varieties will be equally showy. The noble-looking L. Humboldti grows remarkably fine in the stiff soil here, and is just expanding its large pyramidal heads of flowers.

The following is a list of Lilies in flower near London during the past week :—

Lilium concolor	Lilium auratum
Szovitzianum	canadense
pomponium	parvum
pulchellum	Parryi
davuricum	giganteum
monodelphum	Humboldti
carniolicum	japonicum
Martagon & vars.	croceum
umbellatum	Browni
elegans	pardalinum
columbianum	californicum
Krameri	Thunbergianum

HARDY BORDER FLOWERS.

THE hardy herbaceous border is the best feature of the flower garden, though commonly regarded as the worst. When well made, well stocked, and well managed, it presents us with flowers in abundance during ten months out of twelve, and in the remaining two blank months offers some actual entertainment, and many agreeable hints of pleasures to come, to make an ample reward for the comparatively small amount of labour its proper keeping will necessitate. Given a few trees and shrubs, a plot of grass, and comfortable walks, the three first essentials of a garden, and a collection of hardy herbaceous plants is the fourth essential feature, and may be the last; for the bedding system may very well be dispensed with in a homely place, provided the hardy flowers are admitted and cared for according to their merits. It may be that many a reader of this will be disposed to question whether Pelargoniums should be swept away to make room for Lilies, and Verbenas denied a place because of the superior claims of Phloxes, but such a question we do not propose; our business is to point out that the bedding system is an embellishment added to the garden; the herbaceous border is a necessary fundamental feature. Therefore we ask for the establishment of a collection of herbaceous plants before preparations are made for a display of bedding, and our advice to those who love their gardens and walk much in them, and find amusement in watching the growth of plants, and in contrasting their various characters and attractions, is, that they should seek to develop the herbaceous department, and so become acquainted with its full capabilities. In this pursuit enthusiasm may be manifested without incurring the reproach of reason, for it is a truly intellectual pastime, and demands the practice of patience and the exercise of thought in no small measure from those who would know more of it than appears upon the surface. Let us for a moment consider the claims of the herbaceous border to better regard than is usually bestowed upon it.

It is an important characteristic of the herbaceous border that its proper tenants are hardy plants that need no aid of glass or fuel for their preservation during the winter. In the cultivation of bedding plants we may fairly reckon on a brilliant display for three months, and it may extend to four—say from the 1st of June to the 30th of September, but the herbaceous border will be gay from the end of April, or long before that, to the middle of October, a period of six months, and will offer us a few flowers in February, and a few in November and December, and in a mild winter will not be utterly flowerless even in January. It would be an exaggeration to say that the herbaceous border is capable of a display of flowers all the year round, but it is very nearly capable of a consummation so devoutly to be wished. To the advantages of hardiness and continuity of bloom must be added a third and grand qualification of a distinguishing kind—that of variety. It is scarcely an exaggeration to say that the varieties of form, colour, and general character amongst hardy herbaceous plants is without limit; but, as variety can be obtained amongst ugly plants, we are bound to add that the proper occupants of the garden we are considering are all beautiful, and a considerable proportion are well-known favourites. Nevertheless it must be admitted that with all their good claims to loving regard, the hardy herbaceous plants obtain but scant attention, and tens of thousands of persons who know that Verbenas are somewhat showy when in flower, and would like to grow thousands of them, are prepared any day to ignore the whole tribe of herbaceous plants as weedy things that have had their day, and, with the exception of a Lily or two, and perhaps a Hollyhock, deserving of a place only in the unsavoury hole where Grass-mowings and the sweepings of the poultry house are deposited with a view to a "mixen." It ought to be needless to attempt this vindication, but we feel bound to urge that every rational development of the hardy garden will prove advantageous to the lover of flowers, as tending both to lessen the expense and labour which the keeping of a garden necessitates and considerably augment the pleasures that it is capable of affording as the seasons change and the year goes round.

As hardy herbaceous plants of some kind or other will grow in any soil and any aspect, not one single square foot of ground in any garden need be utterly barren. A tuft of Solomon's Seal in a dark spot where the soil is quite unfit for better plants may be better than nothing. Sunny, shady, hot, cold, dry, moist, or even wet positions have their several capabilities for hardy plants, and we have but to make our selections prudently to ensure a plentiful clothing of herbage and flowers for every scene. But an herbaceous border designed for a good collection of plants should consist of good deep loamy soil; the greater part of it should be fully exposed to sunshine and breezes, but it is well to have some extent of ground partially or considerably shaded to provide the greatest possible variety of conditions for the greatest possible variety of the forms of vegetation. In preparing a border, in the first instance the ground should be well dug two spits deep, and at the same time liberally manured. In the case of an old border requiring improvement, it may be well to lift all the plants and "lay them in" safely while the border is trenched and manured; or it may suffice to leave the good plants undisturbed and provide sites for additional planting by opening holes and digging in plenty of manure. In any case we would earnestly advise that herbaceous plants should be thoroughly well cultivated, even if, to do full justice to them, the bedding display has to be contracted or abolished. The majority of the best herbaceous plants—Hollyhocks, Phloxes, Lilies, Tritomas, Delphiniums, Pinks, Chrysanthemums, Primulas, Pyrethrums, Potentillas, Anemones, Ranunculuses, Irises, Œnotheras, Foxgloves, Campanulas—require a deep, rich, well-drained loam, but will grow well in clay that has been generously prepared, and need not be despaired of altogether where the soil is shallow and sandy, provided there are appliances available in the shape of manure, mulchings, and waterings, to sustain them through the hottest days of summer. It must not be forgotten, too, that if the herbaceous border is formed on a somewhat good soil—say a soil that will grow a Cabbage—and in a position open to the sun and the health-giving breezes, it may be enriched by the addition of Roses, Stocks, Asters, Zinnias, Balsams, Dahlias, and many more good things that "need only to be seen to be appreciated."—*The Amateurs' Flower Garden.*

Home-grown Spiræa japonica.—We have become so accustomed to let the supposed superiority of imported productions pass unquestioned, that I suppose any one who enters a plea in favour of home-grown Spiræas will be looked upon with distrust. But why a plant that delights in abundant moisture and a moderate amount of sunlight cannot be grown to perfection without a preliminary sea voyage passes my comprehension. We are not yet clear of the effects of the miserable season of 1879—cold, wet, and sunless—yet our Spiræas, even on north borders that did not get the little sunshine with which we were favoured, are flowering excellently, and large clumps, lifted with balls of earth and set in Vineries for a few days, have been good throughout the season for decorative purposes. Any one having old forced plants should try them on a good piece of ground, and after one season's rest compare the result with imported plants. If they do not hold their ground against the ordinary run of such plants, I shall be disappointed, as I see no reason why this Spiræa cannot attain equal perfection here as on the Continent.—J. G.

The Culture of Pinks.—The culture of the Pink, either for exhibition or decoration, is so simple, and the outlay so small, that it is a wonder to me how it is it should come to be so neglected of late years, but, like some other old-fashioned flowers, it will perhaps ere long come to the front. Pinks may be got from any nurseryman almost at from 3s. to 6s. per dozen pair. The best time to get them is in August or beginning of September, when you can get newly-struck pipings. Place them at once in a sunny situation; if situated in a smoky town a cold frame will be needed; if the air is clear an open bed will do; and when once planted openly, scarcely any care is needed from the time they are planted till they begin to push up their flower-stems in the spring. The soil should be quite fresh, and very little or no manure is needed; and those planted in the frame will need all the air possible, except in very frosty weather. Plant out in spring as early as the weather will permit, and as soon as they begin to grow, mulch the top of the bed with equal quantities of well-rotted horse dung and leaf-mould 1 in. deep. They will then push on their new growth fast. As soon as they begin to send up their flower-stems, give another good mulching of sifted manure, adding about one-fourth of fresh soil. Get some sticks (I use Willows) and tie each flower-stem to a stick. Let them grow on, keeping them tied up the stem till they begin to flower. Then give another top-dressing with new horse droppings if it is at hand, and it will help the side-shoots on so that they will not be robbed by the first blooms. It is now time to multiply your stock. If the plants have made any breed in July, cut with a sharp knife the shoots that are the strongest, cut the ends of the grass off, and cut the shoot two or three joints below the grass or leaves. Prepare a bit of ground as follows: Scatter on the surface a little salt, then riddle on 2 in. deep of fresh soil, prick your pipings in, and put a light or hand-glass over them, and they will be struck in a few weeks. —LACY GREEN.

Planting out Fuchsias.—Do the readers of GARDENING know how well greenhouse Fuchsias can be hardened into becoming out-

Martagon Lily (Lilium Martagon).

Scarlet Turk's-cap Lily (Lilium chalcedonicum).

Little Turk's-cap Lily (Lilium pomponium).

Showy Japan Lily (Lilium speciosum).

Common White Lily (Lilium candidum).

Giant Lily (Lilium giganteum).

Crimson-anthered Lily (Lilium Szovitzianum).

Golden-rayed Lily (Lilium auratum).

Whorl-leaved Lily (Lilium philadelphicum).

Umbel-flowered Lily (Lilium umbellatum).

Brown's Trumpet Lily (Lilium Browni).

Nevada Lily (Lilium Washingtonianum).

SOME HARDY LILIES NOW IN FLOWER IN LONDON GARDENS.

door ones? I plant them out in June, and then about November I cut down the branches and pile ashes over the roots. They will throw up fine shoots next summer and bear very good flowers. This plan answers even in a cold climate. They might be planted out much later in the year after flowering in the greenhouse.—HAREWOOD.

East Lothian Stocks.—Many sow these in August, and no doubt it is a good plan; but if they are sown early in the spring in heat, pricked off when large enough to handle, and treated liberally until they are fit to plant out, say early in May, they will be in flower in July. In warm, porous soils early planting is desirable, as it enables them to get well established before hot weather sets in. When the seeds have been saved with care, these Stocks are well adapted for planting in masses in the flower garden, as a considerable proportion of the plants will produce double flowers; and what few single ones there are do not, as is the case with many other kinds of Stocks, run up with a loose, straggling habit, but retain the compact orderly style of growth peculiar to this variety; therefore the fact of these flowers being single is not noticed so much, as it does not bring them objectionably into prominence. They will flower beautifully all through the autumn; in fact, unless the winter be severe or very wet, there is no cessation in their flowering. Continual wet weather and a water-logged soil are more fatal to them than even frost. At present this variety of Stock does not appear to have run into so many colours as other kinds, and there seems to be little difficulty in keeping the individual colours distinct. The white variety is especially pure and good.—H.

Tropæolum polyphyllum.—This is one of the most valuable hardy plants ever introduced, not only for its freedom of growth and flower and the readiness with which it may be grown, but also for its picturesque way of growth, for, while its foliage may form a dense carpet over a bank, the wreaths of flowers usually throw themselves into irregular windings and groupings.—V.

Propagating Pansies.—In order to secure a good stock of any kind of Pansy, it is better to trust to plants raised from cuttings than from seed, as seedlings, although true to colour, have such diversity of shades, markings, and habits of growth, that they cannot be trusted to produce a constant and even mass of colour. Cuttings made of the young growth that comes up from the base of the plants in summer are best, inasmuch as they are firm and generally strike freely. Old blooming wood is usually hollow, and consequently strikes badly. Cuttings may be put in a cool, shady place in sharp sandy soil any time during the next three months. For spring beds none are better than Blue King, Bedfont Yellow, and Snowflake; and of early blooming Violas, none are better than Bluebell, Yellow Boy, and White Swan.—D.

The First Fuchsia (F. coccinea).—This lovely Fuchsia associates well with the ordinary occupants of a mixed border, and is so graceful and beautiful both in growth and bloom as to commend itself to the notice of the most casual observer. It readily adapts itself to any locality, provided the soil be not of the wettest and coldest description, and even then a slight covering of coal ashes after the stems have been cut down in autumn will suffice to protect the roots in winter. In favourable situations it often attains a height of 6 ft. From the axils of the leaves, which are of a fine green colour, beautifully tinged or veined with red, the flowers, which before they fully open are not unlike crimson drops, are produced in profusion during the greater part of the summer. The Fuchsia in question was first put into commerce by Mr. Lee, the founder of the well-known nursery at Hammersmith, who, it is said, obtained it in the following way:—Mr. Lee having heard that in the window of an humble dwelling in Wapping, growing in a pot, was to be seen a beautiful plant with drooping flowers like earrings, his curiosity became excited, and he at once determined to proceed to the locality and see for himself. Once there, he could not disguise his admiration of the plant in question, and soon introduced himself to the owner, whom he found to be the wife of a sailor. After some preliminary conversation, he offered her a golden guinea in exchange for the plant, but this she refused, saying that her "Jack had brought it home from a foreign country, therefore she would not part with it for his sake." After some persuasion, however, and a promise that he would propagate a plant of the same for her, and at the same time placing in her hands all the cash he had about him (about ten guineas), he obtained possession of the plant, which was speedily propagated, and found, as may be imagined, a ready and profitable sale. The fine old Fuchsia gracilis rubra and F. Riccartoni may also be used for outdoor decoration, being equally hardy; but where a strong-growing, free-blooming kind is required for training against a wall or fence, there is, as yet, nothing to equal the old F. corallina.—R.

Humea elegans.—For planting round or near fountains placed in the centre of a flower garden this plant is excellent. Its graceful drooping tresses of silky brownish-orange-coloured flowers, which glitter in the sun, when moved by the breeze, give it a charm beyond description. Whether as a back line to a long border, as a single specimen to let into the lawn, or for the centre of a bed or vase, it is most charming; and as its culture is easy, and its period of beauty extends from May till November, a brief notice of how it may be best grown may not be unacceptable to your readers. Sow the seeds now in a pan of light soil, and place it in a warm frame until the plants are in rough

Humea elegans.—A graceful plant for the garden or greenhouse.

leaf; then remove them into a cool frame, where they can receive plenty of air and slight shading during hot sunshine for a fortnight, when they will be ready to pot off singly in 2½-in. pots, using light rich soil for the purpose, and plunging the pots to the rim in sand or sawdust. Keep them close and shaded until sufficiently strong to stand out when they must be gradually exposed to sun and air, after which they will only require to be covered with a glass sash during cold or wet weather. Shift them into larger pots throughout the autumn and following spring as they require it, taking care not to let them become pot-bound, as their beauty is much lessened by being in any way stinted, either in pot room, moisture, or richness of soil. By liberal treatment they will retain all their foliage in a healthy green state until finally destroyed by frost. During winter, a low temperature, plenty of air, and being kept near the glass suits those intended for planting out better than heat and a close atmosphere. Give plenty of water before turning them out of the pots, and also for a week or two after planting, until they are fairly established in the soil, which should be composed of turfy loam and well-decayed manure or leaf-soil. When kept under glass to flower in pots for indoor decoration, they are not half so beautiful as when exposed to the open air, their colour indoors being a kind of greenish-pink, which gives the plants a sickly appearance. Slightly fumigating them during the spring months will keep them free from insects, which are apt to infest the under surface of their foliage.—J. S.

Garden Ornaments.—In an article under this heading "Newt" speaks of glue in connection with outdoor work. My experience teaches me that the less one has to do with glue for such work the better. French wire nails are the thing; they are to be had of all sizes, and do not split the wood like square nails. "Newt" also tells your readers to use green paint. If they must paint, I would advise them to try the effect of chocolate colour. How it is that gardeners have such a weakness for green paint I do not know; there are very few greens which harmonise with the greens of Nature, and the prevailing gardener's green is enough to turn the whole harmony of Nature upside-down. Why paint such things at all? varnish them if you want them to last a few years longer.—WHITBY.

ROSES.

Propagating Roses.—One of the most successful methods of striking Roses that I have ever found is, when the first flowers of the season are over, and when the shoots which have borne them have pushed the second growth, to take them off when they have reached a half-ripened condition and insert half-a-dozen cuttings together in 5-in. or 6-in. pots in sandy soil. Place them in a cold frame quite moist; shade and keep the frame so close that the air given will not cause them to flag, and in three weeks' time the base of the cuttings will be callused over, when, if the pots are then plunged in a slight hotbed and treated like other cuttings, they will root directly and make useful little plants before the autumn, whereas if put in heat before they are callused over, three-fourths of them will damp off.

Mildew on Roses.—Apart from the unsightly appearance which Roses affected with mildew have, it does them much harm, and completely spoils the autumn bloom which ought to be forthcoming. Therefore, as soon as ever the parasite is seen, means should at once be taken to destroy it; sulphur in some form, either dusted on the leaves or in water, will be found the best remedy.

Climbing Devoniensis Rose.—This is a beautiful Rose for covering a lofty wall, and at this season its flowers are lovely in a cut state. It is often complained of as being a shy bloomer, but it is a rampant grower, and in order to induce it to flower well, the young shoots, which in vigorous specimens are often 10 ft. or 12 ft. long, should be left their full length. The pruning should be confined to thinning out the wood and removing occasionally an old branch to make room for the young shoots, as it is towards the points of these that the flowers are chiefly produced; no shortening should be permitted beyond removing a few inches of the soft points.—E. H.

BONES FOR THE GARDEN.

IN GARDENING ILLUSTRATED, July 10, there appeared an article on "How to Reduce Bones," upon which I beg to offer a few remarks that may be useful to those living in the country who have gardens and may wish to convert bones into a profitable manure. The plan recommended in the article referred to consisted in making a trench some 3 ft. or 4 ft. deep, and filling in the bones between alternate layers of wood ashes. This cannot certainly be considered a rapid or indeed a desirable plan, as the author himself admits that about ten months will be required to effect complete decomposition. Further, if water be added every eight or ten days, as suggested, it is extremely probable that the soluble salts present in the wood ashes would be washed away and pass off in the drainage. But, to my mind, it appears a mistake to bury bones in a cold soil where the temperature must be low, for we know that all animal substances decompose more readily the higher the temperature; and meat is kept in the coolest part of the house to retard this process of decomposition as much as possible.

In dissolving bones we should reverse these conditions and keep the bones in a warm place with just sufficient water to keep them moist, and enough wood ashes to completely cover the several layers of bones. I would suggest that an old tub, placed in the sunny side of the garden, would be a much more convenient receptacle than a trench dug in the cold soil.

With the aid of a bell-shaped iron mortar, which could be obtained for 5s. from any ironmonger, the bones might be first broken up

into ½-inch pieces, and so rendered much more perfectly acted on by decomposing agents, such as the wood ashes already suggested, or by sulphuric acid, if the latter can be conveniently obtained.

It is most desirable that all refuse bones should be made available in some form as manure rather than be allowed to remain, as they too often are, an ever-fertile source of disagreeable odours from the dust-bin. But I go further, and ask how it is that the special chemical manures, which are now so largely used among farmers to supplement the use of farmyard manure, are not more largely employed in our gardens?

It is only necessary to study first the special requirements of our different garden crops, and then to apply the manures that have been found specially most suitable. Among farmers superphosphate and dissolved bones are employed for root crops; while guano, nitrate of soda, and sulphate of ammonia are the dressings used for cereals, such as Wheat, Barley, Oats, &c.

It is to be regretted that the valuable experiments which Mr. Lawes has carried on for upwards of forty years on his estate at Rothamstead have not been brought before farmers and gardeners in some popular form. The very elaborate manner in which the results of these experiments have been published prevents outsiders from deriving the full benefit of the practical knowledge gained after many years of careful research. No doubt this will be done by-and-bye. Many of the special manures that are advertised as intended for garden purposes have no doubt been compounded after careful study of the requirements of plants.

I have myself during the past few years carried out experiments in my own garden with the remaining portion of special fertilisers sent to me for analysis, and the results obtained have been full of interest. It should be remembered that all the valuable elements contained in a mixture of bones and wood ashes, and which are only available as manure after decomposition, can at once be obtained by using superphosphate (phosphate of lime dissolved by acid) and guano with some muriate of potash. Thousands of tons of superphosphate and guano are used by farmers every year, and doubtless in the future we shall find these fertilisers employed largely in our gardens.

79, *Mark Lane, London.* John Hughes.

FRUIT.

Large Strawberries.—Some Strawberries shown at the Brighton Show the other day, by Mr. Rutland, from Goodwood, created quite a sensation, being admitted to be the largest ever seen. Some idea of what they were may be gleaned from the fact that eight weighed 1 lb. 1 oz. One measured 3¾ in. across it and several 3½ in.; they were not only large, but a very abundant crop, and have been the admiration of all who have seen them. So much for deep cultivation. Very little rain has fallen at Goodwood this season compared with many parts of the country, and not one drop of water have they had but what has fallen from the clouds.

Figs Trained and Untrained.—Some are of opinion that Figs on open walls are more satisfactory left to grow wild than trained. The reason for this is obvious: the training was not suited to the requirements of the subject dealt with. I have myself seen fruit in abundance in exceptionally fine seasons on trees uninterfered with, but the crop was certainly not so regular, fine, or satisfactory as that on trees which were systematically trained so that the maximum of heat and light might reach the useful bearing wood, and the strength of the tree be directed towards its production instead of being wasted on useless watery growth. My own impression is that no fruit tree better repays a little extra attention than the Fig.—J. G. H.

The Lady Apple.—This beautiful little dessert Apple, the Pomme d'Api of the French, will soon again be seen in the windows of the fruiterers' shops in Covent Garden, where its handsome form and brilliant colours never fail to excite admiration, and until late in spring boxes of perfect fruits of it may be obtained. It is by no means a new Apple; on the contrary, it was once said to have been known and appreciated in the time of Pliny. It is now thought to have been, originally, a French Apple, obtained from a wild variety found in the forest of Apis, in Bretagne. In Normandy it was well known in 1690, and was then called Gros Apis and Long-bois. The fruit of this Apple, which should be gathered as late as possible, should be thinned where it is too thick, and, above all, should be as much exposed to the sun as possible, so as to give it colour. So well does it adhere to the tree, that it will brave, without falling, the strongest winds. This Apple should be eaten with its skin on, this having so agreeable a perfume that we can hardly afford to dispense with it. It is largely grown in the United States, and always commands a higher price than any other fancy Apple in the market. In this country it would, doubtless, succeed well under orchard-house culture, on the Paradise stock, or in the open air. Any one having a spare wall might with advantage plant a tree or two of this Apple against it. October is the best month in which to plant.—G.

VEGETABLES.

SEASONABLE NOTES.

Watering.—The common-sense way of doing this in the open air is to pour it on the land between the crops in the evening only, giving sufficient to moisten the soil to the extremities of the roots, and the next morning scattering an inch or so of short manure, rough leaf-mould, old tan, or dry soil over the surface, having previously just loosened it up with the hoe. Where such precautionary measures for lessening evaporation are taken, once a week will be sufficient to water all crops. If watered frequently, liquid manure should be given occasionally, to compensate for the waste of manurial matters in the soil from so much water being so rapidly passed through the upper stratum, to be as rapidly evaporated again by the hot sun the following day. Never use hard pump-water until it has been well exposed to the sun and air, and hoe up the surface two or three times a week. Few seem to realise the benefit derivable from a frequent stirring of the earth's surface in dry weather as a means of retaining moisture in the land and keeping the root-run cool.

The Api or Lady Apple.

Planting-out Broccoli.—The main crop of Broccoli should have been planted out and established in some open situation, and have space enough allowed it to induce a dwarf, sturdy growth, keeping in mind the average growth which each kind usually makes. The Leamington and Eclipse are two excellent late kinds, that will not disappoint if obtained true; they come in in succession as I have set them down. There is yet time to plant them out for a late spring crop; Eclipse will quite meet the earliest Cauliflowers at the end of May or beginning of June, but it should be got out at once to obtain good heads. Early planting usually leads to firm growth, with its consequent immunity from frost in winter. That indispensable kind Autumn Self-protecting should be planted on rich land, as should also the Autumn Giant Cauliflower.

Planting Celery in the Trenches from the Seed-bed.—It is not customary to do this, but in certain places it is not a bad plan; of course, where it is done the seeds should either be sown thinly or the plants thinned out to 2 in. apart in good time before they crowd each other. No doubt transplanting increases the numbers of fibres or feeding roots, and keeps them nearer home, so to speak, than if otherwise treated, and on good land where the food supply—both liquid and solid—is ample, it has a beneficial tendency; but in places where water is scarce and difficult to apply, keeping the roots near the surface is not an unmixed good. We cannot transplant anything without checking its growth, and there are places and seasons when the fewer checks given the better.

Sowing Lettuces for Winter.—From the middle of July to the 25th is a good time to sow a good breadth of Brown Cos, Hick's Hardy Green Cos, Hammersmith, and Tom Thumb Cabbage Lettuces for winter. Select an open situation, where the land is in good heart; if the weather be dry, soak the bed with water before sowing the seeds, and cover with dry soil.

Radishes.—These, at this season, are often difficult to obtain crisp and good, and as the space occupied by them in comparison with other crops is small, we find it best to make up special beds for them, with rich, light soil, on a cool border. The waste soil from the potting-shed comes in well for this and similar purposes, and where many bedding plants are grown the temporary sheltering places used for them may be employed for this purpose; under such treatment they grow rapidly, and are mild in flavour. The French Breakfast Radish is the best variety for sowing in summer.—B. D.

Parsley and Early Horn Carrots.—A good breadth of these sown now will prove to be exceedingly useful, but no time should be lost in getting them in. A south or sheltered border will be the best site for them; it should be dressed with a sprinkling of guano or some other artificial manure, or, if more convenient, the drills may have a good soaking of liquid manure just previous to sowing the seeds. The drills for the Carrots may be 8 in. apart, and as soon as the young plants are up thin them out to 4 in. apart in the rows; this will be sufficient, as the largest may be drawn for use when about the size of one's thumb, and the operation of drawing them fresh from the ground should be continued all through the autumn and winter, merely protecting with a thin covering of dry litter when severe weather sets in. The Parsley drills should be 1 ft. apart, and the young plants should be thinned out to 5 in. or 6 in. asunder. I have a bed that was sown about this time last year that is far superior to any sown in the spring; not a dozen plants have shown any symptoms of running to seed, and they will not do so before next year. Sown now, and some efficient

means of protecting during severe weather, there need be no scarcity of good Parsley.—E. H.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

July 26.—Sowing Wheeler's Imperial and Heartwell Early Marrow Cabbage; also Broad-leaved and Green Curled Endive on a moist border; planting out the last rows of Celery in trenches, in which has been put a good supply of well rotted manure, to which had previously been added soot and salt at the rate of 25 lb. of the former and 1 bushel of the latter to the load; putting Jargonelle Pears in gauze bags to protect them from wasps, &c.; nailing and tying in leading shoots of Peaches and Nectarines; taking lights off early Peach house and well watering the borders; layering Strawberry runners in pieces of turf 4 in. square which have previously been soaked in manure water.

July 27.—Sowing Brown Cos and All the Year Round Lettuce, Red and White Turnip Radishes, and Early Horn Carrots for autumn use; potting Primulas and Cinerarias for supplying cut flowers; storing Shallots and Garlic in a cool shed; earthing up Celery whilst it is perfectly dry; stopping laterals through all Vineries where the fruit is ripening; hoeing, cleaning, and watering amongst late Peas; taking up a border of Early Ash-leaf Kidney Potatoes and laying them in the sun to get green for seed.

July 28.—Sowing Turnips; putting in a few Pelargonium cuttings; staking Chrysanthemums; pruning and nailing Plum trees; pulling up pickling Onions and laying them out to dry; stopping and nailing the shoots of Tomatoes on walls; giving late Vineries a good soaking of guano water.

July 29.—Sowing Mignonette in pots; also Telegraph Cucumbers; renovating linings round all Melon and Cucumber frames; digging ground (previously occupied by Peas) for Cabbages; hoeing among Gooseberries and Currants.

July 30.—Sowing Spinach; also in a pit Osborn's Early Forcing Bean to succeed the outdoor crops; repotting Ferns and Draceenas for dinner-table; earthing up Leeks, thinning Turnips and Spinach.

July 31.—Sowing a bed of Early White Naples Onions for use in spring; pulling up one portion of spring-sown Onions to dry; gathering Gherkins, Cucumbers, Cauliflower, Onions, &c., for mixed pickles.

Flower.

Many annuals, although beautiful while in bloom, are sometimes of short duration. They should (if the seed is not required) be cleared off as soon as their beauty is over, and be immediately replaced by other plants. Attend to the various sorts of plants in the flower-beds as regards training, pegging down, watering, &c., and regulate the growth of standard and pyramidal specimens of Fuchsias, Pelargoniums, Tropæolums, Clematises, &c., while drooping plants in baskets and vases will also require to be occasionally regulated and trained, so as to be made to depend gracefully over the sides and around the margins of the same. Plants suitable for this purpose are the various sorts of Ivy-leaved Pelargoniums, Clematises, Convolvulus, Maurandias, Lophospermums, and many others.

Biennials and perennials raised from seed sown during the spring must on no account be allowed to stand too close on the beds, for if crowded, the whole get drawn up weakly, and a season is so far lost that they flower only meagrely the ensuing spring and summer. In preparing nursery beds for those that do not absolutely require a shaded position, select an open position where they will make close, compact growth, which will enable them to stand the winter and produce double the quantity of flowers that can be obtained from weakly grown examples. Those that do not like full exposure to the sun, as, for instance, Primroses and Polyanthuses, should have a place at the north side of a wall, not, as they are often seen, crammed away under the shade of trees that not only darken them too much, but impoverish the soil to an extent that prevents them attaining anything like the necessary strength and vigour.

Herbaceous Borders.—Stake and tie everything that requires it before it is broken down by the wind, especially tall-growing subjects like Hollyhocks. These fine plants are often thrust at the extreme back of a border, close up to trees or shrubs, where there is no possibility of their ever being more than mere shadows of what they would grow to if justice were done to them; in such places the bottom leaves are usually all destroyed by red spider before their flowering is half over. Mulching with 3 in. of rotten manure over the roots will greatly assist them, and a free use of the syringe with clean water twice a week, taking care to moisten the roots as well, will much improve their health and appearance. Remove all dead and decaying tops from plants that have flowered early, in order to reduce to a minimum the greatest drawback to herbaceous plants; but for the sake of mere appearance never remove the healthy tops from any plant, or the never-failing result will be to weaken it seriously.

Show Pelargoniums that were placed in the open air to ripen their wood, as recently recommended, will now be in a fit state for heading down, an operation which should be performed at once, as their ability to flower early next spring depends much upon the time at which they are cut down. No plant with its roots confined in a pot should have its head removed without first allowing the soil to get as dry as it will bear without injury. It is necessary to be more careful in this matter in the case of Pelargoniums than in that of most plants, as they are more impatient of their roots being in soil that is too wet than the generality of plants in cultivation. After they are headed down place them in a cold pit or ordinary garden frame in a sunny situation, put the lights on, but tilt them in the daytime in order to admit air, closing them in the afternoon whilst the sun is on the glass, syringing them freely overhead at the same time, which will be all the water they will require until they have broken into growth afresh.

Fuchsias.—A portion of the plants that flowered earliest may now with advantage be placed for ten days or so in the open air, during which time they should receive only just enough water to prevent them from flagging. If after this their side branches are cut into four or five joints, the leading shoot being shortened proportionately, and they are then put in a house or pit, where the atmosphere can be kept a little close and moist by freely damping the floor, closing the lights in good time in the afternoon, and syringing overhead, they will quickly throw out fresh shoots that will bloom freely through the autumn; and to assist them to do that they should have weak manure water applied once or twice a week.

Petunias.—These make excellent pot plants and are very showy, especially the flaked varieties, both single and double. To have them stocky and short-jointed they should be grown out-of-doors, fully exposed to the sun, and be stopped frequently to induce them to break back freely and form bushy plants. When grown under glass the stems become drawn, which they likewise do in the greenhouse while producing their blooms. To obviate this as much as possible they should be placed in light airy positions, where they only get a small amount of shade, if any at all. By cutting back any that have become straggling and drawn, and replacing them out in the open air, they soon break again and flower with great freedom, so that a constant supply may be kept up by growing a few plants and treating them in this way. While out-of-doors the pots should be plunged so as to prevent the sun from drying the roots.

Celosias.—The brilliant and feathery plumes of these and the length of time during which they may be had in bloom render them very desirable plants to cultivate, either for the purpose of supplying cut flowers or for greenhouse or conservatory decoration, where for effect they have no equal among soft-wooded plants. Unfortunately, however, they are very subject to red spider, and, unless kept well syringed while growing and freely supplied with water at all times, they become so much injured as to lose their foliage entirely long before the flowers become shabby.

Double Zinnias.—There is generally a scarcity of gay-blooming plants late in autumn, and although Zinnias are not generally cultivated in pots, they are most valuable for that purpose, their gay colours and fine large globular flowers making quite a display indoors long after they cease blooming in open beds, where damp nights and heavy rains generally cut short their beauty. Any left over from planting should have their flower-buds nipped out and be potted up at once, after which set them in the shade for a few days till they get hold of the soil, and then out in an open situation. A few seeds sown now will not be too late, as they grow rapidly at this season and soon come into bloom.

Late-flowering Lilies of the lancifolium section will now have formed their flowers and have filled their pots with roots. Where there are many bulbs in a pot, the soil naturally becomes exhausted, and unless from this time onwards they are regularly supplied with manure water, the bottom leaves will turn yellow and fall off long before the flowering is over, a circumstance which gives them an unsightly appearance. Where a number of these useful decorative plants are grown, their season of blooming may be much prolonged by placing a portion at the north side of a wall now, where they will not receive much sun. When the flowers are visible this will not have any effect upon drawing them up weakly, provided they are set where they will get plenty of light; keep them well tied out so as to admit light to the inside leaves. If aphides make their appearance upon them they should be immediately thoroughly syringed with Tobacco or Quassia water, laying them down on their sides for the purpose, for if the aphides be allowed to remain on them, they will destroy the leaves in a very short time. One of the first essentials of successful Lily culture is to maintain the leaves in a healthy state as long as possible. The number of flowers produced by pot Lilies is generally not more than half the quantity which they would bear were the treatment such as they require.

Violets.—Well-established plants of Violets are now throwing out strong runners, and if a stone be placed on each so as to press them to the soil, good strong plants can soon be obtained. As soon as they have begun to root into the soil the runners should be lifted and planted out in a piece of well-prepared ground in the form of a bed, and they will yield fine flowers early in autumn and winter if the weather be at all open and warm. The state of the weather has much to do with the production of flowers.

Dianthus.—The annual varieties are now getting into full bloom. There is the well-known Indian Pink (Dianthus chinensis) and its double form; both are now in flower, and they contain very charming varieties, especially those having fringed edges. Then there is the pretty dwarf Dianthus Heddewigi and its fringed variety, laciniatus, both large and rich in colour. The best soil for these annual Dianthuses if one of a light sandy nature. The seeds can be sown in the open ground, and the plants thinned out to a requisite distance when the seedlings are large enough to be handled.

Shrubbery.

Where alterations in gardens are contemplated, the present is the most suitable time for making notes and observations having reference to these changes, as all trees, &c., have now attained to a mature condition as regards the hue or colour of their foliage, their habit of growth, &c.; and such notes made now will probably be found to be very useful at a later period of the season when such alterations are being carried out. In selecting trees and shrubs it is necessary to take into consideration their habit of growth and the form they are likely to assume when they are fully developed, and whether they will be of an upright or drooping habit, or of a round-headed or pyramidal form, &c.; and, with a view to secure the desired effect in grouping or arrangement, the hue and form of leaf should also have attention given them. There is also another very important point which should not be lost sight of, viz., that of selecting plants that are likely to thrive in the soil and situation where it is intended they should be planted.

Indoor Fruit.

Vines from which the Grapes have been cut, and that manifest an undesirable tendency to produce wood, stopping, which is the only way to meet the difficulty and induce earlier ripening and resting, must be persisted in. Keep the houses as cool as possible, and the foliage clean and free from insects, which, now that the fruit is used, will be a comparatively easy task, as syringing may now be done whenever it may be thought necessary. If the borders are at all unsatisfactory now is the time to see to them, either as regards the examination of old drains or making new ones, or giving additional soil and top-dressing. Of course suitable weather must be chosen for such work,

as it is very undesirable to be moving soil when it is in a pasty condition, both as regards the Vines and one's own comfort. Give air freely to Grapes colouring, but guard against cold currents, which are oftener the cause of "shanking" than the state of the soil or border, which generally gets the blame, and sometimes perhaps rightly. A severe check of any kind occurring at that critical juncture when the fruit begins to change from the sour to the saccharine state will cause shanking, and perhaps there is no greater cause of that evil than over-cropping; and yet how slow we are to acknowledge the fact, or to rest content with one good bunch rather than two inferior ones shanked. Go over late Grapes prior to colouring, and clip out all small or imperfectly fertilised berries, and if necessary tie up the shoulders of the bunches. All that are intended to hang on the Vines or keep long should be well thinned out, especially towards the middle of the bunches, else in the winter, should one berry crack or go mouldy, the entire bunch will be sure to follow.

Melons.—A minimum bottom-heat of 70°, and the same of top-heat, are indispensable for crops approaching maturity, and air must be given freely whenever the weather is favourable. Keep the soil in a moderate state as regards moisture, and when watering is necessary let it be done thoroughly and always with water of the same temperature as that of the border. To some, the question of a few degrees' difference between the temperature of the water used and that of the border may seem of little moment, but it not unfrequently makes all the difference between a good crop and a bad one; indeed, it is by a combination of so-called little matters that success in most matters is attained. Stop and tie in successional plants, and carefully guard the foliage from injury of every kind, exposing the fruit to light as much as possible. It is not yet too late to plant more Melons if wanted, but they should be got out without further delay.

Outdoor Fruit.

Peaches and Nectarines should be gone over as often as they require it, removing all superabundant and ill-placed shoots. Take care, however, to destroy none that will be required for bearing next year. Want of observation and forethought in this matter is the cause of so many of these trees being deficient in the way of bearing wood in the centre, the fruit being borne almost exclusively near the extremities of the branches, instead of being evenly distributed over the whole surface. Such shoots as are to be retained should now be laid in close to the wall, an operation especially necessary in late localities, where there is a difficulty in getting the wood ripened over each tree; moreover, now and then, see that the fruit is fully exposed to the sun, and where any symptoms of mildew, either on the leaves or fruit, show themselves, dust the tree, or at all events the affected parts, with flour of sulphur. Let the sulphur remain undisturbed for four or five days before it is syringed off. Be assiduous in regularly syringing with water, and also in giving a copious supply to the roots; this is not only necessary to enable the fruit to attain its full size, but also to prepare good wood for another season. Probably half the failures that occur in the cultivation of Peaches and Nectarines, particularly in small gardens, are due to the trees not receiving sufficient attention. With the exception of pruning and nailing, they are, comparatively speaking, often left to take their chance, or they are subjected to a course of alternate care and neglect, which results in a crop of fruit being obtained in such seasons as it is to be met with everywhere, but none at other times. There is also an immense difference in the size and quality of fruit borne by trees that receive the requisite attention as compared with that produced by those existing under neglected conditions.

Apricots.—These should also have sufficient young shoots nailed or tied in close to the wall to supply bearing wood evenly over the whole surface. These young shoots, when in absolute contact with the wall, will frequently set a crop of fruit when that upon spurs, which stands further away, is destroyed by spring frosts. The difference that 2 in. make in such matters would scarcely be credited by those who have not had an opportunity or taken the trouble to compare the results,

Vegetables.

Shallots, Garlic, early Peas, early Cauliflowers, autumn-sown Onions, and the earliest kinds of Potatoes ought to be harvested, and as soon as they are lifted let the ground be cropped as follows: On the Shallot, Garlic, and Onion ground put Lettuces, Endive, Turnips, and Early Horn Carrots; on the Cauliflower ground, winter Spinach; and on the Potato ground, Broccoli or other kinds of winter Greens. If the ground was well treated for the preceding crops, no preparation beyond that of cleaning and levelling will now be necessary. We usually plant the main crop of Broccoli on the Strawberry plot that has done duty for two years. As soon as the fruit has all been gathered, the plants are planed off with spades, and the Broccoli planted between the rows, in holes made with a crowbar, and filled in with fine soil. Under these conditions Broccoli thrives at least as well as on ground that has been elaborately prepared, putting out of the question the saving of labour and time. Small saladings, Mustard, Cress, Radishes, &c., may still be sown in open borders in small quantities weekly, and as French Beans are not likely to do much good outside, provision should be made for making a sowing forthwith either in frames or in pots, to be introduced into houses or pits as room can be found for them.

Tomatoes.—The naturally vigorous habit of these plants is such that they usually grow too rank if they receive over much moisture at the roots, but in exceedingly dry weather they must be regularly supplied with water, or the fruit will neither swell to the requisite size, nor will the plants continue growing. Do not allow them to get too much crowded with superabundant shoots or to hang loosely from the wall, or the progress will be slow. They should be kept regularly and evenly trained, so that the sun can reach every part.

Herbs.—In drying herbs an open shed or room, where plenty of air can be given, is necessary. Stretch out a piece of netting, such as is used for protecting fruit from birds (wire netting if at hand will do); on this lay the herbs (which should be cut when quite dry) thinly. Thus treated, air acts upon them from all sides, and they dry quickly without losing their best properties. When perfectly dry put them loosely in white paper bags, tie them up, and hang them where they will be free from damp. Herbs treated in this way will be found to be but little inferior to such as are fresh cut. Sage should now be propagated by slips, taking off middling-sized branches and inserting them moderately deep in the ground in rows where they are to be grown. If the weather becomes dry give them plenty of water until they are rooted. The advantage of growing Sage from slips or cuttings is that plants so produced have not such a disposition to flower as those raised from seed.

GLASSHOUSES & FRAMES.

COVERING GLASSHOUSE WALLS.

For covering the back or other walls of cool conservatories, the

Camellia, for striking and permanent effect, is unrivalled. I have often thought, when looking at the weedy character of the usual occupants of such walls, what a change would take place in a few years were they planted with a good selection of Camellias. It often happens that, in such positions, only a subdued light reaches the base of the wall, and most of the plants of a climbing or semi-climbing habit rush up to the top after the light, and the lower part of the wall is left bare, or, at least, only thinly covered. The Camellia, when planted out in a good border, will thrive and flower in a position, as regards light, where other plants (except, perhaps, the Myrtle) would only have a lingering existence. Of course, to cover a wall 12 ft. to 15 ft. high with Camellias will take time; but every year they will gradually creep higher and improve in appearance, and when at last the wall is covered and the plants in flower, what a grand display will be the result! Even though scentless, the flowers are so brilliant and varied in colour, from the purest white to the darkest crimson, as to be altogether matchless. I have a Camellia-covered wall in my mind's eye that I had charge of years ago, where flowers could be had in abundance from November till May—and such flowers—not like the small thin-petalled starvelings often seen growing on plants in pots. There is no question, I think, that Camellias planted out in a good border produce the finest flowers, and although the bush form is the natural habit of the plant, yet, if planted out in a young state against a wall, it submits to training as readily as any climbing evergreen; and if early, medium, and late-flowering varieties are selected, flowers in abundance may be obtained from a wall for at least six months in the year, and that, too, at a time when flowers are most valuable. In planting out Camellias, and hard-wooded plants generally, deep planting should especially be guarded against; for in making new borders that will, for the most part, be composed of fibrous materials, decomposition and settling will go on for years, and the plants gradually, but almost imperceptibly, subside. When this takes place the proper remedy is to lift the plants, make up the border, and re-plant, when no harm will follow; but I have met with instances where the borders had been gradually made up with fresh soil without lifting the plants, and the accumulation of soil round their collar brought on a sickly, unhealthy appearance, which was speedily followed by death; and, doubtless, some cause other than the true one was assigned for the disaster. I do not think, as regards soil, there is anything better for Camellias (if permanent effect is aimed at) than a rich turfy, rather sandy loam. If at all adhesive when the fibre in it decays, it will probably become too close and heavy, and although Camellias enjoy abundant supplies of water, still, anything in the shape of stagnation at the roots must be avoided; therefore, if the loam is at all heavy, peat or thoroughly decayed leaf-mould, with a proportion of sand and lumps of charcoal to increase its porosity, should be added; but in using leaf-mould, unless care is used to have none but what is thoroughly decayed, fungus may be introduced amongst the roots that may be productive of serious injury to the plants. I have also on several occasions seen the same result follow the use of peat in which very small particles of the rhizomes of the common Brake Fern, or little bits of the root of the common Heath had been left in the soil. Therefore, for making Camellia borders, if good loam can be obtained which does not contain lime beyond the small average amount usually found in all soils, I should recommend its use in preference to composts of all kinds, and trust to liquid manures, and especially that made from soot, to give strength and vigour when required.

As wall or pillar plants for a cool house Myrtles might be more extensively used than they are; when planted out they grow rapidly, and their sweet white flowers are exceedingly beautiful. Sprays of glossy-leaved sweet-scented Myrtle are very desirable for mixing with cut flowers either in the drawing-room vase or in bouquet making. Habrothamnus fasicularis and elegans are free-growing and free-flowering plants, of semi-climbing habit, well adapted for covering walls, pillars, or arches in a cool conservatory, as is also the Cytisus racemosus, which, when planted in a border of loam, assumes an almost perpetual flowering habit.

Many other plants might be mentioned, such as Magnolia fuscata, which, although of slow growth, makes rather a desirable wall plant, especially for low walls. In a rather dark shady corner, Clianthus puniceus would be at home, as it is rather subject to attacks of red spider when the sun shines full upon it. Abutilon Thompsoni makes a grand wall plant, growing as freely as its parent, the old striatum. I may say, several years ago, I obtained seedlings from this identical with striatum, and so I suppose Thompsoni to be a variegated sport from that old variety. In warm light houses few things can equal the Luculia gratissima for covering walls. The Heliotrope, also, is a good subject for a light position, as, by judicious pruning back, it may be in bloom at any season of the year. I once had a wall covered with it that I always cut back in July to get a new flowering growth for autumn and winter. Fuchsias, also, when planted out and pruned back in July, will make a new growth and bloom beautifully through the autumn and winter months. Fuchsias, however, attain their greatest perfection when trained along the

tie-rods supporting the roof, as then they entirely hide their supports and produce a wondrous wealth of gracefully-drooping floral beauty, that must be seen to be adequately appreciated. Oranges and Lemons—in fact, all the Citrus family—do well in loam and planted against a wall in a warm house, and I have seen good crops of at least useful fruit produced in this way. These should, however, be planted out when young and when the branches are pliable, so as to be easily got into shape without having recourse to strong ligatures, which would have a tendency to check the proper circulation of the sap.

There are various ways of clothing the back walls of Ferneries and stoves with Ferns and fine foliage and creeping plants; and, when so treated, a large collection of plants may be grown in an interesting manner in a comparatively small space. Supposing it is desired to cover a wall—at the back of a Fernery, for instance—in which case I will assume the house to have a span-roof running east and west, the back wall being, perhaps, 6 ft. to 8 ft. high, and, of course, on the north side. I am only supposing this height, as for my purpose it does not matter whether it is more or less. The wall in the hottest part, at least, of the day, would be shaded, and would in consequence be the dampest, shadiest position in the house, eminently suited for flower culture. One mode of planting such a wall would be as follows:—Run parallel wires, tightly strained, 6 in. from the wall and the same distant apart, to form a support for Mosses, Ferns, and soil, which latter should be principally composed of peat, with some charcoal and pieces of freestone intermixed. I think I need scarcely enter into details, as a small amount of ingenuity, when accompanied by taste, will plant the surface of such a wall with Ferns, Club Mosses, &c., so as to produce a charming effect with the surface neatly mossed over. Begonias of the variegated section might also be introduced with Fittonias, Eranthemums, Sonerila margaritacea and S. Hendersoni, Cissus discolor, and Panicum variegatum, but the stove plants, of course, would only be introduced into a tropical Fernery.

Cut-leaved Sow Thistle (Sonchus laciniatus).

Another way of making a Fern wall may be just briefly noticed, and as this will be a more elaborate affair, it will consequently be more expensive. In the first place call in the bricklayer, and have a series of small brick arches run all along the base of the wall. On the first series, run a second just a little narrower, and on the second a third, and so on till the top of the wall is reached, the arches gradually decreasing in size, so as to be narrowest at the top. If the arches are one brick thick, that will be quite strong enough. It is not necessary that the arches in any one series should be all alike, as if diversity of outline is sought for, it may be obtained by varying the size. This system of brick arches will form the base or foundation of the structure, and may be dressed in any shape desired, leaving plenty of pockets to hold soil to grow Ferns and other plants. The mode of dressing and hiding the brick-work is altogether a matter of taste, and may be done either with virgin cork, or spar, or red sandstone, worked up with cement, avoiding as much as possible all formality. Of course all the brick-work will be covered with whatever material it is decided to use, as the main object in using brick arches at all is to make sure of a supply of moisture and soil. I believe a good case might be made out for the extended cultivation of Oranges, Lemons, Guavas, Cape Gooseberries, &c., on the back walls of Vineries and other fruit houses; but in all cases where the walls are used in this way they should be well painted and wired for training, and once a year the plants should be unfastened from the wall, which should be washed with a solution of soft-soap, or some other insecticide, to keep down insects. E. H. D. Y.

Iris persica and reticulata for Winter.—I have found these to do well treated as follows: I put from four to six roots of them in a 5-in. or 6-in. pot in August or September, and plunge them like Hyacinths till they begin to grow; then I put them into a cold pit, giving all the air possible in fine weather, and only keeping them from frost, and just previous to their blooming I bring them into the greenhouse, giving them a good place on a light, airy shelf, where they throw up strong blooms. When out of flower I replace them in the pot, encouraging the foliage so as to keep it green as long as possible. When it shows signs of turning yellow, I gradually withhold water till the soil becomes quite dry, and allow them to remain in the pots till they are wanted to start again. —J. F.

The Star-flower (Triteleia uniflora) as a Pot Plant.—Many may not be aware how well adapted this pretty little spring-flowering bulb is for pot culture. About a dozen good-sized bulbs should be placed in an 8-in. pot, using a compost of leaf-mould and turfy loam, to which may be added a portion of well-decomposed manure; pot firmly, and give a good watering to settle the soil, and then plunge the pots in a cool frame or at the back of a north wall up to their rims. During September and October place them where they may enjoy full exposure to sun and air; they may be wintered in a cold frame where they can be fully protected from hard frosts, taking care to keep them sufficiently moist at the roots to prevent the foliage from becoming yellow, which it is apt to do if they be allowed to remain dry. When the buds begin to appear they may be removed to the conservatory or sitting-room. There is one peculiarity in the growth of this plant which adds much to its beauty when thus grown, viz., the leaves turning downwards and completely clothing the sides of the pot; in order, therefore, to see it to full advantage, it should be placed in a somewhat elevated position. For those who have no convenience for forcing flowers the Triteleia thus treated is invaluable, as the slight protection alone which it receives suffices to bring it into full bloom some weeks earlier than those in the open border.—J. B.

The Cut-leaved Sow Thistle (Sonchus laciniatus) **as a Table Plant.**—The plant in question attains a height of some 2 ft. or 3 ft., or even more, and it should be grown with but a single stem, as in that state its peculiar beauty is displayed to the best advantage. The leaves are long, thin in texture, and pinnate, and their colour is bright green. Under artificial light they appear almost transparent, which, added to their pendent, arching habit, render this Thistle a really charming subject for room decoration. It may be grown in small pots for the convenience of placing it in ornamental vases, and the soil should be loam, peat, and sand, in the proportion of two parts loam to one of peat and sand; the drainage must be perfect, and during the time it is growing water must be freely supplied, but during winter, when at rest, just sufficient to keep it alive is all that is necessary. It will strike tolerably free from cuttings made from the small side shoots, but the stout main shoots will not strike readily. It is a native of the Cape de Verd Islands, and may be grown in a frame or an ordinary greenhouse.

House and Window Gardening.

Window Plants.—From week to week I have read in GARDENING ILLUSTRATED various complaints from amateurs as to the non-flowering of their plants. Perhaps two or three simple rules for their guidance would not be objected to. The first is, daily attention. Every morning spend half an hour looking closely into their wants; see if they have enough of light and air; look well if that pest the greenfly has attacked them, and carefully pick the insects off; examine the under part of the leaves especially. Secondly, do not deluge your plants with water. I have seen poor plants soaked with moisture day after day, even in winter, and the consequence, of course, was they died. Give plenty of air, even in winter, and never keep a plant in darkness. I have been window-gardening for several years, and have reared most beautiful healthy plants, such as zonal and Ivy-leaved Geraniums, Musk, Yellow Broom (Cytisus racemosus), and other plants, which have been admired by those who have been able to buy beautiful specimens, but lost them very soon for want of a little attention. Some people buy lovely plants, and admire them very much, but place them, perhaps, behind a curtain away from the light, and where they rarely get a breath of pure fresh air, and with this treatment their owners expect them to give forth beauty. I have one window facing south, and I have a very cool greenhouse (too cool, I fear) facing the north to keep those plants in that I do not require to adorn my sitting-room. I have not said anything as to soil; I often find it difficult to get all that is required, but I am on the sea-shore, and I use very largely sea-sand. —ERINA.

Keeping Cut Flowers Fresh.—With regard to the length of time during which cut blooms will remain fresh much depends on the manner and at what time they are collected. Flowers should, if possible, never be cut during the heat of the day, but of all things avoid doing so in sunshine, as they droop almost at once, and even if they regain their freshness when placed in water, it lasts but a short time. Flowers should always be cut with a sharp knife, not with a pair of scissors, and the stems should be severed in a slanting direction; the advantage of doing so is that when the little vessels of the stem are cleanly cut, they draw up moisture freely, which keeps the flowers fresh; but if bruised, absorption is stopped, or at least impeded. The water in which flowers are arranged should be changed every alternate day, if not daily, and the stems of the flowers should be cut afresh.—A. H.

Hemlock Leaves and their Uses.—Permit me to direct attention to the usefulness of the leaves of Hemlock for decorative purposes; small leaves of this plant have a pretty light Fern-like appearance when interspersed amongst flowers in a vase. The foli-

age of this plant when growing in dry sunny spots assumes a crimson-brown tint, which for the decoration of light-coloured fruits is very effective.—A.

Panicum variegatum.—Where indoor decoration has to be provided, plants of a trailing or pendulous habit of growth are necessary for furnishing the edges of jardinettes or stands, and this is an invaluable plant for the purpose, its habit of growth and beautiful variegation being in every way perfect. I insert three cuttings in a small pot, and, as soon as they get a few inches long, peg them down close on the soil, when they throw out a number of side shoots and form excellent plants without any further training.—J.

Campanula fragilis.—The old drooping C. fragilis, now seldom met with, is one of the most beautiful long-blooming plants which we have for windows, where its profusely-flowered pendent shoots can be seen to the best advantage, and its colour, pale blue, from its comparative scarcity, makes it still further desirable. It strikes freely from cuttings put in any time during the spring and summer in ordinary soil; small pots 7 in. or 8 in. in diameter are sufficient for even large specimens. The plants will last for a number of years.

Striking Cuttings in Windows.—The cuttings of many plants from roots much better in a room when placed in water than when planted in soil. A phial is filled with water and the cutting inserted in it to the depth of about an inch. Paper is wrapped round the cutting so as to close the mouth of the phial, which is then placed in a sunny window. Should the water evaporate too much, luke-warm water is to be added. Cuttings of such plants as Oleander, which are slow to root, are very successfully treated in this way. When the roots have been developed inside the phial to such a degree that they will not pass through its mouth, the phial is to be broken, and the cutting thus released may then be planted in soil.

Spiræa palmata as a Window Plant.—Many readers will doubtless be glad to know what a valuable plant the Spiræa palmata is for growing in rooms. About three weeks ago I brought a nice plant into the house from the conservatory, just as the trusses were opening, and it is still in full bloom. This species flowers a little later than the Spiræa japonica, but it is much superior to it, as the large branching heads (not spikes) of bright rosy-pink are of such an uncommon shade, and the pale green leaves contrast so beautifully with the flowers. It must, indeed, prove an especial favourite to everyone who grows it and sees it in its full beauty.—W. A. G.

Table Plants.—The genus Dracæna furnishes many plants whose brilliant-coloured foliage and graceful habit render them all that can be desired for table decoration, and they will generally succeed well when grown in soil consisting principally of turfy loam with a portion of peat, leaf-mould, and sand. They may also be rapidly increased by means of cuttings or eyes, as the tops of over tall specimens may be cut off and potted in sandy soil, in 3-in. or 4-in. pots, and placed under a hand-glass in a stove, where they will root in a fortnight or three weeks. Large plants, too, cut down to nearly the surface of the soil will soon produce several young shoots, that can be formed into cuttings, which soon take root, and the stems of plants so cut down may be split down the centre, when each division, cut into pieces of about 1 in. in length, containing an eye or undeveloped bud, will strike if gently pressed into pots or seed-pans filled with a compost formed of sifted leaf-soil and sand plunged in a mild bottom-heat and covered with a hand-glass. Some few of the species will succeed in a greenhouse temperature, but the sorts best adapted to table ornament, such as D. Cooperi, rubra, terminalis, gracilis, and others, require a warmer temperature.

Hardy Purple Clematis (C. Viticella venosa).

Clematis Viticella venosa.—This is one of the hardiest of Clematis, and one of the best for climbing over hedges, low shrubs, &c. Plants of a good size may be grown in tubs or pots, and are excellent for balcony decoration. Its flowers are of a reddish-purple colour and very freely produced. It will grow in any ordinary garden soil provided it is well drained. The best time to plant is in autumn or in spring.

Sweet Peas in Covent Garden.—These are now plentiful in this market; the pure white-flowered forms and the Scarlet Invincible are the kinds liked best, on account of their decided colours. They are the produce of seeds sown in November, a time when many sow their first crops of culinary Peas. As soon as they are above ground they are earthed up and staked. As the weather gets warmer the plants grow apace, and from June onwards they yield a good supply of bloom, which is kept regularly cut three times a week, and the better this is attended to the longer the plants continue to grow and yield blossoms. For later supplies seeds are sown in succession during the spring months, and in dry seasons they are given copious supplies of water.

ANSWERS TO QUERIES.

2509.—**Hoya carnosa.**—The plant in question being pot-bound, shift it at once into the next-sized pot in a compost of half loam and peat, adding thereto a good sprinkling of silver sand. This plant thrives best in a structure where a moist, genial atmosphere prevails. It may be utilised as a climber to cover a back wall, or may be trained round a pillar. It may also be trained about a trellis consisting of a few stout sticks placed round the edge of the pot.—C.

2579.—**Treatment of Auriculas.**—Unless seedling Auriculas are now strong they can hardly be expected to flower next spring, but if good robust plants then they may do so. Pot up at once into 3-in. pots in a mixture of good loam and a little rotten manure and sand. Fix them firmly, and place in a cold frame either on ashes or boards. Shade on hot days, and give all possible air, and keep well watered. A frame that looks to the north and is partly shaded on the south is the best place until the end of September, when the plants may be removed into a greenhouse, or the frame may be put into a warmer position, and the plants replaced in it.—A. D.

2570.—**Balsams for Show.**—If Balsams are in 9-inch pots they should not require any further potting. Such plants would be best now in the open air where they may be kept sturdy and robust. If kept under glass for the next six weeks they must inevitably become drawn. The plants might now have the points pinched out, and be occasionally treated to some stimulant in the shape of liquid manure, that might be increased in strength slightly as the roots fill the pots. All expanding flowers should be pinched off till three weeks prior to the time of the show. If the plants are put under glass about ten days before the show date it should suffice to give the flowers good finish.

2571.—**Window Plants.**—It is most probable that the temperature of the room in which your window plants are kept is in winter

too low, and thus the loss of leaves. Although Fuchsias naturally lose leaves on old plants if the roots get dry, this is, however, no misfortune if the plants be repotted in the spring just as the buds begin to burst into leaf. Geraniums ought not to lose their leaves excepting some of the lower ones, and if they lose all it is too evident that the room gets far too cold, or it may be that if there is in it a fire during the winter that the atmosphere becomes too dry and parched. A regular temperature of about 45° should suit the plants well during the winter.

2517.—**Wireworms in Gardens.**—As fast as portions of the garden become empty, it well be well to fork it up roughly and give a good dressing of soot. Then fork it in and well mix it with the soil. Salt is a good dressing, but this should be applied in the early spring, it is too cold for winter application. It is also a good plan to bury a few inches deep in the soil pieces of Potato, Carrot, Turnip, or other roots and pieces of oil-cake or any soft substance, and lift them occasionally, probably to find them full of worms. Well hardening the soil is also useful, but it is not easy to do with garden crops.

2526.—**Abobra viridiflora,** Canarina campanulata, and Medeola asparagoides.—Abobra viridiflora should be kept quite at rest during the winter in a cool house. When it has fairly started into growth in the spring, and as soon as all danger of frost is past, plant out in the open air in a piece of well-stirred, somewhat light soil, placing some kind of support for the plant to climb upon. Medeola asparagoides is an elegant plant, best suited for basket culture. As soon as the plant shows signs of growth shake away as much of the old soil as possible, and place it in a basket in loam and leaf-mould, well sanded, in equal parts. Hang near the roof in the greenhouse and water carefully. Canarina campanulata may be treated in much the same way, only using a pot instead of a basket, and giving good drainage.—J. C.

2510.—**Arbutus.**—The Arbutus is by no means fastidious with respect to soil, preferring however, a good sound loam. If the natural staple is of a very poor and parching nature, take it out to the depth of 2 ft., mix with the excavated soil a little well-rotted manure, loam, road scrapings, or any good material which may be at hand. Planted in such a compost, the tree will be afforded a good start in life, and will, when it has once attained good root-hold and strength in proportion, take care of itself. In the case of established specimens a mulch of loam and rotten manure would be of advantage. The plant in question has probably suffered from the severity of last winter, and should be cut back at once to the uninjured portions.—J. C.

2524.—**Geraniums not Blooming.**—If your Geraniums are of the ordinary free-flowering kinds, they should, and probably will as the season progresses, flower freely. At the same time, this tribe of plants should not be placed in the shade ; they are children of the sun, enjoying and never flowering so profusely as when subjected to its full influence. Those that are root-bound should either be shifted into the next sized pot, or be top-dressed with some concentrated manure. Up to the present, the season has hardly been favourable to a good display of Geranium bloom in the open air.—J. C. B.

2599.—**Marsh Sundew.**—The Sundews are marsh or bog plants, and when grown artificially the condition of their natural home should be imitated as far as possible. In a bog on a very small scale it is not easy to secure that humidity of atmosphere the plants have at home ; hence the most success is attained by growing them in pots in a cold frame surrounded by or plunged in Moss. The plants should, of course, be planted in peat, that being the most retentive soil, and be kept constantly moist, the pots being placed in saucers of water. I suppose "E. C." is aware of their insect-eating propensities.—E. H.

2585.—**Mushrooms in Passages.**—Mushrooms could readily be grown in the passage leading to an ice well ; but if there was ice preserved in the well at the time, opening the house to get the Mushrooms would waste the ice a good deal. The material employed, short horse dung, should be collected and dried by fermenting in some sheltered place, turning it over twice at weekly intervals. The bed should be made as firm as possible, and be spawned when the heat is between 80° and 90°, with a steady tendency downwards. When the spawn is fairly working, which can be known by the white threads radiating from the lumps of spawn into the manure of the bed, 2 in. of fresh loamy soil should be placed evenly over the bed and made firm with the back of the spade. No water will be required till the bed begins to bear. When exhaustion sets in, tepid water will restore its energies. The bed could be made up at once without drying or fermenting the manure if about one-fifth of fresh loam was mixed with the latter.—E. H.

2588.—**Plum Trees not Bearing.**—If neat, orderly trees are wished for the branches that grow out at right angles from the wall must be pruned back ; in fact, they ought not have been allowed to grow so far, as when the strength of the tree is frittered away in making breast-wood the main branches on the wall must suffer from lack of nourishment ; this is the result invariably. Balance of power in trained trees is a necessity of their existence. "Prune in summer for fruit and in winter for wood" is an old saying, and contains much truth. The fruit will come on last and previous year's wood.

2598.—**Blood and Bone Manure.**—The quantity of any given manure that can be profitably used must depend as much upon the nature of the crop as upon the character of the soil, but in vegetable culture in gardens much more may be given than would be desirable in farm practice. Thus in the case of the manure named from 6 lb., to 8 lb., or even 10 lb., per square rod may be used in special cases. It should either be used in spring when the crops are sown, or else as a top-dressing after the plants are up. Where heavy dressings are given divide into two equal portions, and use one with the planting of the crop, and the other as a top-dressing about May or June.

2527.—**Cape Gooseberries.**—Shift into larger pots if they will require more root room, and as soon as the roots are active again, move to a position near the glass in a cooler house than a Cucumber house, and where the atmosphere is less moist. Keep them well supplied with water and they will bear as soon as they are strong enough in autumn. Pot in turfy loam and manure, two parts of the former to one of the latter.—E. H.

2573.—**Ants in Gardens.**—The total extermination of ants, even if it were desirable, is a difficult matter, but they may be reduced in numbers by trapping them perseveringly, by frequently disturbing their nests, and by scattering guano and other distasteful substances about their runs. Ants are very partial to sweets of all kinds, and this fact may be so employed as to lure them to destruction. They are also fond of raw fresh meat. Where sparrows are too numerous a few may be shot, their breasts laid open with a knife, and their bodies laid in the run most frequented by the ants. The traps must be visited frequently, and the ants destroyed by brushing them into boiling water. Try paraffin oil.

2513.—**Renovating a Garden.**—Can you obtain any clay or stiff loam? if so, cart it on in autumn after the land has been rough dug, and leave it exposed all the winter. In the spring it will crumble down and easily mix with the soil and ashes, and must improve it. Trenching it up 2 ft. deep will mix the ashes with a greater bulk of soil, and therefore improve its staple.—E. H.

2572.—**Forming a New Garden.**—If the land requires draining do it at once, 4 ft. deep, securing a good outfall, so that the water may pass rapidly away. Then decide upon the boundary fence, whether brick wall, wood fence, or hedge shall be used. The only advantage a wall or a wood fence possesses over a good hedge of living plants is its adaptability for the rearing and training of fruit trees against the sides. If economy is an object, it is as well to bear in mind a garden surrounded by a good hedge will be nearly as useful as if walled in. Of course the hedge must be kept well trimmed, whatever it may be composed of. Next it must be decided about the paths—their number, width, and composition. If the garden is of regular outline, then divide it into four equal parts, with intersecting paths from 4 ft. to 5 ft. wide. If it be walled in then a border in proportion to the height of the wall must be left for the wall trees. The best system to adopt for the fruit trees in the open garden is the espalier. Have wires strained where it is intended to plant the trees, and plant and train the trees to them. Bush fruits may either be planted all in one place or in lines by the side of a path or paths. But before a tree is planted the ground should all be trenched up 2 ft. deep, without bringing any bad soil to the top. The garden should first be fenced in, then the paths laid out, and the ground trenched. This work may be done as soon as convenient ; then fix the espaliers, and plant the fruit trees in November. If the garden be laid out at once many crops of autumn and winter vegetables may be got in now or shortly.

2577.—**Figs not Fruiting.**—The Fig tree is making too much wood ; lift and prune the roots in autumn. If the roots could be surrounded by a wall, all the better. At any rate bring the roots near the surface, work in at the same time some fresh loam and old plaster or mortar, making the border firm to keep the roots at home. Prune now, by thinning out the young wood, leaving enough to furnish the space, but no more. The moderately strong short-jointed shoots are the most fruitful. —E. H.

2516.—**Evergreen for Covering Fence.**—The Garrya elliptica when established is a rapid grower, and has grand foliage, and the catkin-like flowers are pretty and striking. The Japanese Privet will also rapidly cover such a fence ; and if something a little better is required, plant a row of Cupressus Lawsoniana 3 ft. apart, and keep them trimmed in according to taste.

2499.—**Propagating Syringas.**—They often throw off suckers that may be taken off the parent plant with roots. Syringas may also be easily increased by layering. The autumn is the best time to perform both these operations.

2498.—**Buddlea globosa.**—By layers ; also by cuttings under a hand-light in free, sandy soil early in autumn in a shady place.—E. H.

2500.—**Flowers for Button-hole.**—All kinds of Pelargoniums, including the Oak-leaf section for the sake of their foliage, Tree Carnations, double Cinerarias, Deutzia gracilis, Abutilon Boule d'Neige, Bouvardias planted out in summer and potted up in September, Cyclamens, Diosma ericoides, for its sweet foliage and neat flowers in spring, Jasminum gracile, Erica autumnalis and Wilmoreana, Lily of the Valley in pots, Heliotrope, Mignonette, Primroses of various kinds.—E. H.

2497.—**Fungus on Lawns.**—Water the places with strong lime and soot water in spring, so as to thoroughly saturate the ground. It may be done now.—E. H.

2501.—**Roses not Blooming.**—The Roses have perhaps been overwatered and the soil is sour. The presence of mildew seems to indicate as much. Aërate the surface by stirring, and syringe the mildewed parts with sulphur and water, or dust flour of sulphur over them. Leave the young wood the full length, and expose it to the full light. Doubtless you will have plenty of flowers in spring.—E. H.

2514.—**Ants and Strawberries.**—It will be difficult to entice the ants from the Strawberries now without you can offer them something still more tempting. They are fond of raw meat, and perhaps that may prove a more tempting bait in a Strawberry bed than treacle. Gather up the baits often and kill the ants. Find the nests if possible and destroy them with boiling water. Dust guano on their runs.—E. H.

2589.—**Fruit Falling from Trees.**—Either the wood must be unripe or the soil must be deficient in lime. The former may arise from deep rooting in an ungenial soil, and the proper remedy is to lift the roots nearer to the surface, adding fresh loam and old mortar to the roots. This treatment will also meet the case of a deficiency of lime in the soil.—E. H.

2519.—**Pruning Currant and Gooseberry Trees.**—Thin out the young shoots on the Currant and Gooseberry bushes now, so as to let in air and sunshine, but do not shorten those left till the leaves fall ; then the unripe points (if any are unripe) may be cut off ; this is the best plan to adopt where plenty of fruit is wished for.—E. H.

2529.—**Grapes not Progressing.**—A little fire will be useful in dull weather, but that is not the cause of the Grapes on one Vine doing so badly, whilst the other in the same house is doing so well. Are the kinds identical? It will not be easy to say what is the matter without seeing them. There is probably something wrong at the roots.

2505.—**Beta Cicla braziliensis.**—It may be sown in drills in the open air in April, and the best coloured plants selected to plant out finally. If the plants are required for conservatory decoration in pots, they should be lifted and potted in good sized pots before they get too large, or they may be grown on in pots from the first. They are plants of easy culture.—E. H.

2445.—**Skeleton Leaves.**—These are prepared by simple maceration, *i.e.*, steeping in water until sufficiently rotted to allow of the skin and soft parts of the leaf being removed from the woody fabric or skeleton of the leaf. Take a soup plate or other flat and deep dish and lay the leaves in it layer upon layer. Cover them quite over with rain water, and let them so remain, occasion-

ally shaking or moving them about, so that all may be equally wetted. Take care to keep them always covered with water; if kept in a warm place they will rot sooner. At the end of three or four months, or perhaps earlier, take a leaf out, lay it on a sheet of blotting paper, and with a small forceps pick off the skin and all soft parts; if they will not separate easily the leaf must be returned to the water for further rotting. When nothing but the skeleton remains, place it to dry between blotting paper; the process requires delicacy of touch, and is not pleasant to the smell.—J. H.

2508.—**To Make Putty.**—Procure 7 lb. of whitening and 1 gill or raw linseed oil; first dry the whitening and make it fine, then divide it into two parts; mix one of the parts with the oil on a flagstone, and use up the other part to make it the proper consistency; beat with a hammer, and work up until it will not stick to the hands.—HEMINGBRO.

2518.—**Plants for Exposed Beds.**—Cotoneasters should do well in exposed beds, and so should the green Euonymus, also the yellow-flowered Mahonia or Berberis aquifolia. The carpet Juniper makes a good mass of green leafage, and so do the most robust forms of Ivy. Any hardy shrub or creeping plant that will give a constant leafage is far preferable to flowers of any sort that only look and are always miserable.

2521.—**Nertera depressa.**—The Nertera depressa must be grown in warmth during the winter, so that it shall blossom and berry early. If the plants are then gently hardened, they will thrive fairly well in the open ground during the summer, but the season must be a warm one. The trouble involved in the culture is usually far beyond the benefits resulting. Probably a change to a temperature too low is the cause of your plant doing badly. It is only experienced growers who do this plant well.—D.

2578.—**Blight on Asters.**—With the application of some guano or Clay's Fertiliser and well hoed into the soil, Asters ought to grow out of the blighted condition in which yours are got. If each plant could be bent into a dish holding a solution of Tobacco-water and soft soap the fly would soon be killed, but the plants should have a good washing either by rain or from the waterpot an hour after this application. If dipping is not possible, then try to wash the underside of the leaves with a brush and the solution.

2580.—**Pansies for Show.**—A thin deal box with sloping top pierced at intervals of 3 in. with holes, beneath which are fixed firmly small tin tubes which will hold water, is the best possible medium in which to exhibit Pansies. When the blooms are placed in, and some soft tissue paper laid over, a gentle pressure may be applied for a short time to flatten out the flowers and make them set well.—A.

2507.—**Plants for a Fern Case.**—No doubt the reason that your Ferns thrive badly is that they are in unsuitable soil. If you were to shake them out and get some nice sweet peat soil with a little turfy loam and leaf soil, mix it well and repot into clean pots, no doubt the plants would improve. The Fern case might be the better for a thorough cleansing. If Ferns will not thrive in such a case, other plants cannot be expected to do so.—A. D.

2520.—**Christmas Roses in Pots.**—A Christmas Rose in a large pot simply needs to be stood out-of-doors on a piece of slate in a shady place and kept well watered. If the roots have become pot-bound, the soil on the top to the depth of 1 in. may be picked out and some fresh put into its place. The plant should be taken into the greenhouse again early in November.—A. D.

2584.—**Disease in Cucumbers.**—The soil is probably too rich, and the atmosphere too close and moist. Ventilate more freely, especially early in the morning, to let out the stagnation that has accumulated during the night. Whenever disease shows itself in the stems, dress with quicklime, covering completely the diseased parts with the lime, renewing it occasionally until the plants are restored to health.—E. H.

2583.—**Apples and Pears for Town Gardens.**—Apples: Manks Codlin, Lord Suffield, Warner's King, Kentish Fillbasket, Cellini, Quarrenden. Pears: Williams' Bon Chrétien, and Louise Bonne of Jersey.—E. H.

2586.—**Carnations and Picotees.**—Six good Carnations are as under:—Sybil, rose flake; Clipper, scarlet flake; Admiral Curzon, scarlet bizarre; G. F. Wilson, purple flake; Riffeman, crimson bizarre; and Sarah Payne, purple bizarre. Six good Picotees;—Leah, Constance Heron, Miss Frowd, Mrs. Allcroft, Empress Eugenie, and Lerlina. Carnations, whether from pipings or layers, should be kept in a greenhouse or frame for the winter, especially if good kinds.—A.

2515.—**Management of a Room Fernery.**—A Fern case where the plants become mouldy shows that more air is wanted, and that the soil is either sour or kept too wet. Perhaps a thorough change of soil, with the case well cleansed, and afterwards more ventilation, would make matters all right in the future. It ought not to be difficult to keep down green fly in a Fern case either by smoking with tobacco or cleansing the plants with a decoction of weak Quassia chips.—D.

2596.—**Sowing Annuals and Perennials.**—It is very doubtful whether, in an exposed position, annuals would stand the winter, and it is now too late to sow any kinds of biennials or hardy perennials; but Foxgloves, Delphiniums, Pentstemon digitalis, Polyanthuses, Pansies, Sweet Williams, and similar things might be tried. If any annuals are sown, let them be Candytuft, Nemophylla, Mignonette, Limnanthes Douglasi, Silene pendula, and Myosotis sylvatica, all of which are fairly hardy.—A.

2525.—**Fern Fronds Withering.**—This Fern being hardy requires plenty of air. Place it out-of-doors at night, and do not water quite so much. Ferns like plenty of moisture at the root, but are impatient of anything like stagnant water round them. Too much moisture and too little fresh air is the cause of the fronds drying off.—J. C.

2512.—**Anthericum variegatum.**—Plant out in a free, open situation. This family of plants thrive best in a free, rather light soil. If the natural staple should be of a heavy, retentive nature, mix with it some river sand, leaf-mould, or wood ashes.—J. C.

2523.—**Rose Tree Dying.**—Many kinds of Roses are unfortunately subject to go off in the manner described, especially when a sunless summer is succeeded by a severe winter. Thousands of plants have died this spring in a like manner. The best way will be to root it up, and plant another tree in its place.—B.

2503.—**Seedling Pomegranates.**—Pot off at once into small pots, in a compost of half fibrous loam and half leaf-mould. Keep them in a frame or greenhouse until the latter end of August, and then place them in the open air until the latter end of September. Winter in a cool house, and shift them in March.—J. C. B.

2600.—**Propagating Carnations.**—*C. C.*—These may be propagated from cuttings or layers in autumn or spring. A frame is best for them, but not absolutely necessary. The best soil in which to strike the cuttings is sifted loam and peat in equal parts, adding plenty of silver sand.

2601.—**Lilium auratum Failing.**—I have a Lilium auratum that went on well till about 18 in. high, when the leaves turned yellowish and curled a little, and the flower-buds were gradually destroyed. What was the reason?—W. J. [Something wrong at the root—too much wet or probably some insect eat the bulbs. Turn it out and see.]

2602.—**Sea Sand for Improving Soil.**—*M. E. O.* Sea sand would certainly be beneficial if applied to damp heavy soil, but if the land is very wet your only course is to drain it.

2603.—**Striking Pelargoniums.**—*F. E.*—These will strike readily at this season in the open air in sandy soil and in a partially shaded situation.

2604.—**Sycamore Tree Leafless.**—*Dalstonian.*—If the tree is almost leafless it must be almost dead, but we could not tell you the reason of its dying unless we knew some particulars as to soil, &c., in which it is planted.

2605.—**Removing Strawberry Roots.**—*A. L. W.*—These may be successfully moved at any time after they have done fruiting. Dig them up and shake the soil from their roots. Prune back some of the longest roots, and plant in deeply dug, well manured soil. Make the ground firm after planting, and see that the plants do not suffer from want of water.

2606.—**Uses of Salt.**—*Enquirer.*—If you sow the salt on the ground some little time previous to cropping, it will be perfectly safe and do much good.

2607.—**Cactus.**—*A. A., Stafford.*—We cannot tell the name of your Cactus from such a description as you give. You would do well to take it out of the pot and remove most of the soil from its roots, and repot it in turfy loam and broken bricks, providing also plenty of drainage. Use a pot just large enough to admit the roots comfortably.

2608.—**Radishes and Lettuces.**—I have a garden in the north suburb of London, and cannot get these vegetables to grow well. The Lettuces will not make hearts.—R. M. P. [Radishes during summer require a rich soil and abundance of water. Lettuces also require a deep rich soil, and seed for summer crops should be sown where they are to remain, thinning the plant out to 12 in. or more apart according to variety grown. Frequent hoeing between the plants is also a great advantage, and the soil must be kept moist.]

2609.—**White Substance on Plant Leaves.**—*R. C. C.*—All we can see the matter with the leaves sent is that they are very dirty. The white substance is caused by water in which chalk exists. The first shower of rain that comes sponge the leaves, and afterwards place them out of doors for an hour, and all your troubles in that direction will disappear.

2610.—**Cucumbers Turning Yellow.**—*T. T.*—Give plenty of air and keep the points of the young growths pinched out one point beyond the fruit.

2611.—**Fuchsias Losing their Buds.**—*T. H.*—Too little air and too little water will cause this; so will too much manure water.

2612.—**Seedling Carnations.**—*H. W. S.*—Carnations raised from seed bought from an ordinary seed shop are almost certain to be variable as to kinds and to time of blooming.

2613.—**Cocoa-nut Fibre in the Garden.**—*Ll. T. J.*—Cocoa-nut fibre spread on the surface of the soil is beneficial to all outdoor crops during summer, inasmuch as it keeps the soil moist. If the land is heavy the fibre may be dug into it in autumn, but if light already the fibre would be better raked off.

2614.—**Verbenas not Blooming.**—*Apis.*—Verbenas bought in the market in boxes are often seedlings, not cuttings, and such plants grow rank and do not flower so freely, or so early as plants raised from cuttings.

2615.—**Lapageria rosea not Growing.**—I have the above-named plant in full bloom and good health, but it has not grown an inch this summer. Will it shoot after blooming? It is well watered and looked after according to the best authorities, but I want it to cover more of my greenhouse roof.—W. W. [The profuse bloom of the plant has doubtless to some extent kept the growth of the plant in check. Cut off the flowers as soon as they show signs of decay, and the plant will doubtless grow freely when it has ceased blooming.]

2616.—**Striking Cuttings of Shrubs, &c.**—Would cuttings of the following put in now under handglasses be likely to grow: Jasminun nudiflorum, Jasminum revolutum, Pyrus japonica, Escallonia macrantha, Garrya elliptica, Lonicera japonica, Weigela rosea, double yellow Wallflower?—W. H. B. [Yes. Put in cuttings of this year's growth, selecting those that have half ripened, *i.e.*, firm wood. Use sandy soil made firm by treading, or with the back of the spade, and insert the cuttings firmly in the soil. Water well and keep close till rooted, then give plenty of air. Sprinkle with a fine rose occasionally. A shady situation is the best

2617.—**Keeping Vegetable Marrows through the Winter.**—*Juan.*—Expose at once a few Marrows to the sun by placing them on bricks or pieces of wood They will then ripen well. Cut them as soon as wet weather sets in in autumn, and place them on a dry, airy shelf in a room. They will then keep for months.

2618.—**Making a New Garden.**—*Mr. N.*—We cannot undertake to forward addresses of our correspondents. Kindly send any answer on the above subject you may think proper for insertion in our columns in order that others may have the benefit of your experience besides the person who asks the question.

2619.—**Pruning Roses.**—I planted a Rose (Maréchal Niel) in the autumn of 1878. In the spring of 1879 I cut it back, and during the summer of that year it made a rod 12 ft. or 13 ft. long. This summer each bud has produced a shoot with a Rose; how are these shoots to be treated?—DEVONIAN. [Fasten the shoots so that the wind will not blow them about. Keep the leaves free from mildew by giving water at the roots; and in spring you may shorten some of the shoots back, and you ought to get a good bloom next summer.]

2620.—**Strawberries for Succession.**—*M. T.*—If you plant the following kinds you can have a succession of good Strawberries from June to September: 1, Vicomtesse Héricart de Thury or Keen's Seedling; 2, President; 3, Sir Charles Napier; 4, Sir Joseph Paxton; 5, Sir Charles Napier; 6, Elton Pine. They come into use in the order named. The last-named should be planted in a shady border.

Rose Cuttings.—*A. A., Stafford.*—See answer 2539, July 10.

Book on the Turnip.—*T. H.*—We know of no book specially devoted to this. There have been several excellent articles on the Turnip in GARDENING lately.

Seedling Viola.—*T. S.*—The flowers sent are excellent.

Books.—*B. N. C.*—There is no book of the description you name.

Names of Plants.—*Triptolemus.*—We cannot name the plant without flowers.——*Erina.*—The Toad Flax (Linaria cymbalaria).——*R. Barber.*—Agrostemma coronaria; it is best treated as an annual, although it is biennial in some soils.——*D. E. F.*—White—Campanula urticifolia; red—Betonica officinalis.——*W. S.*—Hæmanthus Kalbreyeri.——*W. W.*—1, Anagallis tenella; 2, Mesembryanthemum species; 3, Mesembryanthemum cordifolium.——*Sion House.*—Symphoricarpus racemosus.——*H. S. G.*—Adiantum setulosum.——*Mrs M.*—2, Campanula persicifolia flore-pleno; 2, Ruscus aculeatus; 3, Escallonia macrantha.——*Z. X. O.*—We cannot name Pelargoniums; send them to some one who makes a speciality of them.——*G. H. W.*—Abutilon Thompsoni; it will grow freely in a window or greenhouse in any kind of well-drained sandy soil.——*E. B.*—Escallonia macrantha; cuttings taken in August would probably root freely in sandy soil under a handlight in a shady situation.——*P. D., Folkestone.*—1, Begonia Weltoniensis; 2, send better specimen; 3, B. semperflorens; 4, B. metallica; 5, B. nitida; 6, B. Saundersi.——*East Sheen.*—Tarragon.——*S. C. K.*—Apparently Viola gracilis.——*Campanile.*—The leaf sent is that of a Gloxinia, an article on which you will find on our front page, July 17.——*J. Daniel.*—Athyrium Filix-Fœmina cristata.——*Dianthus.*—Campanula glomerata speciosa.——*Omega.*—Limnanthes Douglasi, a well-known hardy annual.——*Wildflowers.*—The large yellow flower, Telekia speciosa; the other Salvia pratensis.——*M. D.*—Funkia subcordata.

QUERIES.

2621.—**Onion Maggots.**—Can any one tell me of a preventive and a cure for this pest? I have tried soot without success.—WELSHMAN.

2622.—**Jessamine not Flowering.**—I have a white Jessamine growing against a south-west wall, but it never flowers. How can I induce it to bloom?—MED.

2623.—**Plants for Heated Conservatory.**—What kinds of plants are best for growing on rockwork in a conservatory? I should like some of the different sorts of Palms, also India-rubber plants and Ferns and Roses for the sides of the conservatory.—M. A. S.

2624.—**Ferns for a Vinery.**—Will any one give me a list of Ferns suitable for growing in a Vinery? and also how they should be treated? The Vinery has a southern aspect.—M. C.

2625.—**Uses of a Frame.**—Will any correspondent give me some information as to how I may best utilise a garden frame which I have lately had made. It is a double light, about 8 ft. frontage by 7 ft. depth. What kind of a bed should I prepare? and what surface soil? I have a small garden 90 ft. by 15 ft., and wish to use the frame for plants as a feeder to the garden.—C. C. W.

2626.—**Potatoes Diseased.**—Can any one suggest the cause of my Potatoes failing? The tops turn brown when nearly full grown and the Potatoes are all diseased. The land is considered good, and Cabbage, Onions, Carrots, and all other things do well in it. This is the third year the Potatoes have failed. We use horse manure which has a lot of sawdust in it.—ALPHA.

2627.—**Best Climbing Roses.**—What are the best Roses for climbing both out-of-doors and in the greenhouse, especially dark coloured ones?—B. N. C.

2628.—**Mildewed Strawberries.**—What causes my Strawberries to become mildewed while ripening? The plants are old and rather thick, but as they are a fine sort and bear well I am unwilling to disturb them unless absolutely necessary. I shall be grateful for any hints.—H. B. C.

2629.—**Vallota purpurea in Windows.**—I had two of these given me three years ago; they were then tiny offsets. I placed them both together in a 4-in. pot; they have now fine, broad, healthy-looking leaves, except that the very outer ones always turn yellow at the tip and gradually die down. They show no sign of bloom, and keep throwing out tiny offsets from the bulbs, which

I take off and plant round the margin of the pot. Some months ago I gave them occasionally, but not regularly, strong liquid manure, but discontinued it, as I thought they did not look so well afterwards. I should be glad if some one would kindly tell me what kind of soil they require and general treatment. I have no frame or greenhouse, only airy windows; aspect, south-west.—A. A., *Stafford.*

2630.—**Propagating Virginian Creepers.**—How can I strike cuttings of Virginian Creeper in pots? and what is the best time and soil?—AUTUMNAL.

2631.—**Cut Roses in Water.**—In Hertfordshire I have repeatedly seen Roses improve and expand after being put in water in specimen glasses to adorn the rooms. With me, in the West Riding, they almost always begin at once to shrink and fail, and seldom last to a second day. The water seems clear, but, being rain water, has, of course, some soot in it. Can any reader suggest the admixture of any chemical or other ingredient that would impart to the water a corrective or stronger sustaining quality?—H. B.

2632.—**Gardening in Town.**—In the midst of the jewellery district of Birmingham, and therefore subject to smoke and acid fumes, I have a nice little patch of land on which I wish to grow plants if possible. The sun shines on half its width the greater part of the day. What plants would be best, both flowering and fine foliaged, also creepers for walls (north and south), also a tree that would grow under such circumstances?—T. J. F.

THE HOUSEHOLD.

STRAWBERRIES.

Strawberry Drops.—Weigh two ounces of Strawberry purée—that is, the thick juice of Strawberries that have been rubbed through a fine hair-sieve with eight ounces of coarsely-sifted white sugar. Stir the mixture over the fire with a wooden spoon till it has become liquid and is on the point of simmering. Take it off the fire, stir it briskly for a few minutes, then let the drops fall slowly out of the pan upon a baking-sheet. When cold, remove them with the point of a sharp knife, and put them in a warm place to dry.

Strawberry Fool.—Take a quart of picked Strawberries, ripe, and finely-flavoured; put them into a saucepan with a quarter of a pound of white sugar; cover them closely, and let them stew gently for ten minutes, stirring the fruit now and again to keep it from burning. Rub it through a fine hair-sieve with a wooden spoon, and when it is cold stir into it as much new milk as will make it of the consistency of custard. Serve quite cold. If cream is not to be had, and a rich dish is required, the yolks of two eggs may be mixed with the milk, and the custard may be stirred over the fire till it is on the point of boiling. Time, ten minutes to boil the fruit. Sufficient for six or seven persons. Probable cost, 1s., made with milk only.

Strawberry Hydropathic Pudding.—Take a basin the size that the pudding should be. Put at the bottom a round piece of stale crumb of bread about the size of a five-shilling piece. Place round this, in an upright position, and about 1 in. apart from one another, fingers of bread, 3 in. or 4 in. long, according to the depth of the basin. Pick some Strawberries, and boil them with a spoonful or two of water and as much sugar as will be required to sweeten them pleasantly until they are reduced to pulp. Put the hot fruit gently into the basin with a spoon, so as to disturb the bread as little as possible; cover the surface of the fruit with little odds and ends of bread cut up into small dice, and press the pudding by putting a plate upon it with a weight on the top. Leave it in a cold place for three or four hours, or all night if convenient. When wanted, remove the weight and the plate, turn the pudding upon a dish, and serve. It will come out in a shape. A little custard or cream served with it will be a great improvement. The pudding derives its name from the fact that, thus made, it is served at one or two hydropathic establishments where the patients are not allowed to partake of pastry. Time, about a quarter of an hour to boil the Strawberries.

Strawberry Ice and Vanilla Ice in One Mould.—Flavour three-quarters of a pint of cream with half a stick of Vanilla by boiling them gently together for a short time; sweeten the cream, mix with it the well-whisked yolks of three eggs, and stir the mixture over a gentle fire till it begins to thicken. Strain it into a bowl. Rub ripe Strawberries through a sieve, and take half-a-pint of the juice. Thoroughly mix with this half-a-pint of syrup at 35°, and freeze the two creams in the usual way. Put an ice-mould in ice for a short time. Place in the middle of it a piece of cardboard, cut so as to fit the mould and to divide it into two equal parts. Put the Vanilla ice at one side of the division, and the Strawberry ice at the other. Draw out the separating cardboard, close the mould, and surround it with ice till it is frozen. When wanted, plunge it into hot water for an instant, turn it upside down on a napkin on a dish, and serve. Sufficient for a quart of ice.

Strawberry Ice Cream.—Pick the hulls off a pound of fresh, ripe, finely-flavoured Strawberries, sprinkle half-a pound of powdered sugar over them, bruise them well with a wooden spoon, and rub them through a fine hair-sieve. Mix with the juice thus obtained a pint of thick cream, the juice of a Lemon, and a few drops of cochineal. Freeze and mould in the usual way.

Strawberry Ice made with Jam.—Although Strawberry ices may be made with jam for convenience, they will not equal in flavour those made with fresh fruit. Take half-a-pound of Strawberry jam; mix with it a pint of cream, or milk and cream mixed, and the strained juice of a Lemon. Rub the mixture through a fine sieve into the freezing-pot, and freeze in the usual way. Put it into a mould, set it again in ice, and let it remain until wanted.

Strawberry Isinglass Jelly.—Pick a quart of ripe red Strawberries, put them into a bowl, and pour upon them a clear syrup made by boiling three-quarters of a pound of refined sugar with a pint of water for a quarter of an hour. Cover the dish, and leave the fruit to soak all night. Put two ounces and a half of isinglass into a saucepan with a pint of water which has been beaten up with half the white of an egg. Stir the mixture, and heat it gently till the isinglass is dissolved, carefully removing the scum till it ceases to rise. Strain the liquor through three or four folds of muslin, and when it is lukewarm, mix with it the syrup which has been drained from the Strawberries, half a teacupful of Red Currant juice, and the strained juice of a fresh Lemon. Mix the ingredients thoroughly, put the jelly into a damp mould, and set it in a cool place or upon ice till it is set. If preferred, gelatine may be substituted for the isinglass, and the jelly will then be less expensive. The appearance of the mould will be improved if two or three spoonfuls of jelly are first poured into the mould, allowed to stiffen, then ornamented with large ripe Strawberries, and the mould filled with jelly and Strawberries alternately. Time, eight or nine hours to set the jelly. Sufficient for two moderate-sized moulds.

POULTRY.

Eggs Hatched During the Dog Days.—It is perfectly true that chickens hatched in July and August rarely if ever thrive so well or make such fine birds as those hatched earlier in the year, and for the following reasons: these late-hatched birds get into the scorching sun, which seems to parch their tender skins and prevents the feathers growing so quickly as they should do; then, being hatched so late, they are not half grown when the cold autumn and winter nights come on, and so are unable to withstand the severity of the winter, and many of them die.

Keeping Poultry in Rooms.—It is utterly impossible to keep poultry indoors; they may exist for a short time, but eventually they would die. The natural habit of fowls is to live in the open air, roosting at night and in all weathers among the lower branches of trees, and with the early break of morning to go off hunting for their food. Man has made many alterations in the shape and markings of the different varieties, but he has never succeeded in producing a variety which will live for any great length of time indoors.

Cockerels' Combs.—The comb has nothing whatever to do with the useful properties of the birds. Some varieties, like the Hamburgh, Dorking, &c., have double or rose combs, but these are common to the variety. Of course if pure-bred stock are kept with the idea of exhibiting them, then they must possess the points of the variety; but for breeding purposes, merely for supplying eggs, and for killing, a single-combed cockerel is just as good as one with a double comb.

Cramp in Chickens.—Cramp is generally brought on in chickens by want of sufficient exercise. Birds that have plenty of room to run about at all times never suffer from cramp. We therefore say let them have as much air and exercise as they will take, and they will be free from cramp.

Dropsy in Fowls.—We never heard of fowls suffering from dropsy. Chickens sometimes have little air bladders between the flesh and skin, but these soon disperse on being pricked with a needle, and the chickens are none the worse after the operation.

Pullets Laying Early.—We fancy you must be mistaken in the age of the birds for pullets to be laying when only three months old. We must say it is hardly possible.

HOME PETS.

Worms in Dogs.—The following remedy was used for several years in Brazil, and always effected a complete cure in a Newfoundland, fox terrier, and other dogs: Melt half a pound of mutton suet and one or two ounces of turpentine; when well mixed add two tablespoonfuls of ground glass. Stir until the mixture is cold, or the glass will sink to the bottom. The glass must be crushed and sifted to the finest powder. The dose is a pill varying in size from a Walnut to a large Pea. One should be given every morning for a fortnight to the animal fasting. These proportions will make a large quantity of worm medicine, but even in the Tropics it retained its virtues for a very long time. Sometimes it is necessary to damp the palms of the hands to be enabled to form a smooth pill. A few spoonfuls of milk in which some fresh Mint leaves had been crushed was once given to a motherless pup a month old with very good results.—DONNA DA CASA.

Canaries Unhealthy.—I think E. Underwood has not read the instructions I gave in GARDENING some time back respecting the ailments of our cage pets, or he would, without doubt, have recognised the disease his hen canary is suffering from. Read the back numbers of GARDENING, and you ought to succeed in improving the health of your pets. I should certainly give them a greater variety of seed. Rape and canary seed are hardly sufficient for birds nesting. It will be useless trying to breed with success with birds out of health; therefore give the invalids a rest for a short time. This answer will apply equally to S. Turner. The failure of his success is due to the birds being in ill-health.—A. D'A.

Keeping a Cuckoo.—I caught a young cuckoo in the garden a few weeks ago and placed it in a cage, and it has been regularly fed by a small bird which we call a flycatcher. When the little bird gives up feeding it, how must I keep it? What sort of food must I give it? I should like to keep it alive if possible. Will any one give me a little advice on the matter?—H. T.

Swelling on Bullfinch.—I have a bullfinch which has always refused to wash; its feet have consequently become unhealthy, and are covered with hard horny lumps. Can any one suggest a safe means of removing these?—A. H. L.

Parrots Talking.—Young parrots learn to talk more readily than when old. Place the bird in a room away from noise or disturbance that might otherwise engage its attention, and then for a short time repeat to it, clearly and distinctly, a word or two at a time. Success will follow care and attention in a very short time. —HARRY MOULTON.

Training Love Birds.—Kindness and constant care and attention will alone do this.—HARRY MOULTON.

BEES.

To Make Bees Pay.—I see advice given to begin bee-keeping with a bar-frame hive. I should say, get a good straw hive about 14 in. or 15 in. wide at bottom, and 8 in. or 9 in. high, with a flat top and a hole in the centre about 1½ in. in diameter, to be closed with a cork until required. Have a straw super hive to go on the top. If the bees increase and seem likely to swarm, take the cork out of the hole, and see if they will go into the super. The centre hole is also useful to feed the bees in spring and autumn from a bottle with syrup turned upside-down. After the beginner has got used to handle bees, he can then try a bar-frame; but, speaking from some years' experience, the only way to make bees pay is to feed them well (if required) in September and October and again in March, but not in winter, to get honey in supers or early swarms. Last year in this part of the country, and I suspect most places, bees were a dead loss, but I have kept three good hives through the winter, and have already had two swarms from one of them; I have been offered twenty shillings for the second swarm, and I expect this year to make up for last. Do not let beginners buy a lot of fads, but first learn with a plain hive, and remember that if we take their food from them we must give them plenty in return if we want to make them pay; if possible, see some one actually drive them, put the feeding glasses on, &c. All the grand hives are nice to look at and in theory, but do not pay. With the exception of the bees, the price of which of course varies, he may get all he wants for five shillings, and make a stand out of an old box, taking care to have the inside at least 15 in. about the hive to allow supers, &c., to be put on, and the sides sloping to allow rain to run off, Bees will stand severe cold better than damp, according to my EXPERIENCE.

Food for Bees.—Allow me to differ from the writer who recommends 2 pounds of lump sugar to 1 pint of water "just allowed to boil," as food for bees. At the present season for comb building it is unobjectionable, but for autumn feeding, for storing for the winter, it would be unsuitable from its tendency to crystalise, in which form it would be useless as food. The addition of a tablespoonful of vinegar, a pinch of salt, and furious boiling for a quarter of an hour is necessary to form a syrup which will not crystalise.—APIS.

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FERNS ON TREE STUMPS.

MANY Ferns require a support of some kind, especially those having creeping stems or rhizomes, and in no more effective way can the support be given them than by the means shown in our illustration. This represents a Fern introduced a few years ago by Mr. Williams, of the Victoria Nurseries, Holloway, under the name of Niphobolus heteractis, climbing over a dead stump of a Tree Fern, a way in which it makes a very effective object. Stumps of dead Tree Ferns may not be everywhere obtainable, but there would probably be little difficulty in getting them from any nurseryman who imports Tree Ferns largely. Where, however, such material is not obtainable, a good substitute may be found in pieces of Moss-covered Apple or other trees. This should be planted firmly in a pot, as should also the Fern if a trailing one, such as is the plant shown in our engraving. Good drainage must be provided, and also good turfy loam and peat in equal parts, with plenty of sand added. The tree stump must be kept constantly moist by use of the syringe, and the Fern will then train itself round it without any further trouble. Where a large greenhouse exists in which there is convenience for planting a large tree stump in the border, better results may of course be obtained than could be hoped for when pots are used. As well as trailing Ferns, nearly any small-growing Ferns may be used, such as the Maidenhairs, Pteris, &c. In this case the best way would be to get some fresh Moss and bind round the stem of the tree with wire, which could be fastened to a few flat-headed nails driven into the stump. The Ferns may then be planted among the Moss, or a little Fern seed might be scattered all over it. On the top a plant of the graceful Nephrolepis exaltata would grow admirably, and give a finish to the whole. A shady situation must be chosen, and plenty of moisture must be supplied in order to get the plants to thrive luxuriantly and form perfect pillars of Ferns. The temperature of the house in which they are grown must be in accordance with the kinds of Ferns used. Many Ferns will grow well in an unheated house, whilst others require the temperature of a stove. Such arrangements as those suggested need not be alone confined to glasshouses, for similar ornaments may be with little difficulty secured in any light shady window of a room where gas and dust and smoke are not too overpowering, only of course in this case on a small scale. Even in the open air, too, pillars of the smaller-growing hardy British Ferns might be obtained, provided a moist shady situation can be given them. In the areas and back gardens of London and other towns our native Ferns succeed amazingly, always provided they are washed with the syringe frequently, and are planted in sandy vegetable mould, and are provided with sufficient drainage, to prevent the soil from becoming sodden and sour, and plenty of water. Ferns of all kinds in a small state may now be had at such a trifling cost that no one need be without them.

A CLIMBING FERN (NIPHOBOLUS HETERACTIS) ON A TREE FERN STUMP.

VEGETABLES.

AUTUMN AND WINTER CUCUMBERS.

FOR late autumn and winter bearing, sow now one or more of the following varieties of Cucumbers, viz., Telegraph, Masters' Prolific, and Munro's Duke of Edinburgh. The last-named is a great bearer, but the Telegraph produces the longest and handsomest fruit. Plant each seed in a 3-in. pot in a compost of rich turfy loam and leaf-mould in equal proportions, and plunge the pots in some close pit or frame near the glass. An old nearly-spent hotbed turned over and freshened up will be a suitable place, as it is not necessary to hurry them, but it is important to have strong, vigorous plants grown without any kind of check. It is well also to raise a few more plants than will be required, as in that case one has the chance of selecting strong plants only, and in any given number raised there will always be a small percentage of weakly ones. In growing early and late Cucumbers there should be a thorough command over the heating power, especially the bottom-heat, and as regards the latter 75° should not be much exceeded if steady and continuous bearing be desired. Where the autumn and winter supply has to be obtained from one house, leave three plants—one in the middle and one at either end—altogether uncropped through the autumn by pinching off all fruits as soon as they show themselves, and keeping the growth pinched back moderately close at the same time. The advantages of this plan will be seen when about Christmas the exhausted plants are pulled up, giving those left room for development. Cucumbers do not require a great depth of soil in which to start—from 9 in. to 12 in. will be ample; but what they do require is a slight top-dressing at least once a week. They require a good deal of moisture both at the root and in the atmosphere; and frequent top-dressing not only supplies fresh food to the roots in small quantities as required, but it freshens up, and, by preventing stagnation, purifies the atmosphere of the house at a time of the year when much ventilation cannot be given without too great a sacrifice of heat. Where good loam can be had, full of fibre and free from wireworms, it should always form the main bulk of the compost used, adding soot or any other stimulating substance to enrich it where necessary, bearing in mind that although light, rich soils may produce rapid growth at first, yet when the pinch comes the plants often fail, while others grown more slowly in heavier soil will have continued bearing freely, and have furnished fruit in a satisfactory manner. E.

SEASONABLE NOTES.

Endive.—This is indispensable for autumn and winter salads; the early-sown plants quickly bolting and thus becoming useless, a good breadth should be sown now in some open situation. The land need not be freshly manured for this crop, unless it be very poor. Sow in drills 1 ft. apart and 1 in. deep; thin out betimes, and transplant the thinnings if required, allowing each plant at least 1 square ft. of space. Sow again about August 10, and plant out when ready on a dry, warm border. The French Moss-curled and Large-leaved Batavian are two useful varieties.

Spring Cabbages.—Early Marrow Hartwell is well adapted for present sowing, as are also Atkins' Matchless, Enfield Market, and Wheeler's Cocoa-nut; three or four good kinds are better than a greater number. In the midland and northern counties the seeds should be sown at once, but there is no hurry for a week or so in localities situated to the south of London.

Globe Artichokes.—As fast as the heads are cut remove the stems. If the heads be thinned out, those that remain will be finer and better. A thorough soaking of liquid manure will help greatly to swell off the late ones.

Liquid Manure for Melons and Cucumbers.—Tie up a bushel of soot in an old guano bag, place it in a 50-gallon tub or barrel with 3 lb. or 4 lb. of guano, fill up with soft or pond water, stir it up well with an old birch broom, and throw in a lump of lime to clarify it. When using dilute it with an equal quantity of pond water, and use regularly when required. Soot has a wonderfully invigorating effect upon the foliage, and good substantial foliage is essential to the production of well-flavoured fruit. Red spider seems to fight shy of such foliage when grown without shade and in a well-ventilated atmosphere.

Tomatoes.—Keep the growth thin to give the fruit a chance to ripen. All young shoots that spring from the main stems should be pinched or cut off to throw all the strength of the plants into the main crop, as the fruit on the lateral growths will stand a poor chance of ripening. Stop all fruiting branches one joint beyond the cluster of blossoms, and do all tying or training betimes.

Close Cropping.—Vacant plots need not remain uncropped longer than is necessary for the completion of manuring and cultivating operations. Land does not need rest if well managed, and the more it is surface-stirred and cultivated the better for the succeeding crops. Plants derive a good deal of their sustenance from the atmosphere, and a green crop, if not required for use, will, if dug in, return more to the land than it takes from it.

Open-air Mushroom Beds.—Collect some short stable manure and place it under cover till enough has accumulated to form a bed; do not allow it to heat violently; to every five or six barrowfuls of manure add a barrowful of fresh loamy soil, turning it and mixing all together. If convenient the bed may be made in a turf pit or in a deep, old-fashioned frame. A somewhat shaded position will be better for the first bed; build up the beds as firmly as possible, and spawn as soon as the temperature of the bed falls to 85°. If the beds or ridges be altogether in the open air, they should be at least 2 ft. thick at the apex of the ridge.

Gathering, &c.—Gather all Peas and Beans as soon as they become fit for use, but at the same time avoid injuring the plants; this, and securing a robust growth by thin planting, is the only way to secure a succession of pods from the same plants.

Spinach Culture.—A small bed of autumn-sown Spinach will supply a quantity of dishes throughout the spring, at a time when a change of vegetables becomes desirable. Sow the prickly-seeded variety the last week in August, or in early situations the first week in September; the earlier it is sown the sooner will it run to seed the following season. I generally sow Spinach after early Potatoes, without any special preparation beyond raking the surface evenly and smoothly. Sow the seeds thinly in drills 1½ in. deep and 1 ft. apart, and thin out the young plants to 4 in. apart; the surface of course must be often stirred with the hoe to maintain the soil in a healthy condition, but I need scarcely mention that this should never be done when the land is wet. In gathering the produce for a certain period pick off the largest leaves only, but when the plants begin to run in spring the best plan is to cut off the whole tops of the plants down to within 1 in. or 2 in. of the ground; a new growth will then take its place, that may, when sufficiently large, be served in the same way, until finally the roots are exhausted, when of course the remains should be cleared off and the land well manured and cultivated for the succeeding crop. It is the natural tendency of every plant in spring and early summer to throw up flowers and produce seed, but it is far better to divert the strength of all culinary plants that are esteemed for their leaves only into the production of young succulent growth, especially as this not only tends to increase the bulk, but also extends the season of bearing of the crop. Summer Spinach is in a general way not a profitable crop for a small garden. Where it is desired, however, it may be used as a catch crop between rows of Peas, but unless the soil is deep and moist, Spinach in summer will bolt almost as soon as it is fit for use. In special cases where a succession of Spinach is required through the summer the New Zealand Spinach will be found to give satisfaction. Select a warm site and prepare hills as for Ridge Cucumbers; plant half-a-dozen seeds in April round the top of each hill, and if all of them grow thin out to three, of course leaving the strongest. This Spinach is commonly sown in heat in small pots and planted out in May, but it will grow just as well out-of-doors, only it does not come into use quite so early. Hundreds of young plants generally come up in the beds where it grew the previous year, but they will not transplant well on account of the paucity and length of their roots. New Zealand Spinach will continue bearing till the frost cuts it off in October.

Winter Broccoli. — A good winter Broccoli is invaluable where a continuous supply of vegetables is required; for, although where efficient means of protection are at hand Cauliflowers or Snow's Broccoli may be had in good condition up to Christmas, there is still a long interval before the so-called early spring kinds can be relied on to come into use. The kind named Self-protecting Autumn Broccoli is a most useful addition to our list of early winter vegetables, for if planted in succession it continues to produce heads from November onwards. I have just planted a large quarter of this and Snow's after Early Peas. I do not dig, but merely level the ground and draw deep drills 2 ft. 6 in. apart, making the holes with a crowbar 2 ft. asunder in the rows; strong plants are then inserted with the roots a good depth in the ground, and one good soaking of water starts them into active growth. They do not suffer from drought in solid ground nearly so much as in loosely-dug soil, as the evaporation is reduced to a minimum; the growth is also more solid and robust, and better calculated to withstand sudden variations of temperature. I also make later plantings in a similar manner, but in smaller quantities, as in mild autumns they continue to grow very late; in fact, Snow's Broccoli has oftener come in too soon than too late; but in cold weather Broccoli heads may be kept in good preservation by laying and covering with Fern fronds or litter, which I consider preferable to lifting and storing in pits or houses, as a confined atmosphere soon deteriorates the flavour.—J. H.

Treatment of Old Cabbage Beds.—In very many gardens the old Cabbage stems are allowed to remain for the sake of the second crop of little hearts they produce in autumn. The soil amongst them should now be well scarified, and if a top-dressing of manure of some kind can be given the produce will be equal to early spring Cabbages in flavour and tenderness. Where no attention is given to them they are tough and leathery, unless the land be deep and rich.

Best Peas.—Having recently observed a few opinions expressed in this journal anent the relative quality and productivenes of Peas, I beg to say that, of the many varieties I have of late years grown (the seed being invariably obtained from first-class houses), none has equalled Vanguard and Dr. McLean, the haulm of these—the former especially—being literally covered from top to bottom with long handsome pods which are well filled with large juicy Peas of exquisite flavour. As these varieties are moderately early and only attain a height of 3 ft. or 4 ft., they are especially suitable for small gardens.—NORTHANTS.

MESSRS. HOOPER & Co., Covent Garden, London, W.C., request us to state that four heads of their Covent Garden Mammoth Cauliflower, weighing respectively 7¾ lb., 10½ lb., 12 lb., 9½ lb., the result of ordinary good culture, are on view at their shop in the Central Avenue. Such heads of Cauliflower they think have never before been seen.

Catching Slugs and Caterpillars.—Much has been written lately about the usefulness of Orange-peel for trapping slugs. I find slices of Turnip or Carrot far better and to last longer.—M. W.

Wireworms in Soil.—If the soil is soaked with one part ammonical liquor from gasworks and nine parts water, it will not be troubled with wireworms or anything else for a while. It is a good clearer of lawns also, and a good fertiliser. It may be put on land prepared for almost anything. When Potatoes are well out of the ground, a good soaking along the drills will clear the wireworm, and give an improved crop. The mineral oil and water will not cure American bug—even if often applied—unless it is brushed in. I prefer a strong solution of soft soap rubbed in parts affected

with a hard brush. The trees like it, and the bark heals and begins to grow.—One who has Suffered.

FRUIT.

Fruit Crops.—Having more than one string to one's bow this season was but the other day well illustrated by a market grower, who, pointing to a long border of red Moss Roses, said, "These will give me a better return this year than several acres of fruit;" of which, it must be admitted, the crop is not abundant. A few kinds of Apples, such as Julien and the Keswick Codlin, are fairly good; but the larger portion of the trees have only a sprinkling. One of the best crops I have seen is on three ten-year-old trees in my own ground, consisting of a sort too little known, viz., the Norfolk Bearer. In this case the Apples hang on the branches like ropes of Onions, the fruit already colouring, but it is a late keeper and excellent in flavour. Pears are a poor crop; the Hessle is almost the only kind that is bearing fruit and does not show traces of the frost. The same grower who has the Moss Roses has another string to his bow in a few dozen good standard Morello Cherries literally laden with fruit. There is no fear of the market being glutted with this kind, or perhaps any other Cherry this year, and therefore he is sure of a good return for them. Why do not growers plant more Morellos? They yield more crops on the average than any other standard fruit tree grown. There will be an abundance of Plums of all kinds on standard trees presently, the best crops being the Prince of Wales, Diamond, Victoria, and Green Gage. There should be plenty of preserve made from this most delicious of all Plums this year. That most excellent kind, the Farleigh Prolific or Crittenden Damson, is now being planted more freely. This is amongst Plums what the Morello is amongst Cherries.—A. D.

Figs in the Open Air.—This is the time of year for laying the foundation for a good crop next year by keeping the shoots thin and well exposed. Well-ripened wood will pass through a severe winter with only a slight protection where soft immature shoots would be killed. All young fruits now showing should be pinched off before they get to any size, as they can never become useful, and only tend to exhaust the trees. Figs in the midland counties usually make more wood than they do in the south; therefore more attention must be given to summer pruning, and it may in some situations be occasionally necessary—unless the roots are growing in some circumscribed position—to lift and shorten their points. Rigid training is not necessary as regards fruitfulness, and in some instances it may have quite a contrary effect, but in many gardens neatness and order are essential requisites; therefore Fig trees against walls or buildings have to submit to training whether it suits them or not; if the shoots be kept thin and laid in close to the walls, the extra warmth radiated from the bricks will help to ripen the wood. It is in cases in which the shoots are laid in so thickly that every inch of surface is densely covered with foliage that failure occurs. It would be far better to leave trees altogether untrained than to train the branches so thickly that neither air nor sunshine can have fair play. The Brown Turkey and White Marseilles are two of the best varieties.—H. H.

Currants.—Wherever Red Currants are grown the superior character of the Raby Castle over the old Red kind is very manifest. As a rule, Red Currants are but a moderate crop, but the former has by far the best crop and the finest fruit. It is rather later in blooming than the old kind, and to that fact without doubt does it owe this year some of its present fruitfulness. Those who have not this fine Currant should make a note of it. Black Currants are this year getting a comparative rest. Perhaps it is well that the bushes should do so sometimes, for they bear good crops almost invariably. What fruit hangs on the bushes will not pay for the gathering, except the return be an extraordinary one. Next year without doubt there will be a grand crop, and then it may compensate for some other failures. Neither in fruits nor in vegetables should a grower be too dependent upon one kind. If one thing fails another is almost certain to furnish a paying crop.

Raspberries.—This year these are good, perhaps never finer. Last season the suckers made excellent growth, and now the canes are stout and abundantly fruited. Next to Strawberries, the Raspberry is the most difficult fruit to market if the weather be bad, but in a fine season it will always command good prices. Rarely does the Raspberry miss a crop, and, once established in good deep soil, the after cultivation is neither troublesome nor expensive.

Raspberry Arches.—We grow a variety of Raspberry called the Prince of Wales that, in addition to being a good bearer and furnishing fine fruit, produces extremely fine canes. As they were trained to an ordinary stout wire trellis 4 ft. 6 in. high, we should, if pruned down to the trellis, have cut off half the length of well-ripened canes that were mostly 10 ft. high, so for a trial we tied the tops down into arches by bringing the first rod down to the fourth, and so on throughout the piece; and, by tying every rod where they crossed each other, an immovable hedge was formed that has stood the strongest gales, and at present all the upper portion is a complete mass of fruit branches, and the young growths coming up from the base have a far better chance of maturing than when the fruiting wood is cut down low. I can strongly recommend the Prince of Wales as a vigorous good variety that, under the same conditions under which some kinds come so weakly as to be hardly worth growing, will be found to produce a full crop.—J. G.

THE SHRUBBERY.

HEDGES.

Evergreen Hedges, such as Holly, Yew, Laurel, Privet, or anything that is kept cut into a formal shape, and that have attained the full size to which they are required to grow, should be clipped during this month; there is no better time than the present for carrying out such an operation; where this work is delayed until near the close of the year and a severe frost ensues, the shoots are frequently killed back for some distance beyond where cut. In the case of any hedges of this description that are to be so far reduced in size as to necessitate cutting back into the strong wood that has become destitute of leaves, the work should not be done until spring, as the roots would be thereby seriously affected at this season of the year, and whatever little growth was made after this time would be so soft as to be unable to live through the winter; in like manner young evergreen hedges should not be cut until spring further than shortening back with the knife any over-strong shoots that are taking too much lead. Young hedges of this description should by all means be kept wide at the bottom and gradually reduced up to the top, which should be kept quite narrow. The old-fashioned form of hedge, with its perpendicular sides and square or rounded top, finds more favour with some on account of its general appearance, but there is no hedge (if we except Beech) that will ever retain its full strength in the lower branches where most needed when cut in this way.

Deciduous Hedges in and around gardens where it is desirable to keep up an orderly, trim appearance, and which have attained the full size required, may now be clipped. Young thriving hedges that are not yet fully developed should on no account be cut until after the leaves have fallen, as the removal of the shoots of anything of a deciduous habit whilst the leaves are upon them has a most weakening influence, and has a far more disastrous effect upon the plants than the cutting away of the same shoots after the leaves have fallen. Some amateurs are so desirous of keeping everything so close and formal, as to be induced to cut Thorn hedges twice in the year, that is, just before midsummer, and again in the autumn or winter; but it must be borne in mind that, except in the case of the most vigorous examples of this kind of fence grown under the most favourable conditions of soil and situation, this continual clipping, from its exhaustive tendency, will in the end permanently injure the hedge.

Box Edging.—Where this was not clipped in the spring it should now be done. There is nothing equals this edging in appearance when it is not allowed to get too large, and from its natural slow habit of growth, with ordinary care in cutting, many years will elapse from the time of planting before this occurs. When it has once attained sufficient size, like a well-managed hedge, it should annually be cut back to the same point to which it had been previously clipped; by being so treated at first sight it might be supposed that it would have for a time after cutting a bare look, through the old leaves in the course of time falling off; but this does not occur, as when cut close the old stems keep breaking out lower down, and are always furnished with fresh green leaves.

Irish Yews.—When the plants have grown to the size which one wishes them to do, and before they show signs of opening out, let a stout wire ring or two down on the plant over the top, about the same girth as the plant. These rings can be worked in amongst and hid by the small branches. Such appliances will keep the plants perfect pillars for years.—T. W.

Weigelas and their Culture.—These are very hardy, of quick growth, and easily managed. We have many plants of the different kinds, some of the largest being as much as 10 ft. high and 20 yds. in circumference. They have lately been one mass of lovely blossoms, and all who saw them were much pleased with their beauty. Few flowering shrubs are so well worthy of a place in pleasure grounds. They are seen to the best advantage when dotted here and there about the margin of groups of other kinds of bushes; and an isolated specimen here and there on the lawn has a good effect, while none of them are out of place when planted judiciously about the edges of carriage drives and woods. They all lose their leaves in the winter; but then, or when they are in leaf or bloom, they never appear formal, as the loose, half-drooping habit of the branches is very graceful. We propagate them readily by means of division in winter, that is, by lifting the side sucker-like growths with a piece of root attached to them, and planting them by themselves. Another way is to peg down and layer the branches. With us they grow freely in various kinds of soil, from a heavy clay to a light sandy loam. Some of our plants are growing in the most exposed situations, and others under the shade and shelter of trees, and all succeed well. We have transplanted large specimens from May to November, and from November to May without their showing any signs of being injured; but any one introducing them would probably find small young plants do better than old ones. The young ones bloom when quite small, and I never knew any of them to miss a season without flowering. Any plant becoming too large will bear cutting in freely, as some of our plants at the ends of hedges are clipped in annually, and they never show any signs of having been injured by the operation.—Cambrian, in the *Field*.

French Prize Roses.—The *Journal of Roses*, published in France and devoted exclusively to Roses, has had the happy idea of organising a sort of plebiscite to obtain opinions as to the best Roses. Eighty-five lists were sent in, and from these was made out the following list of the fifty having the most votes:—

La France	79	John Hopper	35
Baronne Adolphe de Rothschild	76	Madame Lacharme	34
Paul Néron	76	Cécile de Chabrillant	33
Gloire de Dijon	72	Louise Odier	33
Souvenir de la Malmaison	72	Marquise de Castellane	33
Jules Margottin	70	Céline Forestier	32
Maréchal Niel	70	Elisabeth Vigneron	32
Baronne Prevost	57	Boule de Neige	31
Gen. Jacqueminot	52	Madame Victor Verdier	30
Captain Christy	50	Thérèse Levet	30
Belle Lyonnaise	47	Géant de Battailles	29
Eugène Appert	47	Rose du Roi	29
Louis Van Houtte	47	Triomphe de l'Exposition	28
Anna de Diesbach	47	Elise Boëlle	27
Aimée Vibert	44	Lord Raglan	27
Souvenir de la Reine d'Angleterre	43	Camille Bernardin	26
Charles Margottin	42	Duchesse de Cambacéres	26
La Reine	42	Lamarqué	26
Victor Verdier	42	Marie Van Houtte	25
Charles Lefèvre	41	M. Boncenne	25
Comtesse d'Oxford	39	Ophirie	25
Madame Boll	39	Alfred Colombe	24
Gloire de Ducher	36	Empereur du Maroc	23
Madame Falcot	36	Jean Pernet	22
		Madame Scipion Cochet	22
		Chromatella	22

The figures show the number of votes given to each.—*L'Illustration Horticole.*

Garden Ornaments.—Having noticed an article in Gardening (No. 70) under the above heading, I give my experience of a few ornaments which I made last summer. For the centre of my garden I made a rustic box as follows:—I bought half a butter firkin (3d.) as a receptacle for the earth; I then bored holes in the bottom with a red-hot kitchen poker (not having an augur) for drainage; the tripod stand I made from a clothes-prop (8d.), and fitted the three projections at the top into the bottom of the tub by making larger holes. I then bought from a florist 1s. worth of virgin cork, and nailed it with French nails on to the tub, and put one or two pieces on to the tripod stand, and the spaces between the cork I filled with moss.

I then varnished the whole once or twice and let it stand until perfectly dry. I then filled the tub with good mould mixed with road drift, &c., and planted in it four plants of Creeping Jenny, one Scarlet Geranium (for the centre), two Nasturtiums (continuous bloomers), two Lobelias, one small Fuchsia, one Ice Plant, and one or two other small things to give a variety of foliage. When the continuous bloomers began to grow I formed a small arch of cane (1½d.), and twined them over it with good effect. The ends of the cane I inserted in the earth of the box. The Creeping Jenny I kept in position over the sides by fixing the strands with tiny loops of wire such as are used by bell-hangers for keeping bell wires in their places.—A. H. B.

Sweet Williams.—I have some plants which show how much Sweet Williams have become improved as regards large pips, fine form, and many and varied colours. Some belong to Hunt's strain, and are characterised by smooth-edged petals, whilst the Auricula-eyed kinds show the white eye, and invariably a serrated edge. The distinguishing feature of Hunt's strain is, however, the ring or ground of some deep colour, and a distinct margin or edging of white. These are always the most effective forms for exhibition, as they come more nearly to the florist's ideal than others do. But whilst the one strain will retain in some flowers the white eye, and the other its correct and defined edging, there will come from each such diverse forms that it is impossible to say to which strain this or that one may belong; and thus the maintenance of such distinctions becomes not only impossible, but useless. The finest strain to be found is made up of selections for several years of the above strains, and where there has been year after year the greatest care exercised as regards the production of only the finest flowers, largest trusses, and most varied markings. The only self flowers are those which are pure white, pink, or crimson; all others are parti-coloured or variously marked, some very prettily mottled, others more or less edged with white or pale pink. Large beds of these Sweet Williams are really grand, and so full of variety and beauty as to be almost unapproachable in effect and interest. If some of these striking forms could be permanently fixed and offered as such, it would largely tend to popularise the Sweet William as a showy border plant.—A. D.

Old Pelargoniums better than Young Ones.—Where Pelargoniums are required for summer decoration it is much better to retain a good supply of old plants than to trust exclusively to fresh-struck cuttings. When the beds are cleared in autumn we go over all the sorts that are desired for the following season, and, selecting all the healthiest plants, cut them down quite close, shortening the long straggling roots; they are then packed thickly into cutting boxes in fine, light soil and kept rather dry. During the winter they are kept as cool and airy as possible in fruit houses at rest, and in spring, when vegetation becomes more active, they are shaken out. The best shaped plants are potted for vases and window boxes, and the remainder is tied up in Moss with a handful of soil and set closely together in brick pits, where they can be fully exposed on favourable occasions until required for planting out. By using a good proportion of these plants the beds may be pretty well filled at once, and an early display of bloom secured. In moist seasons young plants are liable to run too much to leaf instead of to flower, whereas old cut-down plants flower profusely in all seasons, while for single specimens in vases plants with dwarf, bushy habit are indispensable; and few plants so well withstand the trying conditions under which they are thus placed and furnish such good results as these. Single specimens in small vases of distinct colours, or large vases filled with mixed varieties and edged with the beautiful trailing varieties of the Ivy-leaved section, will be found as continuous and satisfactory as any plants grown.—J. G. H.

August-sown Annuals.—Anybody for a very trifling outlay may have a gay garden next spring by sowing now a few seeds of the following annuals, viz., Nemophila insignis, Collinsia bicolor, crimson and white Candytuft, Saponaria calabrica, crimson and white Godetia, Virginian Stock, white and pink Silene, Limnanthes Douglasi, and Myosotis dissitiflora. It is late for the Myosotis, but it is better to sow late than be without it. I have no occasion to sow this now, for so many self-sown plants come up, that one has only to refrain from hoeing them up to have plenty to plant anywhere. Sow thinly either in drills or broadcast in some open situation, and transplant to their blooming quarters early in November, as a good early bloom cannot be ensured by late sowing and late planting.—H.

HARDY ANNUALS.

Gilias.—These are beautiful hardy annuals bearing a profusion of blue, rose, white, purple,

Gilia linifolia.

and other coloured blossoms. In light, dry soils the seed should be sown in autumn; but in cold, wet soils in March or April. The best are G. achilleæfolia, capitata, tricolor, and linifolia.

Kaulfussia amelliodes.—This is also a good hardy annual, either for the open ground

Kaulfussia amelliodes.

or in pots for the window. It was one of the most attractive among annuals exhibited at Regent's Park during last month.

Large-flowering Chrysanthemums.—The leading shoots of these, whether in pots or in the open ground, should be kept securely tied out. The plants must be well watered in dry weather, and a little liquid manure once a week onwards will be of great advantage. The Pompone varieties should now be stopped for the last time without delay; it should be done by the first week in August. Plants in pots are greatly helped by tying out the shoots so as to admit a free circulation of air; they must be also well watered, as the foliage quickly turns yellow when the plants suffer from drought. Sprinkling overhead night and morning is of great service; at this time of year green fly is apt to infest the points of the shoots—a washing with Fowler's Insecticide will soon dislodge the enemy.

HARDY FLOWERS AND THE LONDON PARKS.

THE reaction in favour of these is undoubtedly a reality, and one that is likely to spread and bear good fruit as regards bringing back into cultivation many really beautiful classes of plants that have too long been banished from our gardens. I have no doubt that several varieties of once popular bedding plants, notably Verbenas, are worn out by excessive propagation; the stock plants, being put into a high temperature to yield cuttings, produce one or two good batches, and then quantities of weedy Grass-like ones from the first predisposed to disease. I have just been looking at a retired gardener's flower borders, which are always gay and pleasant to look upon, except when severe frost or snow renders out-door flowers an impossibility. But from the earliest Aconite, Snowdrop, and Hepatica, and throughout at least nine months of the year there is a constant succession of floral beauty. They are not arranged in rows, as in botanic gardens, but, if I may coin a phrase, in regular irregularity, for they are graduated as to height, and although planted in masses or groups, apparently without any relation to each other, yet there is no confusion or jumbling together. There is plenty of room for taste in arranging hardy flowers as well as carpet beds.

A correspondent of mine, pretty well acquainted with horticulture and horticulturists, wrote to me lately saying that in the time when spring flowers should have been plentiful he took a friend to see the alpine garden in Battersea Park, when to his dismay he found only a few Violas, and in the shrub line Berberis stenophylla and Pyrus japonica in flower, so to set himself right he had to return to his own little private garden and there show him his beds of Auriculas, Pansies, Primroses, Wallflowers, single and double, various Daisies, Forget-me-nots, Tulips, single and double, Polyanthuses, Arabis, Ficaria ranunculoides, Caltha palustris, Anemones, Aubrietias, Narcissi, dwarf Phloxes, Primula denticulata, Corydalis lutea, and Erica carnea.

In the way of ornamental foliage he had variegated Sage, Funkia, variegated Ivies, and others—enough to make any garden gay and beautiful in the most lovely of all seasons, viz., the spring. He wonders why the parks and gardens of London lavish all their great expenditure on plants that perish with the first frost, while hosts of lovely hardy flowers are delighting the dwellers in rural hamlets with their freshness and sweetness. I have been told that the display is kept for the London season; but what about the toiling millions who never leave London? Do not they enjoy flowers as much as those who can afford to go in and out of town at certain seasons to enjoy country flowers and fresh air? The parks are really meant for that broad designation of classes called—the people. J. G.

William Bull and Madame Gueuret Pinks.—During the Franco-German war the so-called "Iron-stemmed" Pinks, which were first grown by M. Alégatière at Lyons, completely disappeared, with the exception of one variety, supposed to be the kind named William Bull, which was found amongst the collection exhibited at the Champ de Mars, 1878, by M. Gueuret, from one of whose plants the accompanying illustration has been prepared. The illustration will give some idea of the bushy, free-flowering habit of this beautiful variety. The William Bull variety on the left bears flowers of a bright rose carmine, more or less streaked with violet, with slaty reflections. The William Bull begins to flower about the end of May and beginning of June, when the plants may be bedded-out. The Madame Gueuret variety is entirely an off-shoot of the William Bull,

and differs from it in the flowers being of a blood-red colour, with violet-pink reflections. In addition to their bushy habit these Pinks possess, according to the *Revue Horticole*, a delicious odour, are perennial, and are easily forced. They are also well adapted for outdoor cultivation.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 2.—Sowing Tennis Ball, Bath Cos, Neapolitan, and Drumhead Cabbage Lettuce, Radishes, and winter Cucumbers; also Mignonette in pots; potting young scented-leaved Pelargoniums, Balsams, and Carnations; also Strawberries; putting in cuttings of variegated Pelargoniums, named Cinerarias; planting a good breadth of Endive, Cauliflower, and Grange's Broccoli; staking Chrysanthemums, dwarf Dahlias, Calceolarias, and late Peas; nailing Apricots; shifting Primulas and old stools of Poinsettia; cutting down Pelargoniums; exposing fruit on trees in late Peach house to the sun; making trenches for Leeks; layering Strawberry plants for planting out-of-doors; earthing up Broccoli; digging ground for Wallflowers; hoeing among Roses; clipping hedges.

August 3.—Sowing Schizanthus and latest Balsams; potting young Strawberries for planting out, consisting of Garibaldi, Keen's Seedling, President, Dr. Hogg, Oscar, Eclipse, Sir Harry, Elton Pine, a few Black Prince, British Queen, and Sir Joseph Paxton; likewise last-sown Cinerarias and Carnations; putting in cuttings of Bijou Pelargonium, Coleus, and Alternanthera; planting Leeks in trenches; shifting Primulas into flowering pots, Wigandias into 8-in. pots, also Stocks, and parting and re-potting Caladiums; matting Red Currants on walls; staking and tying Dahlias and blue Larkspurs; pulling up Onions; cutting Lavender; hoeing amongst plants in borders; turning old bulbs out of their pots; digging ground for Spinach; earthing up Broccoli.

August 4.—Sowing Radishes and Lettuce; potting Strawberry plants, finishing with Sir Charles Napier; potting some Stocks and Wallflowers for spring three in a pot, and also second-sown Stocks for stands; putting in cuttings of Mimulus, also Iresine and Alternantheras; layering Anne Boleyn and other Pinks; staking Chrysanthemums and Gladioli; moving herbaceous Calceolarias to shady place in frame; pulling off all old Beans from first and second crops of French Beans; cleaning and pruning Roses; earthing up early Celery; hoeing among French Beans, and thinning Mignonette.

August 5.—Sowing Tropoli Onions; potting intermediate Stocks, and potting off all forcing Strawberry plants; planting Lettuce and Endive, also some Stocks and Wallflowers and more Chrysanthemums and Pinks; tying and staking Dahlias; shifting Heliotropes from 5-in. to 7-in. pots; moving Tree Mignonette out-of-doors; shifting President and other Strawberry plants into their fruiting pots; taking up Garlic and Shallots; thinning Chicory; clipping Yew hedges; cutting off Hollyhocks 16 in. above stakes; removing faded Sweet William stems; earthing up Brussels Sprouts and manuring land for Turnips; digging ground for Onions, Cauliflower, and Broccoli; preparing a frame for cuttings; watering Rhododendrons.

August 6.—Sowing Endive for spring crop; also Intermediate Stocks; putting in cuttings of variegated Pelargoniums; planting Wallflowers, also July-sown Bath Cos Lettuce, and some Paris Cos and Ne plus Ultra Cabbage Lettuce; netting Gooseberries; repotting standard Heliotropes and scented Verbenas; lifting Myatt's Prolific Potatoes for seed; clipping hedges, clearing away Nettles and rubbish among Laurels and other shrubs; clearing land for winter Spinach and Endive; digging Potato ground for Turnips.

August 7.—Sowing Nemophila; also main crops of Prickly Spinach, Veitch's Incomparable, Reliance, Imperial, Queen, Little Pixie, Enfield and Red Cabbages, Walcheren Cauliflower, Snow's and Osborn's Broccoli, Tripoli Onions, and Cucumbers; potting Sir Joseph Paxton Strawberry for forcing; potting off winter Heliotrope cuttings; also potting from open ground Calla æthiopica; planting a few more Cauliflowers and some more Curled Endive; also a large breadth of Coleworts; layering Carnations; also Strawberry runners for planting; examining wall trees and Vines for insects; clipping hedges; cleaning and sanding walks; earthing up Winter Greens and May-sown Cauliflower; giving air to Hamburgh Grapes which are ripe to keep them cool.

Flower Garden.

This is a good time to fill up any spare space there may still be in mixed flower borders with seedling Wallflowers, Antirrhinums, Pentstemons, and Sweet Williams. Plant them out in clumps of three or five plants together, and give them a good watering when they are first put out. All the attention required afterwards is protection from slugs until they have become well established. Herbaceous plants generally need attention as to ties and supports and weeding. Dahlias, Hollyhocks, and all large-growing sub-tropical plants should be frequently looked over, and be kept tied to stakes as growth progresses. Roses should have all decayed flowers cut off at least twice a week, an operation which will tend to the earlier production of a second bloom. Stir the ground about them deeply, and if they lack vigour of growth, give a good dressing of guano; its effects will soon be visible in the darker hue of the foliage.

Carnations and Picotees.—These ought to have daily attention. Every day it is necessary to look to the flowers, the calyxes of which have a tendency to split and to open them out on the opposite side, tying them round with a strip of bast. Green fly will cling to the youngest buds, and it also attacks the young growths under glass; it ought, therefore, to be brushed off.

Delphiniums.—If it is not intended to save seeds of these the seed-pods should be removed in a green state; this will cause the side stems to flower stronger.

Pentstemons and Antirrhinums.—These useful hardy plants are now coming into bloom, a condition in which they will continue until frost sets in. Tie the stems to sticks as they advance in growth, and keep the beds in which they are planted cleared of weeds.

Glasshouses.

Aquatic Plants.—Aquatic plants are not nearly so much grown under glass as they deserve to be. No greenhouse need be without a suitable place for growing such aquatic plants as will thrive in a usual greenhouse temperature. It may be formed by ordinary stone or slate slabs put together in the usual method, or it may be a wooden trough lined with lead, the outside of which, if desirable, can be covered with cork or other material to give it a rustic appearance. Its dimensions will require to be in keeping with the size of the house; a depth of 2 ft. will be sufficient, and the plants should in a great measure be confined to pots, as the stronger-growing species will this way be under more control, and their arrangement can be altered at will, so as to avoid the, to many, objectionable feature of plants always occupying the same positions. Such a receptacle as that just described should be supplied with water by means of a pipe and tap that will give a slow trickle for some hours almost daily, with a corresponding outlet by an ordinary overflow, with means to convey the water away. In this matter there will be little difficulty if there happens to be a tank beneath the floor for holding the roof water. One of the most suitable plants for growing in conservatories is the Cape Pond-weed, Aponogeton distachyon; its singular highly fragrant, Hawthorn-scented flowers emit the most agreeable perfume, and they continue in bloom through a great portion of the spring and summer. It should be grown in pots in loam and placed a few inches below the surface of the water, setting the pots which the plants occupy upon others inverted. A few examples of the Grass-like leaved Vallisneria spiralis may also be grown; its leaves when placed under the microscope show the circulation of the sap so well as to make them objects of interest. It will succeed in 6-in. or 8-in. pots, with a few crocks in the bottom, and filled with loam. The pots containing it may stand on the bottom of the tank. Trapa natans (the Water Chestnut) is another subject deserving of notice. It will grow in soil similar to that recommended for the Vallisneria, but it requires a larger pot. The North American white Nymphæa odorata will need a moderate-sized pot, and associated with it may also be the Chinese N. pygmæa, a white-flowered kind which will likewise succeed in loam and similarly treated. Dietes bicolor is another plant that does well managed in this way. It should be potted in loam, and is distinct in habit. The North American Orontium aquaticum will be a good addition, as would also be the Chinese Sagittaria sinensis; loam, with a little sand, will answer for this. To these may be added the green and variegated-leaved Callas, which succeed well in loam, and may stand with their pots from 12 in. to 6 in. beneath the water, according as their heads will look best. These Callas should not be allowed to get too large; they may be divided yearly if necessary, and, if thought desirable, can be grown as ordinary greenhouse plants, and be introduced to the water when coming into flower and removed afterwards to make room for others. In this way a considerable succession of bloom may be kept up. There is always a charm attached to plants grown in water this way, but it is essential that the water be kept clean.

Iron stemmed Pinks (William Bull and Madame Gueuret).

Dwarf-growing Ferns, such as Adiantum cuneatum, A. gracillimum, and the taller A. formosum, together with the many crested forms of Pteris serrulata, P. cretica albo-lineata, and also the green P. cretica—the latter one of the best of all Ferns for bearing hard usage—may with advantage be interspersed amongst the dwarfer-growing subjects in the greenhouse. All plants introduced to conservatories from warmer quarters must be carefully treated as regards water, which should only be applied at a temperature approaching that to which the plants have been accustomed; but they should receive no more than is necessary to prevent the soil from getting so dry as to cause them to flag.

Achimenes and Gloxinias.—Some of the latest-started that have received as cool treatment through the summer as they could be induced to make progress under, will, when beginning to flower, be in the best condition for standing in the conservatory, being careful not to admit the cool external air directly in contact with them. Where plants are arranged in groups on the floor, or on low table-like stages, it is always well to avoid the pots being more seen than is necessary; and, in order to effect this, sufficient numbers of Isolepis gracilis and Lycopodium denticulatum should be grown in 4-in. or 5-in. pots, so as to stand as close as the pots will admit in the immediate front of the

arranged groups. A good effect may be produced by introducing amongst these green plants Coprosma Baueriana variegata and small examples of the white-leaved Centaureas, together with anything else at hand that will take off the stiff formality of rows of one or more kinds.

Plumbago capensis.—Few plants are so useful as this at this season of the year, grown in small pots, either for large conservatories, small greenhouses, or anywhere where blooming subjects are required. Plants that have already been in flower for some time will generally push up side shoots from the stronger branches, which make excellent cuttings if taken off now and treated in the ordinary way; they will get established before winter, and will make serviceable flowering stock for next summer. A sufficient number should be prepared, as they are of much more use in a small than in a large state, and the delicate blue shade of the flowers furnishes a colour which we need, and which harmonises well with everything else it is associated with.

Fuchsias.—These strike like weeds, and the present is the best time in the year for putting in cuttings in order to get young stock that will bloom as early in the spring as is required in a comparatively small state; or they may be grown on at the option of the cultivator to as large a size as may be considered requisite for later flowering. Shoots that have formed bloom root indifferently, and never make good plants. Young growths should be chosen from near the base of the stronger branches. Put these say half-a-dozen together in 5-in. or 6-in. pots drained and filled with sandy soil, covering with a bell-glass. Keep them moist and shaded in a little warmth. Take care that the cuttings previous to insertion are free from aphides and red spider, especially the latter, to which Fuchsias are subject at this time of the year. Out of the many fine varieties that now exist there need be no lack of choice; but there is a great difference in their inclination to flower early. Amongst all that have been raised, none find so much favour with market growers as regards their early free-blooming disposition as the white rose-corollared variety called Mrs. Marshall (syn. Arabella) and the crimson kind, with violet corolla, named Try-Me-O. The plants which bloomed early, and which are now getting shabby, should be turned out of doors for a fortnight, and should receive no more water than will keep them from flagging too much; then let their side branches be well shortened in and the main stem slightly reduced, giving a good washing with Tobacco water, to which a little Gishurst has been added, so as to free them from aphides, thrips, and their eggs, and then put them in a pit that can be kept close and slightly shaded. Thus treated and syringed overhead daily, they will quickly break into fresh growth. If in comparatively little pots they may have a small shift; but if they have sufficient room already, weak manure water will answer. Under this treatment they will again get well furnished with branches that will keep on flowering until the end of October or later, and they will be found very serviceable for greenhouse and conservatory decoration, as well as for cutting, in which condition their flowers will last much longer than earlier in the season.

Petunias.—The beautiful single forms of these raised from seed sown early in spring furnish useful decorative flowering plants through the summer for conservatories and greenhouses; but their natural straggling habit is a defect that does not exist in the double-flowered kinds. The latter keep on blooming for months without getting at all denuded of their leaves or unsightly. These are increased by means of cuttings, which for flowering next year should be put in now, selecting for the purpose the young soft shoots that will generally be found springing from near the base of the plants now in bloom. Treated in the usual way they will root in a few weeks, when they should be moved singly into 3-in. pots into sandy loam, and placed through the autumn and winter on a shelf near the glass, where they will keep on making slow progress and be in a proper state for moving on early in the spring. Petunias, both double and single, that have been blooming for some time will be much benefited by the use of manure water.

Vallota purpurea.—This beautiful plant is one of the most useful which we have through this and the succeeding month, as where a sufficient stock of it exists there is no difficulty in having it to come in in succession during that time. It is most serviceable when grown in from 6-in. to 9-in. pots, with from a couple to half-a-dozen bulbs in each, as it does not like too much root-room. After the flower-stalk first shows itself the blooms come on very rapidly, and where a succession is needed a portion of the plants may be retarded by placing them in a frame at the north side of a wall, where they will be little under the influence of the sun. The Vallota is a plant that requires to be kept always moderately moist, especially when exposed to sunshine; but whilst in chilly quarters it must not be kept over moist. Attend to advancing stock of this plant taken off in the spring from the larger bulbs; give all the light that a good well-glazed house affords and plenty of water, by which means the bulbs will increase to a blooming size much quicker than if subjected to comparative neglect.

Late Heliotropes.—Plants of these propagated in spring will now be found useful for blooming late in the autumn when flowers are scarce. They are always acceptable both on account of their colour and perfume. To have them in a condition to bloom freely they must be well attended to; when their pots are full of roots manure water will much assist them. The old variety is still a general favourite, but under glass rather light coloured. Etoile de Marseille is a fine kind as regards colour, as is also Madame Fillion. Standard and other large plants that have bloomed for a considerable time under glass should be supplied weekly with manure water sufficiently diluted, as by no other means can plants that continue through the season producing a succession of growth and flowers be kept in the vigorous condition which is essential not only to their healthy appearance, but to enable them to bear the full amount of bloom of which they are capable.

Chrysanthemums.—The time is now come when Chrysanthemums want the most careful attention, without which, no matter how well they have been treated in the early stages of their growth, or what may be subsequently done for them when nearer blooming, they will fail to give satisfaction, for, now as their pots are getting full of roots, should there be any neglect in not keeping the soil sufficiently moist, or in supplying them with liquid manure regularly, they will neither retain their foliage in a fresh healthy state down to the base, nor will they produce such a head of fully developed flowers as they otherwise would do. Where the plants are plunged see that the roots do not grow through the bottoms of the pots. Keep the branches regularly tied so as to avoid breakage through wind, and place them sufficiently far apart in a light position to prevent them becoming drawn, and to admit of getting amongst them to water and syringe them, which latter operation should be practised in the evening of every dry day.

Pelargoniums. — The earliest-flowered large varieties of these that were turned into the open air recently should, now that the lower part of their shoots will have assumed a hard brown colour indicative of the necessary ripened condition, be cut down, leaving two or three eyes (according to the size of the specimens) above where the shoots spring from, and as soon as the heads are thus removed place the plants in a pit or frame, where they will be protected from too much wet; keep them a little close and syringe them overhead daily. Thus managed they will push young growths forthwith. The fancy varieties may be treated in a similar manner, but they do not require (nor will they bear) cutting in nearly so close as the large-flowered kinds, and in their case it is even more necessary to be careful that the roots do not get too wet.

Hardy Fruit.

Strawberries.—The plants should now be cleared of runners and the ground "pointed" over. New plantations may also be made, either with forced plants or newly-formed runners. Deeply and well-enriched ground is indispensable to the production of fine Strawberries.

Raspberries.—It will now be necessary to thin out the new canes to the minimum point—about three to each stool—and as soon as the fruit has all been gathered, any of the old canes that interfere with the full development of the new growths should be removed. In order to prevent injury from wind, the new canes should also be tied in at once.

The new shoots and points of cordon and espalier-trained trees of Apples and Pears may likewise now be tied in. Spur back all growths not required for furnishing the trees to within three joints of the old wood, an operation which, combined with partial root-pruning at the proper season, will conduce to fruitfulness. The majority of Peaches and Apricots may now have the current year's shoots laid or tied in to the wall, but previously pinch closely back all sub-lateral growths that have formed on them. Any trees that have suffered from the effects of last winter's severity and which have not yet fully recovered their former vigour, may still be left to grow unrestrictedly, but no fruit must be expected from them next season. Keep down aphides and red spider by occasional syringings with soap-suds or a weak solution of Gishurst Compound.

Vegetables.

Onions.—A little winter Onion seed should be sown; it is better to put some in now, and again in a fortnight's time, than to trust to one sowing; as in severe winters the plants from one will frequently succeed when the others fail. Very much depends on the kind of weather prevailing during the autumn, for the young plants of the first sowing will sometimes get a little too large, and in other seasons the second will be too late. Prepare the ground well by deep digging and moderate manuring; sow in rows 1 ft. apart. In very bleak, cold situations the White Lisbon, being very hardy, is suitable for sowing; in milder localities, Giant Rocca and Globe Tripoli are good kinds.

Cut out the flower-stems of Globe Artichokes as soon as the heads are gathered; neglect in this matter at this season is often the cause of the plants dying off through the winter. The young growth makes little progress until the old stumps are removed, not having time to get strong enough before autumn. Finish planting late Broccoli and all kinds of winter greens. Walcheren and Veitch's Autumn Giant Cauliflowers should also be planted for late autumn use on well manured land in an open position. Sow a good breadth of Prickly Spinach for standing the winter. Parsley may yet be sown for late spring picking; it will not run to seed quite so soon as that sown earlier. Make a good sowing of Endive, of both the green-curled and Batavian varieties, for winter. The earliest sown crop will now be full grown, and portions of it should be tied up and blanched in succession. The blanching may easily be effected at this season by covering each plant with an inverted flower-pot, with a bit of Moss twisted into the hole to keep out wet, air, and light. Plants from the successional sowings should be planted out on well prepared land, 1 ft. apart, at intervals of two or three weeks.

A Pretty Town Garden.—With a little trouble and taste the small but valuable spaces to be found in front of town houses might be converted into charming little gardens. One of these, which I noticed the other day in the neighbourhood of London, might be advantageously taken as an example. It is about 25 ft. square and fenced round, but the fences are completely hidden by a white Jasmine literally covered with blossoms. Two plants of this Jasmine are also trained on each side of the windows, which themselves, as well as a small balcony, are gracefully draped with a mixture of Virginian Creeper, scarlet Nasturtiums, Blue Convolvuluses, Creepy Jenny, and Tropæolum canariense, all easily grown plants and admirably adapted for such purposes. On the shady side of the Jasmine hedges are planted Ferns amongst rough stones, and on the sunny side annuals of various kinds. In the centre (which is Grass) is a fine specimen of Rhus glabra (one of the most valuable of town shrubs), and round its base is a mass of blue Lobelias. The effect of this arrangement was charming. Where more variety is desired it may easily be had, as there are numbers of other plants which thrive equally well in most of our small suburban gardens.—S. E.

GLASSHOUSES AND FRAMES.

LOBELIAS AND HOW TO GROW THEM.

In the open air and in pots the Lobelia is one of the most important of plants; hardly any flower garden is now considered complete without one or more beds or borders being plentifully supplied with the beautiful Lobelia speciosa or some of its many varieties, such as Lustrous, Blue Stone, Blue King, and the lovely Paxtoniana, a white variety margined with blue. There are also one or two pure white Lobelias of the speciosa section with flowers nearly as large as the species. Of the smaller or pumila section of L. speciosa, magnifica, grandiflora, and Mrs. Murphy (pure white) are perhaps among the best. The double variety is also magnificent where it succeeds well, but it is very erratic, and hardly to be depended upon in beds or borders, sometimes forming a complete sheet of bloom, and at others the shoots running up through it, as it were, overpowering and preventing it from blooming, presenting the appearance of tufts of Grass. It seems difficult, perhaps impossible, to guard against this peculiarity, inasmuch as where the plant is perfect in form and flowering one season it becomes weedy-looking the next. This double blue is, however, a grand subject for culture, and under the superior climatal conditions that glass affords it comes with greater certainty, and hardly any plant can equal the richness and beauty of this double Lobelia crowned as thickly as possible with its lovely balls of beautiful blue.

The chief points to start with in the successful culture of the Lobelia are good soil and well-grown established plants. The soil should be light and rich, and rest on a dry and perfectly drained bottom. The Lobelia enjoys abundance of water when in robust and free growth, but nothing is more fatal to its well-doing than stagnant water at the roots—if on a porous bottom it may be plentifully watered during a dry time in summer without fear of injuring the roots, neither can the roots of Lobelia make way nor the plants thrive in a strong adhesive soil composed of clay or heavy loam, or if the compost be heavy, it must be lightened by a plentiful addition of leaf-mould, sand, or peat. The Lobelia thrives admirably in equal parts of rather sandy loam and leaf-mould with a fair admixture of sand to keep it open. Charcoal-dust and peat also form capital additions to loam for their successful culture; likewise spent manure from Mushroom beds. A slight mulching of one-year-old sifted hotbed manure will be found a capital addition to beds or borders for keeping out the drought from and nourishing the roots of Lobelias through a dry season. One of the greatest difficulties, however, in carrying Lobelias in full beauty through the season is the freedom with which they produce seed and the tentative mode in which it is ripened—a pod at a time almost is the order of ripening. But where flowers are the object, this stage of maturity should never be reached. The moment the flowers fade they should be picked off, and so on persistently every week or ten days throughout the season. Of course the labour is great, but so is the reward. Few features in the flower beds or borders are more thoroughly enjoyable and satisfactory than a perfect band or small bed of any of the varieties of Lobelia speciosa from the middle of June till the frost clears the garden of its autumnal beauty. Of course this mode of culture prevents the saving of seeds, but this is of little moment, as it is better to purchase them than save them. If, however, any plants of unusual merit, distinctness, or improvement in size, colour, or substance of flower, appear, it is easy to perpetuate such, either by means of cuttings, rooted branches, or by lifting the plant, potting it, and placing it in a gentle bottom-heat until established; after that, set it on a light, airy greenhouse or forcing-house shelf, when it may be increased by cuttings and root division to any extent in the spring, planting a stock on a piece of reserve ground for seed. This increase by cuttings, rooted side-shoots, or conservation of the old plants by potting a few of them in the autumn, is also the best method of preserving and increasing the stock of special varieties. The seeds of even the truest types vary considerably from each other, and also from the original, and to this inherent variability we owe the many kinds of Lobelia speciosa that add so largely to the enrichment of our flower gardens. It is, nevertheless, mortifying when white or semi-white flowers break forth among the truest strains of Blue King, or tall speciosas revert from the most carefully selected stock of L. pumila grandiflora. To avoid the risk of all this strike cuttings, plant rooted layers during the summer, or pot sufficient old plants for stock in the autumn.

The Lobelia strikes roots freely in a brisk heat in a moist propagating pit or frame in spring. These cuttings should be potted or boxed off, and got into bulk by the end of May in exactly the same way as seedlings sown in heat in September, October, or February. Those who want early Lobelias from seed should sow in the autumn, and prick the seedlings off in boxes or pans, or shift them into 2½-in. pots before winter. Store them on shelves near the light exposed to abundance of air, give another shift into small 6-in. pots in March into equal parts of leaf-mould and loam, and such plants will be perfect for planting by the end of May. Spring-sown seedlings may go into smaller-sized pots and be planted rather more closely, but will not flower so early or so well. On the whole, therefore, autumnal propagation, either by means of cuttings or seeds, is preferable to the sowing of the seeds in spring. For pot culture these autumn-sown plants are best. They are merely pushed on a little farther till they are large enough to fill a 6-in. or 8-in. pot; the first size is the best, the second as large as any pot should be for a single Lobelia speciosa. The taller-growing sections may be stopped a few times during the earlier stages of growth, to cause them to grow horizontally. At the final shift the plants should be kept well up in the pots, so as to allow the shoots to fall over the sides and cover them as they grow and flower. In the case of well-grown plants belonging to the taller sections, such as Paxtoniana, one of the chief merits of pot plants is that of drooping over and wholly hiding the pots. In the pumila section the plants are too dwarf to do this, but the rim may be entirely covered by a carpet of blue. The double blue is also of this dense habit, and is inimitable for the decoration of light-coloured marble, glass, or silver vases, or flat baskets. Some of the taller ones are also admirable for the furnishing of small hanging baskets or raised stands. The soil for Lobelias in pots should be equal parts of leaf-mould and loam, mixed freely with silver sand or charcoal dust. The drainage should be clean and ample, and over it should be put a layer of small pieces of manure about the size of marbles, and almost as hard, such as that of cows at least two years old, mixed with a little Cocoa-nut fibre refuse, to ensure a thorough and nourishing drainage.

When the plants are in full growth and flower they enjoy manure water at least once a week; that made of a slight admixture of guano and soot suits them admirably. Having such a limited root-run, these plants must never once be allowed to become dry, and if carefully attended to they will continue long in beauty. When done blooming they may be cut down, repotted, and used for flowering again or for stock. With about three lots of Lobelias in pots to be brought on in succession, the conservatory, window garden, or sitting-room need seldom be without the enlivening and enriching presence of these lovely plants from April to November. T. F.

Tuberous Begonias from Seed.—The experiences of various persons in regard to raising tuberous Begonias from seed seem to differ considerably. In February last, seeing in this paper an assertion that it could be raised without heat, I resolved to try, as I had not yet attempted Begonia raising. I procured a 1s. packet and sowed it as instructed, placing the pan in the greenhouse; after waiting three weeks no plants began to appear, and therefore I thought it best not to rely on that batch, even if any came, so I got another packet, sowed it in the same manner, and placed the pan this time in a hotbed, with a bottom-heat of about 70°, removing the first pan to the same place. In about a week some of the first sown began to appear, and next week the second batch came up well, and soon out-grew the first, which in about a month perished altogether, but the second lot came on admirably, and I have now ninety-four nice healthy little plants in separate pots, and I firmly believe that had not the soil began to turn green before the last of them were fit to move, I should have got quite forty more. I removed them to the greenhouse as soon as pricked out. Your correspondent "J. C. B." says, "cover the seed with ¼ in. of compost." This must be a mistake, for such minute seed, as small as dust, could not possibly get through this. If "C.'s (Byfleet)" instructions be carried out, satisfactory results will follow.—Floropihlus.

Cyclamens.—A sowing of seed of these beautiful spring-flowering plants should be made without delay. There is nothing like shallow pans in which to sow the seed, and the soil should be a fine, free, sandy one. The pans require to be placed in a brisk, moist bottom-heat, with a piece of glass over the pans. The seed, if full and well ripened, soon germinates, and when the plants are large enough to have put forth three leaves they should be pricked off into 5-in. pots in a rich, light soil; the pots should be well drained. The growers of Cyclamens in quantity are now busily engaged in getting their seed sown, and their practice is the one just set forth. Seedlings raised from seed sown in August make good plants to flower fifteen months afterwards if they be grown on as fast and as liberally as possible.

Winter Mignonette.—Seed of this should now be sown to flower in the winter. For this drain some 6-in. pots; use ordinary loam, to which add one-fifth of leaf-mould and rotten manure, as also some sand; with this fill up the pots to within an inch of the rim, smooth the surface, putting a dozen seeds in each, cover lightly, and keep slightly moist. The seeds will germinate in a week or two, when they must have plenty of light and air. An ordinary garden frame, with the lights off, except in very wet weather, is the most suitable place for them during the next six or eight weeks. There is nothing more acceptable either for cutting, greenhouse, or room decoration through the winter or early spring than Mignonette, and it is very suitable for amateurs to cultivate; the principal point to be observed is to give plenty of air and light in the early stages, so as to keep the plants dwarf and stout; if ever they get weak and drawn up, they are worthless.

Profits from Small Greenhouses.—In looking over the volume of Gardening Illustrated, I read the troubles of "Lancashire Working Man," and his appeal for advice to turn his valuable property to account seems deserving of answer. The writer remembers a man who got a golden return from some greenhouses, and this plan might be followed by many who possess small greenhouses and find them rather like white elephants on their hands; but with Cucumber culture, aided by Kidney Beans and spring salad, the houses may be made as profitable as any one could wish. Take for stock the Marquis of Lorne Cucumber (Hamilton), a shy seeder with solid and firm flesh, and the Telegraph Cucumber, excellent either for summer or winter crop. These must be grown in the greenhouse, and with the French Beans in pots, ripened in April and early in May, and in a frame a number of cuttings of Geranium should be ready to come into the house, and Musk grown in the border may be potted off and forced in the frame by the aid of a lamp stove. All these things meet a ready sale in large cities, which we may conclude the "Lancashire Working Man" lives near, and a number of easily grown plants may be flowered in the houses and sold for window decoration as follows:—Hire a low cart and donkey, and fix withies across the cart, covering over with white canvas, and fastening the front and sides firmly down with bast matting or nails, leaving the tail end open; now fill the cart with plants in full bloom, a few late Cucumbers, and some Musk in pots. The woman or boy who acts as vendor should receive 2d. in the 1s. These plants, &c., sold at market prices thus would soon repay the possessor of what too often proves a plague to those who aim at too ambitious results.—Cantab.

Lapagerias.—These are the easiest-grown climbers with which we are acquainted. They require a cool, moist soil and a perfectly cold house, in which the shoots should be trained close to the glass, where they will flower their whole length. The best plan is to stretch wires 4 in. or 5 in. apart for it in the direction in which the shoots are to be led, and they should be allowed to follow the wires themselves, which they will do—twisting along as neatly as possible—without the least assistance, except that when more than one shoot is allowed to a wire care must be taken to prevent the leaves being caught in the twists. To attempt training the shoots by ties is troublesome, and not a successful plan. Stopping the shoots occasionally induces flowers to come sooner than they otherwise would, and produces little spurs, each of which furnishes several flowers. The beautiful white variety is a great favourite for various purposes, and we would recommend those who have it to plant it out at once, however small their plants may be, in a compost of peat, loam, and plenty of sand, with a little rotten manure, and to give it room and light, keeping the soil about the roots rather wet than dry. Our large plant which grows so rampantly every year, though it does not flower so freely, owing to the shade over it, has never been otherwise than wet at the root for three years, on account of the drip from the other pots, and yet it is in fine

Spray of Lapageria.

health and still growing rapidly. The Lapageria makes a disproportionate quantity of large thick roots considering its habit and growth, though the shoots of established plants are sometimes as thick as small pot Vines. The corridor in Messrs. Veitch's nursery is in autumn remarkably gay with white and rose-coloured flowers of L. alba and L. rosea. Instead of the shoots being formally trained to the trellis-work under the roof—a method too frequently practised—they are allowed to droop loosely, by which means, when thickly laden with bell-shaped, waxy flowers, a much better effect is produced. In sunless places in cool houses even in London these plants succeed perfectly, and can therefore scarcely be too highly valued. In Covent Garden Market blooms of these Lapagerias are fixed by means of wire to long shoots of Ficus repens in order to form festoons, wreaths, &c.; this obviates the necessity of mutilating the plants, and, associated with the round, green and bronze leaves of the Ficus, the waxy, bell-shaped flowers of the Lapagerias are equally effective, and shoots of the Ficus can always be had in abundance.—C.

Rhynchospermum jasminoides.—Beautiful as this is when shown as a specimen plant, it cannot compare with plants of it grown on pillars in conservatories. We have at present a pair covering pillars and ornamental girders 20 ft. high, and quite masses of pure white blossoms that emit a delightful fragrance. They thrive amazingly in the intermediate temperature of a conservatory, and the blossoms are invaluable for button-hole and other bouquets.—J. G. L.

SCREENS FOR FIRE-PLACES IN SUMMER.

THE illustration on the next page represents a fire-place jardinière invented by Messrs. Barnard, Bishop, & Barnard. It consists of an ornamental cast-iron box provided with hooks suitable for attaching it to the slow-combustion stoves made by that firm. As, however, few of our readers probably possess such stoves, we may mention an excellent method of forming a screen for any ordinary fire-place in summer, and now is a good time to commence operations. Procure a stout box the length of the fire-place, 12 in. to 15 in. wide, or more if desirable, and 8 in. or 9 in. deep. The front and ends may be painted or varnished according to taste. Perforate the bottom by means of an augur to afford drainage. Then procure sufficient turfy loam to fill the box, and mix with it a liberal quantity of well-decomposed manure and some road sand. After draining the box by placing a large crock over each hole, and putting on these crocks ¼ in. or so of clean gravel, put some of the rough pieces of soil in, then procure from some good nursery two or three good plants of the Irish or other kind of Ivy in pots, well water them, and when they have drained a little turn them out and plant them in the box close to the back. In front and round the ends plant a row of young plants of Creeping Jenny, and fill the middle up with hardy Ferns, which may be procured in pots at a nursery, or in the form of roots in the market. Those in pots will be best. A few pieces of stone may be placed between the Ferns, if desired, to give it a less formal appearance. In each corner at the back of the box must be fastened a stout lath of the height of the fire-place, and to these should be fastened a piece of wire netting to which to train the Ivy, or a wooden lattice would answer as well. Place the box in a partially shaded position out-of-doors. Keep the shoots of the Ivy tied in as they grow, and stop them when they reach the top. Give plenty of water, and in winter the box would be better surrounded with ashes or sand to keep the frost from the roots. In spring cut the Creeping Jenny down close to the soil, and by June a beautiful screen will be formed. A few cut flowers placed in among the Ferns will give a good effect. We must add that the box would be better if provided with a handle at each end, in order that it may be taken out of the room once a week, and the leaves of the Ivy and Ferns receive a thorough washing with the syringe, and the soil receive a good soaking with water.

Staking Tall-growing Potatoes.—Reserve the old Pea-sticks, and stick and tie the tall Potatoes. This will let the sun to the roots, and wonderfully improve the appearance of the plants in small gardens.—W. W., *Belper*.

ANSWERS TO QUERIES.

2576.—**Copying Machine.**—As I have made several of these from various receipts I think I can enlighten "C. H. A." as to "Subscriber's" intended meaning. 2½ oz. of gelatine glue should be steeped for twelve hours in 5 oz. of water (in a jam jar); then place the jar in a saucepan half-full of water, and set on the fire till it is perfectly melted. Stir in the glycerine and the ten drops of carbolic acid, and when the whole is thoroughly mixed, pour it out into the case which is to form your copying machine. It is a good plan while on the fire to stir in ½ oz. of precipitated chalk, as this prevents the ink from adhering too firmly to the compo, and also renders the writing more visible. It should be left a day to settle before using.—FLOROPHILUS.

—— From a receipt which appeared in a previous number I have made a copying machine. First I got made a tin case 18 in. long, 12 in. wide, and 1½ in. deep; then I procured 7½ oz. of Russian glue, 13½ oz. of glycerine, and fifteen to twenty drops of carbolic acid. I then put the glue into a jar with 12 oz. to 14 oz. of water; then placed the jar in a saucepan containing water, and put it near the fire and left till it was quite dissolved. Next I mixed the glycerine and carbolic acid with the glue, and after stirring it well for a few seconds I strained it through a piece of muslin into the pan or case, and left it in a level position for eight or ten hours, and after washing the surface with sponge and cold water it was ready for use, and it has answered admirably. To erase the copies from the mixture it must be washed with the sponge till it has disappeared. To make the ink, get three small penny packets of Crawshaw's or Judson's violet dye and put it to 1 oz. of water, and mix with it two teaspoonfuls of moist sugar. Be sure the copy is quite dry before laying it on the mixture, or it will run.—THOMAS GULLIVER GRIFFIN.

2511.—**Aspects for Hardy Flowers.**—Where a garden is surrounded by walls the endeavour should be made to clothe them with climbers of some kind. Where a variety of aspect exists a considerable amount of pleasure may be derived if the plants are selected with a view to their suitability for the position assigned to them. It is often considered unadvisable or impracticable to train climbing plants to low walls. This is, however, a mistake, as by so planting that each specimen is allowed considerable lateral development, excellent results may be obtained. For a north aspect nothing can equal Ivy, the small leaved variegated kinds being especially pleasing, thriving well and preserving their variegation in such situations much better than when planted in unexposed places. The south wall we would devote to Roses; planting such kinds as Gloire de Dijon, Devoniensis, Duchess of Edinburgh, climbing Victor Verdier, and climbing Jules Margottin. On the east and west walls may be planted Clematis montana, flowering so freely and profusely in spring, C. Fortunei, C. Standishi, and any of the lanuginosa type, such as l. candida, all of which flower upon the old wood, and consequently require but little pruning. Cotoneaster microphylla and Pyrus japonica are excellent subjects for the purpose, as are also the golden variegated Honeysuckles, Escallonia macrantha, Euonymus radicans variegata, Jasminum nudiflorum and revolutum, and Chimonanthus fragrans. The north border would be a congenial home for the various members of the Lily family which delight in shade and shelter. The Orange, the Tiger, the old white, and L. longiflorum should be planted in clumps of several bulbs together, in which manner their characteristic beauty is much better realised than when dotted here and there in the form of isolated specimens. The various interesting species of Cyclamens, such as C. hederæfolium, vernum, Coum, and europæum, also find themselves at home in such a place; but they should be planted somewhat raised above the level of the soil, so as to ensure perfect drainage, in mould composed to a great extent of decomposed vegetable matter. The many beautiful kinds of double and single Primrose and Polyanthus prefer a shady situation; and bulbs, such as Scillas, Fritillaries, Aconites, Snowdrops, Narcissi, and Myosotis dissitiflora, thrive admirably when thus placed. They also last much longer in beauty than when more fully exposed. Christmas

Roses, Pinks, Carnations, Roses, Hepaticas, Delphiniums, Arabis, Alyssum, Daisies, and hardy Fuchsias will succeed in any situation except the north. Sweet Williams and show and fancy Pansies prefer an east aspect, where they get relief from the noonday sun, as do also the bedding Violas and Pansies, which flower continuously up to the autumn, although these latter will do very well in full exposure if well watered in hot water. With respect to beds upon the lawn, I would advise that none be made anywhere in the centre of it; by preserving a free, open expanse of Grass the surrounding features will be brought into greater prominence. If anything is planted in the middle of the Grass plot let it be a Conifer of moderate growth, such as Cryptomeria elegans, Biota elegantissima, or Thuja semper-aurea. At each corner of the lawn a neat-habited flowering shrub might be planted, such as Hydrangea paniculata grandiflora, so beautiful in the autumn, Berberis Darwini always fresh and bright of foliage, and carrying a profusion of bright orange-yellow flowers in spring; the Laurustinus, and Viburnum plicatum, or Spiræa ariæfolia. Near to the margin of the lawn and between each shrub a bed might well be formed. One of these might be devoted to the florists' varieties of the Fuchsia, far too little use of which is made for open-air decoration. Plant them out in well-stirred ground, encourage to liberal growth by means of frequent waterings in hot, dry weather, and at the close of the autumn cut them over close to the ground, and cover the roots with 4 in. of ashes, or, better still, good dung, the manurial properties of which will be worked into the soil by the winter rains. These plants when once well established grow with great vigour and give an enormous wealth of bloom. Good varieties for the purpose consist of Rose of Castile, Mrs. Marshall, Wave of Life, Lady Heytesbury, Avalanche, and Madame Cornellissen. Another bed should be planted with Clematis of the Jackmani type, taking such varieties as Jackmani, rubro-violacea, and rubella. In planting work away all the old soil from the ball, and mulch the surface with rotten dung. Cut back the plants each year to within 6 in. of the soil, and train the shoots as they grow to short stakes inserted crosswise in the ground. The other beds we would devote to hardy annuals, which may be sown from March to May at intervals of ten days.—J. Cornhill.

—— A border which gets only the morning sun will suit Auriculas, Primroses, Polyanthuses, Hepaticas, Christmas Roses, and Pansies. The hardy Cyclamens also do well in a shady place. Pinks, Carnations, Phloxes, Sweet Williams, and Delphiniums want all the sun they can get. Roses will not do well in the kind of garden described. Gloire de Dijon and the old Maiden's Blush do well as standards in districts towards which the prevailing winds do not blow so long as not more than three rows of houses are between the garden and the open country. When even another two rows of houses are added they begin to dwindle. A good selection to begin with would be Annie Alexieff, Comtesse de Chabrillan, Coquette de Blanches, Glory of Waltham, Princess Louise Victoria, Jules Margottin, and General Jacqueminot. As dwarfs on the Manetti these would answer in a large bed cut on the turf if the turf was buried 2 ft. deep under the bed, and plenty of manure worked into the soil.—J. D.

2508.—**To Make Putty.**—The following is the way in which I have often made a superior putty which has stood the weather well: First put out a quantity of whitening into an old bowl or clean vessel of any kind; then pour a little boiled linseed oil on it, and rub up together with a putty-knife or spatula, adding more oil as required until the whole has become tolerably well mixed. Then it will be necessary to take it in the hands and knead and work it about for half-an-hour or more (you cannot get it well mixed any other way); the more it is worked the better it will be. If you please you may add about a fourth part of white lead, which must be well worked in. It will be found a somewhat tedious and by no means pleasant process.—Florophilus.

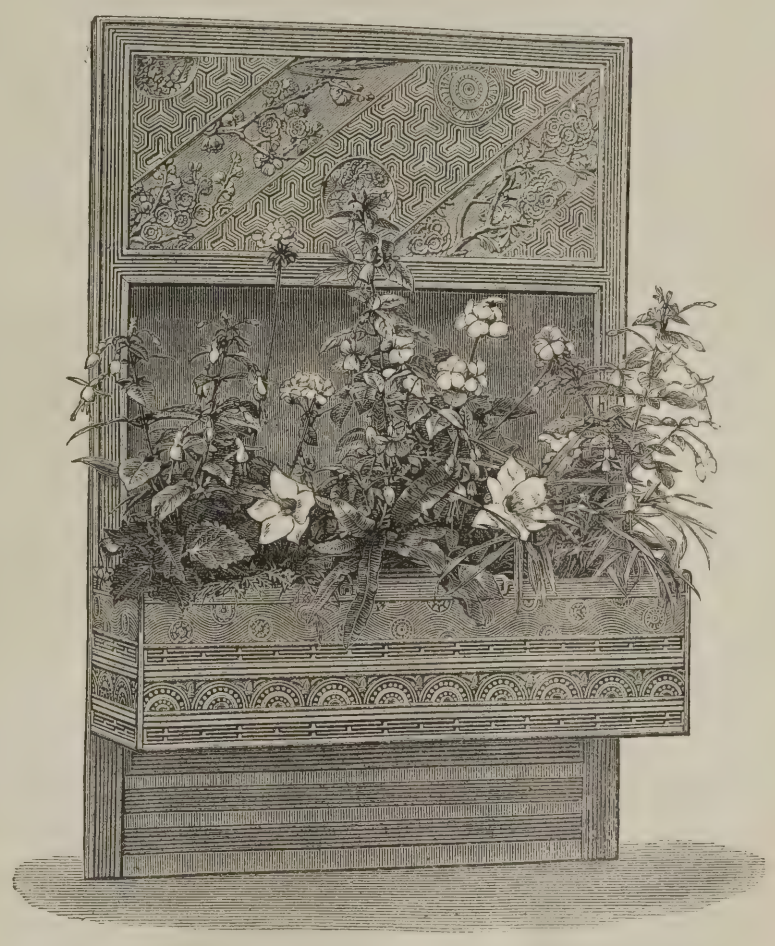
2594.—**Grubs in Carrots.**—The white maggot complained of is at times very troublesome, but yours appears to be an exceptionally bad case. The only remedy likely to be at all effectual is lime water. Give the plantation two thorough soakings at an interval of twelve hours, and then another twenty-four hours afterwards. Lime water is one of the most effectual destroyers of vermin that we possess, and its use is highly beneficial to all growing crops. Another year procure some good strong soot and mix a goodly portion of it with the soil before sowing the seed. A little lime or wood ashes, or both, may also be added thereto. Grubs of all kinds dislike such ingredients, and if a free use is made of them the grubs will give but little trouble. Soot is one of the best manures for Carrots; it gives substance to the root and colour to the foliage, without too much stimulating the latter into rank growth.—J. Cornhill, *Byfleet.*

2590.—**Roses not Blooming.**—Gloire de Dijon is naturally a strong grower, and when fresh planted in congenial soil runs away to wood at a rapid rate. When it has become thoroughly established it will in all probability flower more freely. At the same time you may, if you please, pinch out the points of the strong shoots, which will result in the formation of a crowd of laterals, each one of which should give bloom. By stopping the shoots at intervals of a week a succession of bloom will be maintained until late in the autumn.—B.

2522.—**Book on Painting Flowers in Oil.**—There is no book on painting flowers in oil that would be of any service to an amateur. Painting cannot be learned from books, the processes are too varied and complicated, even the amount of pressure put upon the point of the brush changing the touch produced entirely. The best course is to join the classes at a school of art, a list of which is published in the "Art Directory," which can be had from the Department of Science and Art, South Kensington, for 6d., and postage.—Artist.

2583.—**Apples and Pears for Town Gardens.**—The following do well in the neighbourhood of London: Apples—Hawthornden, a very large cooking Apple, ripens in October, and if gathered at the right time will keep well into December; Keswick Codlin, a profuse bearer, ripens in September; Dumelow's Seedling, very similar to a Ribston, keeps till March; Wellington, rather larger, much the same sort; Blenheim Orange and Blenheim Pippin, useful either for cooking or table. Pears.—Easter Beurré and Hardy Beurré do well in almost any season; the former is a very late Pear.

2488.—**Damage Done to Gardens by Cows.**—In the answer of July 10 to the initials "J. R.," under the above heading, it is stated that a person is not held liable for damages done to his neighbour's garden by his cows if such neighbour's fence is in a bad state. I submit that those persons who have cattle, and not those who have not, must provide protection from such trespassing. This has been decided by a court of law. It seems unreasonable to expect that a person who has not cattle should be obliged to provide a fence to keep out his neighbour's.—J. G. [This may be correct, but you have misunderstood the answer you refer to. What was meant to be conveyed was this: Suppose you plant a hedge round your garden, that hedge belongs to you, and you would not expect your neighbour to keep that hedge in order for you, nor be responsible for his cows coming into your garden through your letting the hedge get into a bad state. If your theory be accepted, it would be necessary to have two hedges round the garden instead of one.—Ed.]



Jardinière for Fire-place in Summer.

2594.—**Wireworms in Carrots.**—Our gardener tried the experiment last June of putting a mixture of one-third salt and two-thirds soot on one end of a bed of Carrots attacked by wireworms. It did not injure the Carrots, which proved sound and healthy, while all the rest of the bed was utterly destroyed by the wireworms.—J. M. L.

2582.—**Unheated Glasshouses.**—A glass roof fixed to a wall is certainly a great aid to the successful culture of the Chrysanthemum and the Rose. Both of these plants suffer much from the inclemency of our Eng-

lish climate—the one in the autumn when expanding its blooms, the other in the spring when making its growth. The slight protection of a glass roof is all that is required in order to enable the grower to derive complete satisfaction from their culture. With such shelter the finer kinds of Tea Roses may be grown with every prospect of success, inasmuch as they will be preserved against the extreme cold and vicissitudes of a severe winter. There will be no absolute need to close the ends unless the situation should be very bleak; indeed, for the Chrysanthemum it will be better to leave them open. Both the Auricula and the Christmas Rose will get the shelter that they need at blooming time, but in the case of the Auricula we think that the situation would be hardly cool enough in the summer; the plants would have to be removed to more airy quarters. The florists' varieties of the Fuchsia would do well in such a place, cutting them down in the winter and covering the stools with several inches of protecting material. —J. C.

2574.—**Removing Moss from Stones.**—The most effectual preparation I have found for this purpose is Sutton's garden path clearer. Its simple manner of use very much recommends it, as well as the complete way it keeps the Moss, &c., from growing again. For cleansing greenhouse floors, stone pavings, gravestones, it is invaluable. Particulars may be obtained from Messrs. Sutton & Co., Chemists, Stowmarket, or Messrs. Cornell, Chemist, Ipswich.—A. C.

2594 & 2597.—**White Worms in Carrots.**—I was troubled with white worms in my Carrot bed, and I tried the simple method of sprinkling salt between the rows of Carrots (about three pennyworth to 24 ft. or 27 ft. square) and in a week they had all disappeared. The salt must not be put on thickly, or it will stop the growth of the Carrots, but if put on thinly it will clear the ground of other grubs which will do almost as much damage to the Carrots as the white grub. Any crop may be sown after the Carrots are gathered, as the ground will be thoroughly cleared.—BEN. W. GREEN.

2515.—**Management of a Room Fernery.**—The reason that you do not succeed with your Fern-case is that you keep it too close and over-water the plants. The case should be opened for an hour twice a week or so, and you must remember that plants in a close case do not need nearly so much water as those grown in a free atmosphere, because the water cannot escape; it floats in the form of vapour in the daytime and condenses at night like dew, thus performing the natural functions of rain without a frequent supply from the watering-can. There should also be efficient drainage at the bottom, so as to prevent water from stagnating. FLOROPHILUS.

2523.—**Insects and Mignonette.**—Mignonette is liable to be thus attacked in some soils. Prepare some lime water and water with it several times. This may destroy the enemy. The better way another time will be to hinder its approach, which may be done by mixing a goodly portion of soot with the soil, which will have the effect of imparting vigour to the Mignonette and keeping off the insects. As soon as the plants are fairly above ground, water once or twice with lime water.—J. C. B.

2595.—**Drosera rotundifolia.**—The Sundew grows naturally where the soil is moist, and where good drainage exists. These natural conditions must therefore be imitated as far as possible. Success, we think, would be best attained by planting in Sphagnum Moss, placing the pot in a pan of water in the summer. Keep the plants in a cold frame in the winter, and maintain the Moss at all times in a moist state. —J. C.

2532.—**Blight on Ferns.**—The green fly may be destroyed by dipping the affected plant in tobacco water or syringing them with the same. We cannot say without seeing it what the white insect is—perhaps mealy bug; in which case as the collection of plants is not a large one, we would advise you to clean them with a blunt-pointed stick. Tobacco water is made by pouring boiling water upon common shag tobacco, straining it through a fine cloth. Use it at the rate of 4 oz. to the gallon.—J. C. B.

2593.—**Lilies Unhealthy.**—We cannot account for the Lilies going off in the manner described. Japanese Lilies are this year, as a rule, growing very strong. We should not suppose green fly to be the cause, but you may easily ascertain if such exists by a close examination of the plants. In some soils this species of Lily will not thrive kindly; try them another year in two-thirds peat and one-third loam well sanded, and plant the bulbs in the open air in pure peat, or you may add to it a little leaf-mould.—J. C. B.

2531.—**Propagating Sweet Briers.**—As soon as the foliage falls take off some shoots of the current season's growth, cut them to three eyes, leaving the leaf to the terminal eye only. Prepare a nice piece of soil in a shady situation, where the sun in April and May does not shine fully upon it, by well stirring it and adding to it a good portion of river or white sand. In this insert the cuttings very firmly quite to the leaf, water if dry, and protect in winter with a little litter. Be sure to keep off the sun in the spring, and water when needful.—J. C.

2515.—**Management of a Room Fernery.**—I keep my case closed for weeks, even months, at a time, and find my Ferns grow well. "Annie's" Fernery is possibly in need of new soil. I seldom find it expedient to "doctor" a Fern case which shows green fly and mouldy plants. Have all the plants taken out and cut off the fronds, wash the inside of the case and refill with fresh earth, which can be supplied by any seedsman. When getting the soil, state it is for a Fern case. Before planting the Ferns give them a good washing, and so remove any lurking green fly. Water well after planting, and close up the case for a few weeks. —R. W.

2296.—**Drying Wild Flowers.**—Having dried many hundreds of these, I would recommend instead of blotting paper the paper specially prepared for the purpose (botanical drying paper). Mine is of a greyish colour, more open in texture, and harder to the feel than blotting paper. It dries the plants better and with half the trouble, requiring to be changed less frequently. When it gets damp have a sufficient supply of dry paper ready into which to transfer the specimens.—PED.

2418.—**Collinsia verna.**—About this annual I find the following in a catalogue: "Height, 1 ft.; colour, sky-blue and white; months of flowering, April and May. Collinsia verna is a charming variety, seeds of which must be sown in August as soon as ripe, or they will not vegetate freely." I would advise the present querist, and indeed every amateur who may not have one, to procure a catalogue from some one or other of the large seed growers.—PED.

2508.—**To Make Putty.**—I should advise the writer who wishes to learn how to make putty to procure some at any oil and colourman's. A short time since I glazed a frame, and the putty cost me 1½d. per lb., which is cheaper than making, as it is most troublesome and takes much time; boiled linseed oil is, I believe, the oil used to mix with whitening.—H. S.

2591.—**Roses and Beetles.**—We know of no other effectual remedy than hand-picking. In some places this beetle is very destructive, especially so where much wood exists, for it is there that it appears to breed. We know of a garden thus situated where it would be impossible to grow a Rose at all were not the appearance of this insect watched for, and means taken to keep it under. —B.

2587.—**Roses for North Aspect.**—Gloire de Dijon, Aimée Vibert, John Hopper, Jules Margottin, La France, and Baron Adolphe de Rothschild. Plant in October as soon as the foliage is off.—B.

2592.—**Climbers for Winter Garden.**—Passiflora edulis and princeps, Stephanotis floribunda, Hoya carnosa, Rhynchospermum jasminoides, and Thunbergia lannifolia.—C.

2530.—**Climbers for Cottages.**—If there is space we would plant Clematis Jackmani and an evergreen climbing Rose, such as Leopoldine d'Orleans or Felicité Perpetuelle. The Clematis should be planted in well prepared, richly manured soil, and should be cut back every year early in spring to within 6 in. of the soil.—C.

2533.—**Keeping Roses Fresh.**—We do not think that there is any means of preserving cut Roses fresh for a length of time. If, however, the ends of the flower-stems are cut off daily and fresh water supplied, they will last longer than they otherwise would.—C.

2525.—**Fern Fronds Withering.**—As the Polypodium phegopteris is a Fern requiring abundance of moisture, the only cause for yours damping off is that the drainage is defective. Although it requires a good deal of moisture, it must be percolating moisture. I should advise you to put it in a more free and open compost, consisting of pure fibrous peat with a little fibrous light loam.—FLOROPHILUS.

Goat Moth.—*G. F. C.*—See GARDENING, No. 14, June 14, 1879.

2633.—**Cost of Keeping up a Garden.**—What should be the annual cost of cultivating six acres of land, laid out as follows, viz.: Two acres as lawn and ornamental garden, two acres as kitchen garden, and two acres as meadow? There are two greenhouses and one forcing house.—HORTUS. [This is a most difficult question to answer, as so much depends upon what you expect from your garden, and in what style you wish it kept. Much also depends upon the conveniences at hand to reduce labour as much as possible. Without knowing some of these particulars it would be impossible to give even an approximate estimate.]

2634.—**Camellias Out-of-doors.**—When is the proper time to plant these? and where could I procure suitable plants? Would an eastern aspect suit them?—A LOVER OF CAMELLIAS. [The best time to plant would be in June, just when the plants commence to make growth, or they might, like other shrubs, be planted in September. You can get suitable plants from any good nursery where hard-wooded plants are grown, but in buying, get well-hardened plants, not such as have been forced in heat all their lives. An eastern aspect would not be so suitable for them as a western aspect, inasmuch as the flowers would be more likely to be cut off by frost in spring.]

2635.—**Strawberry House.**—*Publican.*—We should advise a lean-to house with a stair-like stage at the back, leaving a walk along the front. The stage should be within 2 ft. of the glass. You could grow Tomatoes in pots after the Strawberries were done, also French Beans. That is if you have the house well heated. Procure Shaw's "London Market Gardens."

2336.—**Saving Cucumber Seed.**—How long should I allow a Cucumber that I want for seed to remain on the plant? and also how should I ripen and pick the seeds?—NEMO. [The Cucumber must remain on the plant until it is quite yellow, then cut it open and scoop out the seeds, and lay them thinly on a piece of canvas, or in a hair-sieve to dry. The seeds may then be picked out and put in paper till wanted.]

2637.—**Crassulas not Flowering.**—*F. A.*—Plants of this that were bought in flower last year would be better cut down to within 3 in. or 4 in. of the pot. Place them in a rather shady place till they show signs of breaking into growth, then plunge them out-of-doors in the full sun, and take them indoors at the end of September. They will probably then flower next year.

2638.—**Repotting Orange Trees.**—*Jessica.*—These are best repotted in spring just as they commence to make new growth. Pruning should be done in autumn when necessary.

2639.—**Moving Seakale.**—*Constant Reader, Bristol.*—It would not be wise to move old Seakale plants now. Your better plan would be to lift the roots in winter and plant them nearly close together in a cellar, shed, or a frame kept dark. You will then get some early Seakale. In order to make a new bed the quickest plan would be to purchase a hundred roots or so (they are very cheap); or if you cut off the thong-like roots from the old plants when you lift them into 4-in. lengths, and plant them in good land, they will give you a crop the following year.

2640.—**Planting Bulbs.**—*Bulbous.*—The best time for planting Hyacinths, Tulips, and Narcissi is in October. They will thrive in any good garden mould.

2641.—**Flowers Spotted.**—*J. A. K.*—The reason why your flowers have spots round the edges is probably because they do not get air early enough in the day, and water being on the flowers when the sun strikes them through the glass.

2642.—**Club in Cabbages.**—*C. J. J.*—Take equal parts of soot and fine garden soil and mix with water to the consistency of thin mortar. Into this dip the stems of the plants up to the base of the leaves before planting.

2643.—**Renovating Alstrœmerias.**—*M. T.*—The plants having been for some years in the same position, they have probably exhausted the soil. When the tops have died down in autumn, lift the roots which are tuberous, divide them if necessary, and replant in well-drained sandy soil, in which has been worked a liberal quantity of well-decomposed cow or stable manure. During summer a mulching of half-rotten manure is of great benefit to the plants.

2644.—**Berberis Darwini.**—*M. T.*—The fruit of the common Berberry, B. vulgaris, makes a very refreshing preserve largely used in Rouen, but we have no experience of the fruit of B. Darwini for this purpose. We should say it would be equally good.

2645.—**Improving Heavy Soil.**—I have a small garden the soil of which is very heavy, not clay, but a rich black soil. Will any reader kindly say what I shall apply in order to lighten the same?—F. C. [Road scrapings, river sand, or a good dressing of old lime or burnt clay would greatly improve it; so would leaf-mould. Sifted coal ashes might also be used with advantage. If you cannot get any of these, you might light a fire with wood and rubbish; and when well alight, gradually heap some of the garden soil on it until you get a large heap burnt. This will make excellent material for your purpose.

2646.—**Cucumbers Damping Off.**—*J. R. Pemberton.*—See answer 2648. Grass sods which have been in a heap for some time, Grass side downwards, mixed with well-rotted manure and peat, will make a good compost for Cucumbers.

2647.—**Dividing Pansies.**—*Pansy.*—In order to avoid having long straggling shoots when divided, the best way is to cut the plants down nearly to the ground, and work in amongst them a little finely-sifted sandy soil. They will soon throw up young growths, when the plants may be divided. The shoots cut off may be put in as cuttings in a shady border, under a handlight if required.

2648.—**Cucumbers Turning Yellow.**—I have two Cucumber plants in a greenhouse heated with a flue. They have grown well, made a quantity of wood, put forth plenty of false blossom and fruit, which grows to about 2 in. long and then dies off.—J. W. [Remove all

false blossoms from the plants now, and nip out the growing points of all the shoots, when side-shoots will be put forth. As soon as these latter show for fruit nip out their points, leaving one leaf beyond the fruit, and so keep on through the season. A certain quantity of false blossoms should of course be allowed to expand, as these are the male blossoms.]

2649.—**Mimuluses after Flowering.**—I have a fine Mimulus that has just ceased flowering. In what way shall I treat it now? Can I propagate by means of cuttings?—F. C. [If you cut the plant down to within 3 in. of the pot, and place it in a shady position in a frame or on an outside window-sill, it will throw up young shoots from the bottom, which, when 2 in. or 3 in. long, will root readily in sandy soil in a frame, or even in the window.]

2650.—**Propagating Petunias for Next Year.**—*A Novice.*—Shorten back the shoots of one or two of the plants, and they will produce young shoots, which, if taken off with three pairs of leaves and cut with a sharp knife close under the bottom joint, removing also the two lower leaves, will strike readily under a frame or handlight. Eight or ten cuttings may be put into a 6-in. pot half filled with drainage, using sweet, sandy soil. If these be kept clear of frost and damp during winter they will yield plenty of cuttings in spring.

2651.—**Grapes Failing.**—*Romford.*—The berries are imperfectly set. Those you send are abortive, and only contain three stones instead of four. The small ones will never swell; they may just as well be cut off.

2652.—**Blistered Grapes.**—*J. C.*—The Grapes sent appear to have been blistered through the house having been kept closed early in the morning when the sun was out. Give more air. If you cannot open early in the morning have a little air on all night.

2653.—**Vine Leaves Drying Up.**—*S. K.*—If the Vines have plenty of ventilation and water we cannot understand why the leaves and shoots should wither, especially as the Vines are bearing a crop of Grapes. Have some of the shoots been broken in any way?

2654.—**Treatment of Camellias.**—My Camellia flowered well and made new wood, and about two months afterwards again commenced to grow.—C. M. H. [Place it out-of-doors in a light but sunless situation, placing the pot on a slate or some ashes to keep the worms out.]

2655.—**Canterbury Bells not Flowering.**—*F. A.*—We cannot say why a portion of your plants flower and the others do not; probably they will flower later on. Give them a good soaking with manure water occasionally.

2656.—**Poultry Manure for Flower-beds.**—*F. A.*—This is a good manure for flower-beds, but it is best mixed with soil and a little soot. It may be applied as a top-dressing at once or be dug into the soil in spring.

2657.—**Wild White Strawberry.**—I have a Strawberry which appeared a few years back in a bed on my lawn which has a shrub planted in the centre. It has gradually filled the bed, and has no cultivation besides being kept free from weeds. It is quite white and of a peculiar Musky flavour, but its great attribute is that it continually bears fruit from the end of June till cut off by frost. Would it lose these qualities by being properly cultivated?—J. W. [If you take a few of the young rooted runners now and plant them in well-manured soil they will yield larger fruit than the plants in the old bed, which latter, however, may be improved by giving them a top-dressing of sifted manure in autumn, and during summer an occasional watering with liquid manure.]

2658.—**Pruning Apple Trees.**—*Armiger.*—Trees that have had their summer shoots broken off and have again commenced to grow had better be let alone till winter, when the shoots can be cut back to within two eyes of their base.

2659.—**Corn Salad.**—*F. S.*—Sow in rich soil from August to October. Rake the ground previous to sowing, and afterwards, when fit for use, which it will be in winter and spring according to the time it is sown, cut it off close to the ground and wash it. It is used in mixed salads.

2660.—**Statices Losing their Leaves.**—*Chelmsford.*—If the pots they are in are large enough and full of roots, prick off with a pointed stick a little of the surface soil, and give a top-dressing of Clay's Fertiliser and fresh soil, one part of the former to three parts of the latter, or, better still, give them plenty of liquid manure or clear soot water.

2661.—**Roses to Flower in Autumn.**—*Armiger.*—If you cut back the flowering shoots of standard Roses now, they will produce bloomsin autumn.

Hart's-tongue Fern.—*T. A.*—Red spider has evidently been on the leaves. Keep them well sponged with soap and water.

Begonias Losing their Leaves.—*Extortion.*—Over-watering will do this; so will dryness at the roots. Manure water will also cause it if applied too strong or too frequently.

Fuchsias with Curled Leaves.—*St. E.*—The leaves sent appear to have been attacked with aphides. Cut back the affected points or dip them in Tobacco water.

Lily Leaves Eaten.—*F. A.*—There must be a slug or caterpillar about the plant; look under the pots and well examine the leaves.

Gooseberries Bursting.—*Tyro.*—In wet seasons the skins of Gooseberries often burst when the fruit is ripening.

Book on Roses.—Rivers' "Rose Culture for Amateurs," at our office or through any bookseller.

Flower Pots.—We think there is a place in Great College Street near the canal bridge. You should procure flower-pots at any large pottery shop.

Names of Plants.—*Juvenis.*—1, Campanula muralis; 2, Campanula garganica hirsuta; 3, Campanula garganica; 4, Campanula garganica hirsuta; 5, Campanula garganica; 6 and 7, Campanula garganica pallida.——*Cymro.*—1, Hieracium aurantiacum; 2, Achillea Ptarmica fl.-pl.; 3, Tradescantia virginica.——*C. E. C.*—Campanula Trachelium.——*Bradford.*—We cannot name plants from single leaves; send us good specimens and we will do our best.——*Fred Maude.*—The numbers were all obliterated, and the names without numbers we presume will be of no use to you.——*M. E. W.*—1, species of Galium; 2, species of Erica; 3, Erica mediterranea.——*M. S. M.*—Habrothamnus fascicularis.——*A. A., Stafford.*—1, Chrysanthemum Leucanthemum; 2, Campanula Trachelium; 3, Geranium sanguineum.——*M.*—We cannot name Roses.—*H. J. P.*—We cannot name plants from single leaves.

QUERIES.

2662.—**Calceolarias Diseased.**—Can any reader inform me what is the cause of my Calceolarias flagging and dying off? I have had some beautiful Black Sultans which threw up immense heads of bloom, also some Golden Gems, and small brown ones, and the heads and foliage die down and are useless in a few hours. I have pulled them up, but cannot find anything at the root or on the foliage.—CALCEOLARIA.

2663.—**Vegetable Marrows Dying off.**—Will any one kindly inform me how to treat Vegetable Marrows? I have two healthy looking plants just fruiting, but the blight seems to take every blossom as it comes out, and now the foliage appears to suffer. Is there anything to use as a preventive? and is it well to remove all false blossoms?—M. J.

2664. **Improving Lawns.**—Can any one tell me how to improve a lawn? It was laid last autumn; the Grass is very healthy, and grows so fast it is almost impossible to keep it down, but it is meadow Grass, and not that beautiful fine lawn Grass that looks so exquisite. Perhaps there may be some means of improving it.—H. E. P.

2665.—**Rhododendrons not Flowering.**—I have some Rhododendrons which are very weak and wiry, and have not flowered this year. The soil is sandy, and the situation open and exposed to the sea winds. How can I invigorate the trees? Lime trees here are of slow growth; is the soil unsuited to them? and how can they be improved?—W. H. C.

2666.—**Hardy Perennials.**—What kinds of hardy perennials are best to sow now?—W. H. C.

2667.—**Sowing Potato Seed.**—How can I save and plant seed of the Potato?—L. L. D.

2668.—**Uses of Frames.**—To what uses can I put two frames during the winter, in which I have at present Cucumbers growing?—L. L. D.

2669.—**Onion Maggot.**—Can anybody tell me the best method of preventing or destroying this pest? I have tried a mixture of one part soda to three parts salt, but without effect this season, and the Onions are going fast by their ravages.—B. R.

2670.—**Cypripedium barbatum nigrum.**—How should I treat a plant of this that finished blooming about two months back?—L. S.

2671.—**Heating Greenhouses.**—Will any reader kindly tell me the best and cheapest arrangement for heating a small greenhouse (10 ft. by 4 ft. by 6 ft.)? It is placed in the front of the kitchen window, and inside of the window is a cupboard. Could this not be used to contain the apparatus? There is also a gas-pipe close by; could it be used without causing a smell?—LIVERPOOL.

2672.—**Plants on Graves.**—I should be glad for some suggestion as to the proper way of planting. There is a railing on a marble plinth, and a white marble cross at the head. Is Ivy pegged down, or Stonecrop, or any plant of that kind a good and lasting ornament over a grave? All flowering plants can be put in in pots, but I want something that will last through the winter, as if one were not able or present to attend to the grave one's self.—W. R. CROFT.

2673.—**Exhibiting Dahlias and Asters.**—Will someone tell me the best way to exhibit cut blooms of Dahlias and Asters? Would the latter look well in Moss?—ARTHUR.

2674.—**Tulips for Show in April.**—When should Tulips be potted and started for exhibition early in the month of April next year?—ARTHUR.

2675.—**Climbers for Scotland.**—Will some one name the most suitable climbers for covering the front of a house situated in an exposed situation facing south-east in the north of Scotland?—W. S.

2676.—**Drooping Fuchsias.**—Will any reader kindly give me the name of one of the best drooping Fuchsias for a hanging basket for a cottage window?—W. S.

2677.—**Fever Gum Tree** (Eucalyptus).—Can any one inform me how to keep this plant? I had last autumn nineteen fine plants, and only one lived; I find them so very troublesome to put into larger pots. I have had this year six die from moving.—GILBERT.

2678.—**Law Respecting Greenhouses.**—Being a tenant, I got permission from my landlord to put up a greenhouse. I told him I was not going to make it a fixture. I employed a man and had it made, being away from home myself when it was put up. The man I engaged built a wall 18 in. high, and set the house upon this. The framework is fastened together with bolts and screws; it is not fastened in any way to the brickwork. Will some one please say if I was to remove could I take the house with me, or, having built the wall and set the house upon it, it becomes a fixture? Also if I remain would I be allowed to take the house I have built down and put one up of less value?—AN ANXIOUS ONE.

2679.—**Hydrangeas not Flowering.**—Will any reader inform me how to bloom Hydrangeas? I have tried two years and failed. I have been told to grow them as strong and quick as possible, and that would bring them into bloom. I find they make enough leaf, but no bloom. I have several plants now in different stages of growth, and am ready, in fact, to follow any instructions which are likely to lead to any successful results?—J. A. K.

2680.—**Plants to Flower in Winter.**—What plants can I grow to make a good show in my greenhouse in winter? The frost is only just kept out.—C. M. H.

2681.—**Strawberries Placed in Heaps by some Invisible Agency.**—I find in several places in my garden, principally under the shade of Pears and Gooseberry bushes, heaps of a dozen or twenty or more Strawberries with stems attached. The fruit is intact. Can any one suggest what is likely to have conveyed them there?

2682.—**Petroleum Stoves.**—Will any correspondent kindly inform me if it is possible to heat a small lean-to greenhouse, 15 ft. by 9 ft., by means of a petroleum heating apparatus and water pipes, so as to keep out the frost in the winter months? and if so, what is the most desirable apparatus? Also if the stove can burn in the house without injuring the plants? Perhaps some correspondent will kindly give his experience of petroleum stoves.—G. P.

2683.—**Roses on Trees.**—Can any one recommend a good climbing Rose suitable for climbing over the branches of a large Wellingtonia which is dead?—ARMIGER.

2684.—**Eccremocarpus scaber.**—Can any one tell me how to make Eccremocarpus scaber grow rapidly? In the sandy soil of Red Hill the growth is very slow, and by the time the frost comes the plant is only fairly thriving. I made the soil as rich as I could when the seedlings were planted, but that does not seem sufficient; the plants are very healthy, but grow very slowly.—MARCH.

THE HOUSEHOLD.

STRAWBERRIES.

Strawberry Cream.—Pick the stalks from a pint of Strawberries, sprinkle a teacupful of powdered sugar over them, bruise them well with a wooden spoon, and rub them through a fine hair-sieve till all the juice has been taken from them. Dissolve 1½ oz. of isinglass or gelatine in three-quarters of a pint of new milk, add a pint of thick cream and the Strawberry juice, and simmer all gently together over the fire for five minutes. Pour the cream into a damp mould or into glasses, and set it in a cool place till stiff. A few drops of prepared cochineal may be added to improve the colour. If liked, the juice may be drawn from the fruit over the fire or in the oven. When fresh fruit cannot be obtained, half a pint of Strawberry jam dissolved in two tablespoonfuls of water and strained may be used instead. Time, five minutes to simmer the cream.

Strawberry Cream Ice (à la Muscovite).—Pick the Strawberries, bruise them with a wooden spoon, and rub them through a fine hair-sieve. Take one pint of the juice thus obtained, and stir into it until dissolved five ounces of powdered sugar. Dissolve half an ounce of gelatine in very little water, and add this to the juice. Let the basin containing the juice stand upon rough ice, and stir its contents without stopping until they begin to set. Whip a pint of cream, and mix it lightly with the iced Strawberry juice. Put the whole into a hermetically-closing ice-mould. Put a little butter round the opening to keep out the water, and place it in the ice-pail with pounded ice and bay-salt round it at least 3 in. thick. Let it remain until it is thoroughly frozen. When it is to be served, plunge the mould for one instant into a basin of hot water, turn it upside down upon a glass dish, when the ice will in all probability come out in a shape. If, however, it will not come out, dip it quickly into hot water. Time to freeze, about two hours.

Strawberry Jam.—Gather the fruit after two or three days of dry weather when it is fully ripe, but not over-ripe, or it will be flavourless, and may be tainted with bitterness and the elements of decay. Pick the berries, and discard all that are at all unsound. Weigh the Strawberries, and take three quarters of a pound of loaf sugar for each pound of fruit. Put a layer of berries into the preserving pan, then a layer of sugar, and repeat until the pan is a little less than three parts full. Set it at the side of, but not upon, the fire, and keep stirring gently to prevent burning; but be careful not to crush the fruit. Very carefully remove the scum as it rises, and let the jam boil gently until a little put upon a plate will set, or be stiff. Take the pan from the fire, let its contents cool for a few minutes, then pour the jam into jars. Cover in the usual way. The flavou of Strawberry jam depends a great deal upon

the season. When the summer is cold, wet, and sunless, it is difficult to make jam with the real perfume of the fruit, although it may be made to keep by long boiling and an extra allowance of sugar. Time to boil, three quarters of an hour or more. Probable cost, Strawberries, 4d. to 8d. per pound. The fruit can generally be bought cheaper by the peck.

Strawberry Jam, Superior.—Strawberry jam, although very delicious, is, if anything, *too* luscious. If made according to the following recipe, this fault will be corrected. Take the juice of three pints of ripe white or even Red Currants. Put this into a preserving-pan and throw in four pounds of freshly-gathered ripe Strawberries which have been picked and carefully looked over. Let the fruit boil, remove the scum, and add four pounds of refined loaf sugar. Boil the jam quickly until done enough. Put it into jars, and cover these in the usual manner. Time to boil the jam, from thirty to forty minutes.

Strawberry Jelly.—Take quite fresh fruit which has been gathered in dry weather. Pick the stalks from it, put it into a preserving pan (an enamelled one is the best for the purpose), and place it by the side of a clear fire that the juice may be gently drawn from it. As soon as this flows freely, simmer it until the berries appear to collapse, but on no account allow the juice to remain on the fire till it thickens. Pour the fruit upon a well-scalded but dry sieve, and let the juice drain thoroughly from it: strain it through three or four thicknesses of muslin, and weigh it. Boil quickly for twenty minutes, and stir frequently. Take the pan from the fire, and then add very gradually fourteen ounces of coarsely-pounded loaf sugar for each pound of fruit. Let one portion be dissolved before another is added. When all the sugar is dissolved, put the pan again on the fire, and boil the jelly until a little put upon a plate will stiffen. Pour the jelly into small jars, cover these in the usual way, and store in a cool, dry place. Time to boil the jelly with the sugar, a quarter of an hour or more, according to the quality of the fruit. Probable cost, Strawberries, from 4d. to 8d. per pound; less if bought by the peck.

Strawberry Salad.—Take equal portions of Strawberries and Red and White Currants. Pick them, place them in layers, and pile them on a dish. Sprinkle powdered sugar over them, and pour thick cream upon them. The cream and sugar should not be poured on the fruit till the last moment. If liked, other fruits, such as Gooseberries, Cherries, Raspberries, &c., may introduced into the salad.

Strawberry Solid.—Dissolve three quarters of an ounce of isinglass by boiling it in a quarter of a pint of water. Make a pint of cream very hot, and dissolve in it one pound of Strawberry jelly. Add this to the isinglass, and beat the ingredients till they are thoroughly blended and almost cool. Add a spoonful of powdered sugar if necessary. Pour the solid into a damp earthenware mould, as metal would spoil its colour, and when it is stiff it will be ready for use. If Strawberry jelly is not at hand, jam may be used instead, but it will need to be rubbed through a fine sieve to keep out the seeds. Sufficient for six or eight persons. Time, about an hour to prepare.

Strawberry Vinegar.—This vinegar is excellent for flavouring sweet sauces, also a spoonful or two put into a tumblerful of cold water forms a refreshing summer drink. Gather the fruit in dry weather, when it is fully ripe and finely flavoured. Let it be quite fresh. Pick and weigh it, and put it into stone jars or wide-mouthed glass bottles, and over each pound pour a quart of best white wine vinegar. Cover the jars closely, and let the Strawberries infuse in the vinegar for three days. Drain it off, and put it upon fresh fruit. Let this stand three days, and repeat the operation a third time. Drain off the liquor closely, and let it run through a canvas bag dipped in vinegar. Measure it, and stir into it until almost dissolved a pound of sugar broken up small for each pint of vinegar. Put it over a clear fire in an enamelled (not a metal) saucepan, and let it boil gently for five minutes. Pour it out, let it stand twelve minutes, skim it thoroughly, and bottle for use. Time, ten days. Probable cost, 1s. 6d. per pint.

Strawberry Water (a refreshing summer drink).—Take half a pound of finely-flavoured Strawberries, bruise them well in a basin with a wooden spoon, and mix with them four tablespoonfuls of finely-powdered sugar and a quarter of a pint of cold water. Rub them through a fine sieve, and filter what passes through the sieve till it is clear and bright. Wash the dregs in the sieve with a little cold water to prevent waste. Add the strained juice of half a Lemon and a pint of cold water to the liquor, and put it in ice or in a cool place till wanted. Time, about an hour to prepare. Sufficient for about a quart of water.

Strawberry Wine.—A simple method of making Strawberry wine is to add a little Strawberry juice to good flavourless Currant wine. To make it from fresh fruit, bruise three gallons of Strawberries, and pour upon them three gallons of water. Let them infuse twenty-four hours. Strain the liquor through a canvas bag, and add eight pounds of lump sugar, two gallons of cider, one ounce of powdered red tartar, and the thin rind of a fresh Lemon. When putting the wine into the cask a little brandy may be added if liked.

POULTRY.

The Hydro-Incubator.—We have received from Messrs. Christy and Co., 155, Fenchurch Street, a one hundred page book entitled "Hydro-Incubation in Theory and Practice," by Thomas Christy, F.L.S. The book explains all that is known respecting the artificial hatching of chickens, and is compiled by a man who has had much experience on the subject. Every page is full of interest to the poultry farmer, and illustrations and diagrams are introduced where necessary.

Cramp in Chickens.—I always find a cure for this in placing the chicks in new hay put in a box at night, covering the box over with netting or strips of wood, and letting them have dry ashes to run on in the day time.—A. M. T.

Brahmas and Cochins.—I had an expensive sitting of Brahma eggs. Some of the chickens turn out the colour of Cochins. Is this a variety of Brahma or a "take in?" and what is the reason of variation in colour of Brahma eggs? mine are sometimes lighter coloured than usual.—BRAHMA.

Eggs Without Shells.—What is the reason of my fowls laying shell-less eggs? They have plenty of oyster-shells and bones broken up fine.—V. P. B.

Artificial Hatching.—Is it possible to hatch fowls' eggs in a Vinery with a mean temperature of 70°?—NORMANTON. [We should say decidedly not.]

Brahma Fowls.—There are two varieties of the Brahma, the light being white except the hackle and tail feathers, and the dark of dark grey colour.

BEES.

Losing Bees.—Although feeling all-becoming sympathy with your correspondent "Novice" at the loss of a beautiful stock of bees, I could but smile, when, after treating or rather using his bees (by mistake) most cruelly, he pathetically asks: Is this a fair sample of the humane system? I answer most assuredly not. But, first, I cannot conceive upon what pretence he could be stupifying or smothering a stock of bees just on the point of swarming. If "Novice" would derive both pleasure and profit from bees I would advise him, first, to use none but bar frame hives, for I rather expect his stock that he treated so badly was in a straw skep. The box hives are very easily made, particularly if one of the cheap ones are bought as a pattern. There are many variations of the same principle of Woodbury hives, none better, I think, than Abbott's Combination Hive; with such hives the combs may be taken out and examined, honey extracted, a surplus queen brood taken out, for a queenless hive, or any other manipulation required. Next, in order to understand the proper management, I would recommend him to send to Messrs. Abbott, Southall, Middlesex, for a set of their leaflets on bee management, ten or twelve in number. If he gets them, and follows their directions, I think he would escape other disasters with his bees. By the way, his letter is not a bad sequel to the one preceding it by "A.D.," whose advice must lead to the same results (I mean with respect to the fume of the fungus), but "A. D.'s" advice goes farther. As if doubly to ensure similar disasters, he recommends closing the hive when all the bees are inside, and when they are wanted to be got out of the way, and thereby causing the utmost excitement and confusion amongst them; and then alarms them to the utmost by the smoke, causing them to cluster between the combs and thrust themselves into the comb cells, making it almost impossible to throw them out on to a sheet; this "Novice" found to his cost to be the case. But to get the bees out of a skep by this or any other means is, if not impossible, yet very improbable and deceptive if intended to settle the question if there is a queen or not. I can hardly think that "A. D." has ever performed such an operation successfully.—THOMAS LETCHFORD.

Gravel for Aquariums.—Fine gravel and silver sand will do very well for the bottom; put the plants into it. The top will do left open.—W. C. J.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, per doz.	0 4	0 6
Arum Lilies, ,,	4 0	6 0
Bouvardia, ,,	1 0	3 0
Carnations, doz. bunches	6 0	9 0
Carnations (Tree), per doz. blooms	1 0	3 0
Cornflower, doz. bun.	3 0	6 0
Eschscholtzia, ,,	2 0	6 0
Eucharis, doz. blooms	4 0	6 0
Ferns (various), doz. bun.	4 0	9 0
Fuchsia, ,,	4 0	6 0
Gardenia, doz. blooms	3 0	9 0
Heliotrope, doz. bun.	0 0	6 0
Iris, ,,	9 0	12 0
Mignonette, ,,	2 0	6 0
Myrtle, ,,	0 0	6 0
Pelargoniums (zonal), doz. bun.	3 0	6 0
Pelargoniums (large flower), ,,	6 0	12 0
Pelargoniums (double), ,,	6 0	12 0
Pelargoniums (Rose-scented leaf), doz. bun.	3 0	6 0
Pinks, doz. bun.	4 3	9 0
Roses, ,,	4 0	9 0
Stephanotis, doz. trusses	3 0	6 0
Sweet Peas, doz. bun.	3 0	6 0
Sweet Sultan, ,,	4 0	6 0
Tropæolums, ,,	1 0	3 0
White Lilies, ,,	18 0	30 0

Plants in Pots.

Arbor vitæ (golden), doz.	9 0	18 0
Arbor-vitæ (common), ,,	6 0	12 0
Arum Lilies, ,,	9 0	12 0
Adiantum cuneatum (Maiden-hair), pair	5 0	7 0
Adiantum cuneatum (ordinary), doz.	6 0	18 0
Begonias (flowering), ,,	6 0	12 0
Begonias (fine-foliaged), ,,	12 0	18 0
Bouvardias, doz.	12 0	42 0
Crotons, ,,	12 0	30 0
Dracæna (green), doz.	18 0	60 0
Dracæna (variegated), doz.	6 0	12 0
Euonymus, ,,	8 0	18 0
Euonymus (variegated) ,,	6 0	18 0
Ferns, doz.	3 0	5 0
Ferns (small), per box	18 0	60 0
Ficus elastica, doz.	6 0	12 0
Fuchsias, ,,	18 0	36 0
Gardenias, ,,	4 0	6 0
Mignonette, ,,	3 0	6 0
Nasturtiums, ,,	15 0	42 0
Palms (large), pair	18 0	60 0
Palms (small), doz.	9 0	24 0
Pelargoniums (fancy), doz.	2 6	9 0
Pelargoniums (scarlet), ,,	6 0	12 0
Pelargoniums (double). ,,	3 0	4
Selaginella denticulata, ,,		

Fruit.

Apples, per bush. and bar.	9 0	30 0
Cobs and Filberts, 100 lb.	0 0	120 0
Currants, half-sieve	2 6	3 0
Gooseberries, ,,	2 6	3 0
Grapes (English), lb.	1 6	5 0
Lemons, box	30 0	35 0
Oranges, 100	8 0	16 0
Pine-apples (St. Michael's), each	5 0	15 0
Pine-apples (English), lb.	3 0	5 0
Strawberries	0 6	2 0

Vegetables.

Beans (French), per lb.	0 6	0 9
Cabbages, per tally	2 0	3 0
Carrots, doz. bun.	4 0	5 0
Carrots (new), bun.	0 4	0 6
Cauliflowers (each),	0 0	6 6
Celery, bun.	1 0	2 0
Corn Salad, half-sieve	0 0	2 0
Cucumbers, doz.	2 6	6 0
Endive, ,,	2 0	3 0
Garlic, lb.	0 0	0 6
Horseradish, bundle	3 0	6 0
Lettuce, score	0 4	0 10
Leeks, doz. bun.	1 6	3 0
Mint, ,,	4 0	6 0
Mustard or small Salad, doz. punnets	0 0	2 0
Mushrooms, pottle	1 3	1 9
Potatoes, per lb.	0 1	0 2
Parsley, doz. bun.	4 0	6 0
Radish, ,,	1 6	3 0
Spinach, bushel	0 0	2 0
Shallot, lb.		0 6
Turnips, doz. bun.	4	5 0
Watercresses, doz. bun.	0 9	1 0

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD

GARDEN BRIDGES.

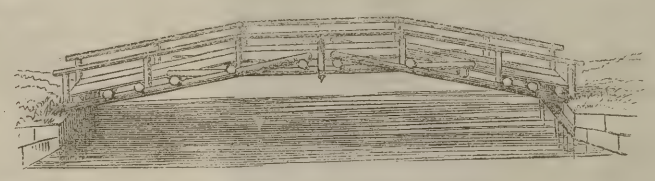
A BRIDGE in the garden is sometimes necessary, especially in connection with ornamental water. Perhaps the best position for a bridge would be at some narrow part of the lake, as remote as convenient, so as to show the principal body of water between the bridge and the place from whence it is viewed, and that, whilst crossing the bridge, the boundary of the water should be completely lost to the eye in various parts, as well by its position as by judicious planting. Thus the extent of a moderate sheet of water might be concealed even from the stroller crossing the bridge. We have frequently seen a bridge placed across the neck of a lake so near to its extremity, as to suggest to the spectator whether it could have been formed for any utility at all, thus destroying the interest which might have been created had its utility been more apparent. Of whatever a bridge may be composed, whether of wood, iron, or stone, or whatever extent it may be, it should be generally horizontal or level across. The effect is inharmonius when it falls each way from the centre. The kind of bridge most suitable for a walk interrupted by a rivulet or brook in a wood or other rural or uncultivated scenery is one simply formed of rude woodwork. When a walk can be carried across a rivulet in front of a cascade or fall, about 10 or 20 yards distant from it, a bridge will add interest to the scenery, and afford convenience to the spectator in viewing the fall. A bridge crossing a rill in a flower garden or other dressed parts of the pleasure grounds may be of iron; but one constructed of Larch rods and poles stripped of their bark, and stained—not painted—though less characteristic, would be generally pleasing. Wood bridges should be made of peeled poles and rods, stained Oak colour, or something similar. Iron bridges should be painted (perhaps bronzed) green or iron colour; never light green. The ends of all bridges must be finished off with trees or bushes. Those upon a large scale should have noble round-headed trees for their decorations, such as the Wych and English Elm, Weeping Willow, Lime, Oak, and Alder; but the best of all is the Wych Elm. All should be more or less associated with loose growing bushes. For smaller bridges in kept grounds the Hemlock Spruce, deciduous Cypress, Tamarisk, Robinia microphylla, Sea Buckthorn, Rosemary-leaved Willow, English Juniper, &c. For small bridges in wild scenery:—Alders, Willows, Thorns, Hollies, Honeysuckles, rambling Roses, Brooms, and Whins are suitable. The annexed illustration, from Mr. Smee's book "My Garden," shows a rustic bridge partly hidden in healthy vegetation springing from the water below, which is far better than having a mere wooden bridge polished and varnished with nothing to relieve its ugliness, as we too often see in gardens. The illustration on next page shows a rustic bridge made without nails. It was exhibited at the International Horticultural Exhibition, St. Petersburg, in 1869. In addition to its rustic and picturesque appearance, it possesses the singularity of being put together without a single nail, bolt or mortice, the whole structure being supported by the beams being made to cross each other in a peculiar manner. It is needless to explain this arrangement, as a glance at the accompanying illustration will be sufficient to show how it is effected. When composed of rustic woodwork bridges might be made less incongruous than they generally are by being covered with climbers. Ivy, for example, would, if well planted in good soil at the foot of the bridge, soon cover the woodwork, and, if kept properly clipped or pruned, form a pleasing feature. The Virginian Creeper, too, might be used with advantage; although its being bare in winter might be a drawback, yet this would be amply compensated for in summer and autumn by its wealth of green and gold-tinted foliage. Honeysuckles, Jessamines, scrambling Roses

RUSTIC BRIDGE IN GARDEN LANDSCAPE.

Some of the Roses, too, are available for such purposes, and by their use rustic bridges, as well as being a necessity, become really an ornament to the garden.

VEGETABLES.

Successful Potato Growing.—Although much has been written on this subject, I venture to send a few remarks which doubtless will interest some of your readers. I must certainly (as one who has had many years' practical experience) dissent from all schemes which assume such voluminous proportions for this one reason, that to grow the Potato well the conditions are such that no professional knowledge is required beyond simple observance of two or three points. First, let the soil be turned up late in autumn, and receive the valuable help afforded by the winter frosts. Second, let this be followed by laying on a good supply of well-rotted manure at the rate of two loads to each pole of ground, say the first week in March. After the manure has been thoroughly incorporated with the soil, proceed to plant the first week in April, and in doing so let every tuber, if practicable, have a healthy sprout of 1 in. Each tuber should weigh about 2 oz. Third, the best sorts for general cultivation are Early Ashleaf, Early Rose, Scotch Champion, and Magnum Bonum. In no case resort to division of tubers, as they are infinitely better for every purpose planted whole. Fourth, when planting, to every 20 poles of ground use 1 cwt. of Potato manure, scattering in the ridges, or laying below and above the Potatoes if a dibber is used. Nothing remains to be done but to await hoeing, and finally lifting the crop. Now this plan is not dubious in its results. I planted April 4 Early Rose and



Garden Bridge built without nails.

Ashleaf, and of the former have already lifted 2 bushels per pole of land, some tubers weighing from 7 oz. to 12 oz.; date of lifting, July 2. The ravages of disease may easily be avoided by the selection of such varieties as come off very early, and the planting of disease-proof main crop kinds such as Magnum Bonum, and particularly Scotch Champion. Considering the importance of the subject, I shall probably again refer to it in the matter of "Choice of Seed Potatoes."—Scrutator.

Potatoes Showing Signs of Disease.—The Potato blight is setting in very fast. I shall adopt the plan I tried last year. As soon as they are touched with the blight cut the tops off and rake them away. I did not have 1 gallon of bad Potatoes out of 40 bushels of American Whites; this year mine are the Snowflake; they are spotted with blight now, and I am cutting away all the tops.—Edward Stone.

Growing Mushrooms.—Any one having the command of a cellar or outhouse may grow Mushrooms to perfection. Get a box about 1 ft. deep, and half fill it with well-rotted manure, completing it with some good compost. Put the spawn about ½ in. deep, well covering with any litter that may be conveniently handy. The Mushrooms will be up in about five or six weeks, and will continue prolific until Christmas.—J. C.

Early Cabbage.—For stiff, loamy soils I have found no Cabbage to equal Excelsior. I sowed the seed the last week in July, and planted out the most forward plants in September, the smaller ones being pricked out for succession in spring. The September plants were a grand crop, and ready for cutting the first week in April, and by cross-cutting the stems there are now from four to six compact heads on each. The flavour is simply delicious, and equal to the most tender Brussels Sprouts. I should mention that the ground was manured with thoroughly decomposed seaweed, which I find most effective with all crops on stiff soils.—W. W., *County Antrim*.

Late Gathering of Rhubarb.—Rhubarb should only be gathered sparingly after this date. I have known plantations seriously injured by clearing off the late crop for wine making. A moment's consideration will assuredly convince any one that a certain amount of foliage is necessary for the healthy development of the buds or eyes for next year's supply.—H.

Sowing Winter Onions.—The first or second week in August is the best period for sowing Winter Onions. A well-drained, well-cultivated plot should be selected, but if in good heart it need not be freshly manured. In addition to the Tripoli varieties, sow a good breadth of Spanish, Globe, and James' Keeping for transplanting early in spring. This is the only plan in difficult situations and seasons to ensure a good crop of large bulbs. South of London the sowing of the three latter kinds I have named may be delayed till towards the end of the month. The Silver-skinned is a good kind also for autumn sowing, as it turns in quickly in spring.—E.

Sowing Winter Spinach.—It is well to make two or three sowings of Winter Spinach at intervals of ten days or so, commencing at the present time. Where the soil is of a heavy retentive character, at least one of the sowings should be made on the driest and warmest spot available, as it not unfrequently happens during a wet or cold winter (unless some such precaution be taken) that a great number of the plants will perish. Ground that has not been deeply dug just previous to sowing is usually less retentive of moisture, and consequently warmer in winter than if freshly and deeply stirred. I am speaking of heavy land only.—E.

Autumn-sown Onions.—In Suffolk these have almost superseded the spring-sown crop, which during the past few years has suffered dreadfully from the ravages of the Onion fly, whilst the autumn-sown crops have escaped with little or no injury from that pest. The ordinary routine of culture is to sow the seed during the month of August, according to locality and situation, usually in beds 5 ft. or 6 ft. wide, and in drills 10 in. or 12 in. apart. If the soil be dry, the seed-bed must be kept moist by watering until the young plants are up, when the only attention required is keeping the surface clean by frequent hoeings until March, when beds of deeply-cultivated and well-enriched soil must be prepared for the reception of the seedlings. We usually spread a good dressing of soot or wood ashes on the surface of the ground, working it in with a rake, and finely breaking the soil; the beds are then marked off and the plants inserted in rows 1 ft. apart, varying the distance in the row according to the size which the variety usually attains. The Giant Rocca and similar sorts may be 1 ft. apart each way, as they grow to a large size. As regards culture, the principal points are frequent surface stirrings and dressings with any rich material, such as fowls' or pigeons' manure, guano, or wood ashes. Any that show signs of running to seed or becoming thick-necked are pulled up for use, and the bulk of the bulbs will be fit for harvesting about the first week in August, for if left in the ground too long, they are liable to start rooting and growing afresh, whereby the keeping qualities of the crop are considerably diminished.—G.

Autumn *v.* Spring Planting of Potatoes.—I think "G. B.'s (Shropshire)" remarks on the autumn planting of Potatoes in Gardening of July 17 liable to cause disappointment to amateurs. From my experience nothing is gained by the practice; even when they prove a good crop (which is an exception) they will not produce more than spring planted (or prove earlier) if spring planting is carefully carried out. In the autumn I thoroughly ripen my Potatoes (greening them), always selecting medium-sized tubers. In February I get a number of shallow boxes about 4 in. to 5 in. in depth; dry soap boxes from grocers will answer the purpose. I then nail a strip in each inside corner of the boxes to stand about 6 in. or 8 in. above the sides of the boxes, so that they can be packed one above the other, and so save space. I then fill them with the Kidneys, carefully placed end upwards, and scatter fine good soil amongst them, leaving each Potato a little room to form roots, and about the middle or end of February I place them in the greenhouse under the stages or anywhere possible. The fire-heat soon starts them into growth, and when about 2 in. high I remove the boxes to a cool place with plenty of light and free from frost, where they get a strong green colour and make plenty of roots, and fit for planting out at any time. Here in Lancashire the second week in March is quite soon enough. I choose a warm south border, give abundance of manure, and plant about 5 in. to 6 in. deep, being careful to do as little damage to the sprits or roots as possible, cutting them out of the boxes in squares, leaving the earth attached, and I get fine crops of good large Potatoes before the end of June, quite as early as the autumn-planted Potatoes, and a better crop, and one that can be depended upon without the risk to be run with autumn planted.—Walter B., *Lancashire*.

BONES FOR THE GARDEN.

In Gardening Illustrated of July 24, Mr. John Hughes asks "how it is that special chemical manures are not more largely employed in our gardens." As the owner of a town garden I reply that it is entirely owing to the exorbitant prices demanded for them. Matters are not quite so bad as they were a few years back, when 1s. tins were generally charged at a rate equal to about £100 sterling per ton for constituents of actual manurial value; still, matters are bad enough for the town gardener even now when he is asked to pay at the rate of about £56 per ton for a special manure if he buy ½ cwt., but even in this case if he require merely one pound then at the rate of £112 per ton, or 1s. per pound. What is needed by town gardeners is a good general manure fit for plant food immediately at a reasonable price.

A town garden has a very short season, ranging from May until October, and, as a rule, manures are needed which will give their full value in that time. Residual values are of little interest to the general run of owners of town gardens who garden for amusement, and who like to reap some reward in a moderate time. Again, they cannot weary themselves with separate manures for separate plants or crops, and it is imperative for them to have a general plant food with the nitrogen combined in a scientific manner. Tins are cheap enough, unskilled labour is not exorbitantly dear, neither are the constituents (magnesia, potash, and phosphate of lime), and the requisite nitrogen can be obtained at a reasonable, although of course a higher, rate; it is therefore a subject of wonder as well as of disappointment to the town gardener that he cannot obtain small quantities of plant food at a reasonable commercial rate.

If Mr. John Hughes can guide them to obtain their needs at a fair market price, he will confer a benefit on all owners of town gardens.

Colvile Browne.

Plant Protectors.—A most useful and inexpensive shade in summer, or protector in winter, I make as follows:—At the grocer's I procure for firewood empty sugar casks, at 3d. each, which prove most useful for several years before breaking up. I first split the tops on firmly to every chine, then saw them all through down one side. At one of the joints, and at the joint exactly opposite, I serve them the same, making two half casks. To prevent their springing open, I stretch a wire across at each

end, making holes with a bradawl for the wire, and just bending the ends to secure it. For a handle I make two holes with the awl about 6 in. apart on the top of the arch, and put a bit of wire through and bend the ends on the under side. They proved most useful last winter; each night and many of the severest days I kept Parsley and other things covered. They are also very useful in shading seedlings after pricking out from the seed bed. I use them cut through the other way for putting over Rhubarb, making the top and bottom serve as lids.—H. S.

ROSES.

Striking Rose Cuttings.—When the buds in the axils of the leaves are fine and plump cut off the shoots you want; take off the leaves and put the shoot into the ground, so that the lowest bud (which should be a nice plump one) is covered with the soil. June and July are the best months, as the buds are then at their best. At the end of some ten days if, as an experiment, you pull up a shoot you will find that the underground stem is swollen, forming a callus, and from this in a few days the roots would have shot out if the cutting had been left in the ground. In from a fortnight to three weeks after first planting the roots are well formed. Marie Baumann, Lamarque, Gloire de Dijon, &c., I have struck in this way by the dozen. Honeysuckles, Fuchsias, Myrtles, Pinks, Virginian Creeper, anything, in fact, that I want cuttings of I rear thus; whenever I pull one cutting out I push another into its place. All, with the exception of the Roses, thrive perfectly well merely transplanted into the open garden or put in plant pots for the sitting-room windows. But the Roses are a very different matter. Some few live and thrive, but only some few, and I shall be very glad to be told how to manage these Rose cuttings through the winter and following spring; the spring appears to be the most critical time.—Mark.

Budding Roses.—Those who have Briers or Stocks should "work" them before the bark gets set. Before operating give the Stocks a good soaking with water, which will cause the sap to flow more freely than it otherwise would do, and use cotton for tying, so as to protect the bud from getting dried up too soon. Roses that have been budded should be well attended to with water, and an occasional sprinkle with the syringe overhead will be of benefit to them.

Watering and Mulching Roses.—These will require plenty of water, and where well mulched the second display of flower will be well advanced by this time, and in some places a good supply of blooms for cutting will be kept up till frost clears all off. Early-started buds should be secured, so as to keep them from getting damaged by high winds and rains. Keep down mildew by means of sulphur, as mildew retards growth very much, and young fresh buds suffer greatly from it. If sulphur be used, it will be required to be syringed off as soon as the mildew is stopped. Tea Rose Duchess of Edinburgh is a valuable addition to our collections; it is a free grower and a wonderfully free-flowering variety. In habit it is similar to Souvenir d'un Ami, growing and flowering quite as freely, and its dark colour will make it much more valuable than that kind for winter forcing. I have forced it and have found it to be most useful for that purpose.—H. G.

Climbing Roses.—When climbing Roses are planted as solitary objects on a lawn they, of course, want something to support them at first; and for this purpose nothing is better or more convenient than four or five thin flat iron rods bent over each other at right angles, with their ends in the ground, so as to form a circular mound about 4 ft. high and 6 ft. through. The Rose tree is planted under the hoops, in the centre of the circle, and as it grows a limb is trained each way to form the foundation of the future plant, and after the first or second year it is left entirely to itself. The supports are soon covered, and a large and natural-looking mound of Roses is the result. We have seen specimens of this kind twenty years old in which the wood had accumulated about 2 ft. or more deep all over the trellis, and yet nowhere was there any dead wood to be seen, owing to the plants throwing out fresh limbs annually, which covered the old ones. The plants, in fact, grow exactly in the same manner as the wild Brier, which, as everybody knows, keeps sending up long shoots from the centre of the plant, increasing its size every year. Those who desire very large mounds may have them just as easily as small ones, and in about as little time, by increasing the size of the iron framework and planting the Roses—as many as they choose—round the sides. This would leave the space inside vacant, and, by keeping the internal surface clipped with a pair of shears, they would have a veritable bower of Roses. This is one way of utilising climbing Roses, and it is a plan by which they can be got to show themselves off to advantage, which they cannot do so well on rockeries and fences, &c., where they are usually trimmed annually to keep them within bounds, and the trimming impairs their appearance. Except against walls and in similar situations, there is no occasion to prune climbing Roses. Left to themselves, they make by far the grandest display; and to insure this, it is only necessary to provide them with a good, deep, strong soil at the beginning, and to let them have a fair amount of light on all sides. Whether planting be carried out with the object above described, or for the purpose of covering naked tree stumps or limbs, or for draping any unsightly object whatever, liberal treatment in the first instance is the main thing. A good soil makes all the difference in time and in the permanent vigour of the tree; and were we desirous of having a great Rose tree (whether it be a common Ayrshire or a Gloire de Dijon, that we expected to produce thousands of blooms in a few years), we should, if the soil were not naturally strong and deep, provide a well-drained pit and fill it with two or three good cartloads of sound loam and manure; thus treated, the result is certain, provided an unrestricted growth be permitted.

House and Window Gardening.

WINDOW GARDENING.

Seeing so much on the above subject, I am glad to give my experience in the management of my window garden, which is admired by all who see it. I have one advantage, viz., I get the sun on my window from eight o'clock in the morning until three in the afternoon. I have four shelves, the bottom one nearest the window (but no fire in the room), and the others stand a little farther away from the window. I have a large frame in the back yard, which gets the sun from eleven o'clock in the morning and remainder of the day. I use no means to heat it, and I have very successfully grown Fuchsias, Pelargoniums, Petunias, Heliotropes, Lilium auratum, Phlox Drummondi, Balsams, Stocks, Asters, Lily of the Valley, Hyacinths, Crocuses, Snowdrops, Tulips, and Wallflowers all as pot plants, and they have given me great satisfaction, as they grow so nice and bushy in the frame, and I do not let them stay in the window long together, or they would soon draw all to the front, and I believe that is the reason one does not see so much window gardening as might be done. Any one could make a turf frame, or even a wooden one would do; an old window would do for the light, allowing it a good fall for the rain to get off, and carefully cutting about 2 in. of the cross ribs off close to the glass at each corner, giving plenty of air on fine days, and well watering and shutting the frame close about five o'clock. In dull weather I only give water to the plants when really necessary. I hope this little information will be of service to some reader. I take a great interest in window gardening, and would like others to give their experience and also the names of plants that can be grown without heat.

John Thompson.

Bolton.

FORGET-ME-NOTS AS WINDOW PLANTS.

Everyone is fond of the Forget-me-not in all its forms, and yet how seldom does one meet with it in small gardens! Many who think Forget-me-nots beautiful in a wild or semi-wild state imagine that they cannot be kept alive in gardens, especially in the neighbourhood of towns; true, they often fail, but the fault lies with the cultivator. People take the common Forget-me-not out of a ditch or a swamp and set it in or on a bed or border of dry earth, and of course it withers up. Other varieties of the Forget-me-nots are also often planted in most ungenial places, as, for instance, right in the eye of the sun, and in soils only fit for making bricks. The roots fail to get a good hold or suitable food, and their tops soon get burnt up. All these causes of failure are easily avoided by growing Forget-me-nots in pots, and by thus rendering them portable a choice or a change of site and of soil may be commanded at any time.

All the Forget-me-nots do well in pots, and some of the prettiest plants for windows may be found in the common Forget-me-not of our ditches. As a bracket plant, or suspended in small vases or bottles of water, too, it is alike interesting and beautiful. All that is needed to get a fine mass of it is to take off a few cuttings, root them in damp soil or in water, and fill a vase, pot, or hanging basket with the young plants as they show flower. A glass basket makes a charming receptacle for the Forget-me-not; it will almost fill it with roots, and profusely cover it with flowering shoots and branchlets. If grown in pots or vases in soil, a mixture of equal parts leaf-mould and loam, or any rough vegetable matter kept sufficiently moist, will answer. As soon as the plants show signs of fading fresh cuttings should be made and started afresh; or the plants may merely be pulled to pieces, the old, exhausted roots thrown away, and the branches already covered with roots formed into new plants by inserting any number of these cuttings, from six to a dozen or a score, into a fresh pot, vase, or basket.

A shady situation, such as a north window, is the best situation for this Forget-me-not during the warm summer months, though earlier and later in the season it will thrive well in a southern or western window. One of the prettiest masses ever seen was suspended from the centre of an east window in a Hyacinth glass, which it filled to overflowing with beauty. I have been thus particular about the culture of the common Forget-me-not, because it is within reach of all, and, being half-aquatic, needs special treatment in regard to water. It must not, however, be thought that water is essential to success in its cultivation; it grows well in damp soil in a shady situation, and is an admirable plant to associate with Musk for clothing and sweetening outlying damp nooks and corners.

It must not be assumed that the other Forget-me-nots are also semi-aquatic. Such fine Forget-me-nots as Myosotis Impératrice Elizabeth, M. azorica cœlestina, M. semperflorens, M. sylvatica, M. alpestris nana cœrulea, M. a. nana alba, and last, but not least, M. dissitiflora, thrive best in soil, and succeed under treatment similar to that given to other plants. For pot culture, M. dissitiflora is perhaps the best of all the Forget-me-nots. The colour, when the blossoms are fully expanded, is a most exquisite blue, and the plant is good in habit. It grows to a height of about 6 in., and spreads out freely, soon furnishing a 4-in. or 6-in. pot. The flowers open in succession from the base of the stem upwards, something like those of the Lily of the Valley; it therefore remains long in bloom. M. azorica cœlestina, an improved variety of a well-known rich dark blue Forget-me-not, is also a plant of great beauty. M. semperflorens is a hardy variety that continues flowering with little trouble from spring to autumn. The white and blue dwarf Forget-me-nots (M. alpestris nana) only grow about 4 in. in. height, and are little gems for pot culture. These might be kept in small pots or even in saucers, as they require but little soil.

The whole of the Forget-me-nots are easily raised from seed or increased by cuttings, but seeds are the only practical mode of acquiring a stock of most of them. They may be sown as soon as they are ripe in spring or summer, or kept till next spring and sown in March or April. If sown at once, the plants will flower the next summer; and, of course, if not sown till next spring, they will not flower till late in the autumn or winter. They may be sown in the open air or in pans or pots, and, being remarkably small, they can hardly be covered too lightly. They should also be sown rather thinly, for if sown too thickly the plants are apt to damp off as soon as they are out of the ground. As soon as the young plants are large enough to handle, they should be pricked off or

potted singly in the smallest thumb pot. If placed under a handlight or cold frame for a time they will make rapid progress, and speedily form useful little plants. Shift as they require it into 2-in. and then into 3-in. pots, in which some of the smaller varieties, such as Myosotis alpestris and M. nana cœrulea, may be flowered, and almost any of the Forget-me-nots grow into excellent window or room plants in 4-in. or 6-in. pots.

The best place in which to grow all these Forget-me-nots, when once they are established, and until they reach the flowering stage, is a partially-shaded, sheltered situation out-of-doors. They grow well in a mixture of rotten leaf-mould with about a fourth part of sand. The drainage should be ample, as most of these Forget-me-nots are semi-alpine plants, and cannot endure stagnant water at the roots, though during both the growing and flowering periods they must not be allowed to become dry. They must not be treated to water so freely as the Myosotis palustris, or they will become unhealthy, and ultimately die. With M. dissitiflora, any garden and house might be enriched with Forget-me-nots the whole year round. Sow a few seeds in July, again in March and May, and a succession of flowering plants would be always available; or, perhaps better still, put in a few cuttings, either in pits or in the open air, from four to half-a-dozen times a year, and this Forget-me-not would be always in flower in the window, greenhouse, or open air.

No plant pays better for a little extra shelter and cultivation than this lovely Forget-me-not. Plants of it potted from the open ground in October or November, and placed in moderate heat —a temperature of 50° or 55°—would be in flower at Christmas. It may easily be had in bloom by little stimulants of this kind indoors till March, at which season it bursts into full beauty in the open air. Its continuance in beauty throughout the summer depends on two things — good feeding and frequent renewal of plants by cuttings or from seeds. By the first only the old plants can be induced to bloom throughout the summer; but, as a rule, younger plants flower more freely. T. F.

Standard Fuchsia with supports covered with German Ivy.

Climbers on Supports.—The Germans have a way of using trailing plants of various kinds which, though not always happily illustrated, is still desirable in some cases. Wherever supports are used for any purpose in the garden, or wire ropes or props, these are wreathed with quick-growing summer climbers, such as the German Ivy, Lophospermum, or Tropæolum canariense. Even the common wild Bryony of our hedges is used gracefully in this fashion to run up strings, or trained round the pedestal of a vase, and so on. In this standard Fuchsia, for example, it was desirable to support the head from all danger from wind; and up the supports accordingly the German Ivy is trained.

Staking Dahlias.—These should always be well secured with stakes to prevent them being blown about and broken by the wind; in giving them this support do not tie them up in the shape of a broom by drawing all the shoots tight to a single stake, for this mode gives them an unnatural ugly appearance, and when strong winds prevail the whole are frequently blown down together. It is a much more effectual and better-looking plan to use four or five moderate-sized sticks for each plant, to which tie the branches out; this has the double advantage of improving their appearance and letting light and air through the plants, which keeps them dwarf and strong. Even for ordinary decorative purposes it is worth while to thin out the branches of Dahlias, for the blooms are developed much finer where this is practised, and the plants necessarily do not get exhausted so soon in the autumn. Water must be given liberally when the ground is at all dry, or they will receive a very severe check; if grown in beds by themselves the whole surface should be mulched over with 3 in. of rotten manure; if in borders amongst other plants, a space ought to be mulched round each Dahlia, as far as the roots extend.

Forget-me-nots for Spring.—Now is the time to make a sowing of these beautiful flowers for spring decoration. Myosotis dissitiflora should be used for early work, and the white and blue varieties of M. sylvatica for later flowering. Though M. dissitiflora is a true perennial, it is much better grown from seed each year than trusting to divided plants. The latter will sometimes stand remarkably well; they did so in a cold, wet, clayey soil in West Middlesex during the past winter, but they cannot always be depended upon; seedlings are more trustworthy. Then there is a very useful summer-flowering Forget-me-not, known as M. semperflorens, which has a particularly durable habit, and which stands well in hot weather; I recently saw this in the neighbourhood of Manchester flowering quite freely in a full sunny exposure. The varieties of M. azorica, and especially that known as Impératrice Elizabeth, make capital summer-flowering plants in pots; and that dwarf but exceedingly beautiful form, M. rupicola, which has the richest blue among all the Forget-me-nots, is a lovely gem for pot-work, but requires some care to have it in all its beauty.—D.

Fine Fuchsias.—There are some Fuchsias which possess an individuality of character both in leaf and flower that renders them valuable as outdoor plants. The fine old F. fulgens may appropriately head the list, with its long orange-red and brilliant carmine flowers; it is a very free-flowering plant, and one which lasts long in perfection. A variety called F. rubra splendens has the same flowers in every respect, but the leaves are smaller and blotched with claret. Then there are the fine old Fuchsia corymbiflora and its light variety, F. virginalis, of which I have a fine plant in full bloom, and very charming it is. In addition I have F. microphylla, the most minute of all Fuchsias, pumila, globosa, Riccartoni, Dominiana, and spectabilis, all as varied in character as they are interesting. They are all the more attractive when mingled with some of the leading modern varieties, and of those I can confidently recommend Sedan, Germania, albo-coccinea, Noblesse, Lustre, and marginata; and for their handsome foliage, Avalanche and Wave of Life. Some of these are so distinct from ordinary Fuchsias as to be doubly valuable on that account. F. Riccartoni is now flowering freely on a west wall in a somewhat cool and shady place in the open air, where it has had no protection for the past three years. —A.

Godetia Lady Albemarle.—This fine crimson Godetia deserves a place in all gardens where a bold, showy flower is desired. It is compact in habit and free-flowering, commencing when it is about 6 in. high, and continuing on in bloom until it is nearly 2 ft. in height. The flowers, which are bell-shaped, are deep crimson with white centres; with me it has been in bloom for six weeks, and promises to keep on flowering for some time to come. It makes an excellent plant for pots on window-sills, provided it gets plenty of sun and water.—R. G.

Hardy Ferns.—I was greatly struck the other day, while passing through a small village a few miles from Penrith, Cumberland, to see such a splendid collection of hardy Ferns on a small rockery situated underneath a drawing-room window. It contained the following sorts: —Adiantum Capillus Veneris, Allosorus crispus, Asplenium Kuta-muraria, Cystopteris fragilis, two or three varieties of Polystichum, Scolopendrium vulgare, and S. vulg. projectum; also Osmunda regalis, the flowering Fern, which makes a splendid addition to a small collection of Ferns; in fact, any one possessing a few should not be without this Fern.—E. Lodge, *Penrith.*

Dwarf Balsams Out-of-doors.—At Bedfont, where Balsams are grown out-of-doors for seed, I noticed lately a very dwarf and compact strain, which looked as if it might prove useful for culture in small pots in windows and greenhouses. As grown in the open ground these Balsams attain a height of about 9 in., and measure about the same in diameter, and are covered with bloom and foliage, and promise to make pretty edging plants for taller-growing kinds. These handsome plants can be produced in 5-in. pots. There are four distinct colours or markings in the flowers—scarlet self, purple self, white-flaked scarlet, and white-flaked purple. The taller-growing, large-flowered kinds bloom most profusely in the open ground, in which they are very beautiful. The colours range through pure white, creamy-white, rosy-white, pink, carmine, scarlet, peach, mauve, purple, crimson, and several blotched and flaked forms, forming about twenty varieties. The culture is of the simplest kind; the young plants are dibbled out into well-prepared ground at the end of May in rows 15 in. apart.—S.

Hardy Plants for Profit.—The great point to be observed is to grow only the very best varieties, so that the seedlings may be recommended as of superior quality. Bedding Violets are in great request, and are of easy propagation. Spiræa japonica and Lily of the Valley are favourite plants for forcing, and if grown liberally will increase rapidly. I would, however, advise as a speciality the culture of the many beautiful forms of Primrose. Those who can get a stock of them will find no difficulty in disposing of them. A large nurseryman lately informed me that he found it impossible to procure enough of the better kinds. The finest varieties being kept true to name and propagated by division, the seed may be saved, and a quantity of young plants raised which would find a ready sale. In the neighbourhood of a market town the bright-flowered, free-growing kinds of Polyanthus would be easily disposed of, as would also nice little tufts of Myosotis dissitiflora, Aubrietia purpurea, Daisies of kinds, Campanulas carpatica, turbinata, and garganica, Gentiana acaulis, &c. Anemone japonica and its white varieties should also be included in the list which may be disposed of in the trade. There are other good things besides those enumerated, but none better or more likely to command a sale.—J.

Trellises above Walls.—The use of walls is so frequent in our gardens that any means of softening their appearance or adding

to their advantage is desirable. In many cases a light trellising above the wall would have great charms; if the wall is low, for example, it may be desirable to raise the surface for climbing plants, as many walls are made too low for the full development of climbers. A light trellis strained above the wall to any desired height allows the climbers to pass up from the wall and to form light wreaths and masses of flowers above it. The hardness and the stiffness of the wall is thus got rid of. The effect of the foliage and flowers is much more light and graceful than on a wall. The plants or flowers can be seen on both sides, which in many cases might be an advantage, and the addition of height is obtained with much less expense than in the case of wall building. The beauty of many suburban gardens would be greatly enhanced if elegantly-clothed trellises were more common. The low walls that are usual necessitate mutilation of the climbers. A greater degree of light for the plants should be added to the advantages mentioned above. We have lately seen a wall in Mr. J. B. Brown's garden at Bromley crested by a wire and netting trellis, and wreathed with large-flowered and sweet-scented Clematis and Roses in a way that produced a beautiful and very natural effect.

GLASSHOUSES & FRAMES.

Nertera depressa.—As regards the raising of this plant the difficulty I experienced was for some time to cause the seeds to germinate, as I used to plant the berries entire, but a friendly gardener advised me to break the skin of the berries, and in each one I found two seeds. The next process is as simple: fill your flower-pots of any size that is convenient with peat and silver sand, and place the seeds on the surface, say 1 in. apart, and keep them well watered. I think it is a mistake to give them too much heat; some of my plants were in a cold box frame the entire winter, and look just as well as those that were in my greenhouse. I should say that every seed must have germinated. The seeds were sown on the 31st of August, 1878, and are now beautifully in fruit.—J. E. D., *Epsom.*

Coleuses in Small Pots.—As an example of what size a Coleus may be grown in a small pot, I would just say that I have at the present time in my nursery a plant in a 4-in. pot struck from a cutting early in April, which measures 6 ft. 4 in. high, has side shoots 19 in. long, and leaves measuring 8 in. long by 5 in. across.—John Green, *Norwich.*

Zebra-leaved Dragon-tree (Dracæna Goldieana).—This is one of the most distinct plants in the whole family of Dracænas. As yet it is comparatively scarce and expensive on account of the difficulty experienced in propagating it quickly. It is, however, an excellent plant of easy structure when established, its tesselated leaves rendering it entirely distinct from any other plant grown in the stove or greenhouse. It will grow well in peat and loam mixed or separate, and requires a temperature slightly higher than that of any ordinary greenhouse. Most nurserymen now have plants of it, but the largest stocks of it we believe are to be found in Mr. Bull's nursery at Chelsea and Mr. Wills' nursery at Anerley.

Hydrangeas after Flowering.—As these go out of bloom they should at once be pruned into shape by shortening the long straggling shoots, after which plunge the plants in an open, sunny situation, that the growth they make may be compact and short-jointed. So managed they will form large globular, symmetrical heads, which, from the thorough ripening the young growth is sure to receive from exposure during the remainder of the summer, will be laden with massive trusses of flowers that are always such an ornament during the early spring months. Any one visiting Covent Garden at that season cannot fail to have been struck with the dwarf well-managed plants of those growing in 6-in. or 8-in. pots, each of which carries an enormous head of bloom, varying from 10 in. to 15 in. through. Those who wish to have plants of a similar size and description should set about their propagation as soon as strong cuttings can be obtained, having the flower-buds already formed and visible at the ends of the young shoots to be severed. Such cuttings can generally be obtained from established plants growing in an open, sunny situation, where, in order to assist them to produce a suitable growth, they should be afforded an occasional soaking with liquid manure, or have the surface soil mulched over by applying it in a solid state. The cuttings should be taken off, so as to preserve about three or four pairs of leaves after the necessary trimming has taken place, which will involve the removal of those from the lower joint to admit of inserting them firmly in the soil in which they are to form root. Single pots of small size are the best in which to strike them, as then they can be shifted on into others without any further check to the leaves or newly-formed roots. In preparing the pots place only a single crock over the hole, and on this a few small pieces of dry crusty manure, afterwards filling up the pots with good fibrous loam in which to insert the cuttings. The pots containing them should then be plunged in slight bottom-heat, under the protection of hand-lights or a glazed frame, in which they should have plenty of air after the first few days to keep the tops cool and prevent the buds from starting, which a close moist heat would induce them to do. In order to keep the leaves fresh and prevent them from flagging, they should be frequently syringed and kept well shaded from the sun till the roots are formed, after which the shading should be gradually dispensed with, and the plants receive their final shift into 6-in. pots. The variegated varieties of Hydrangea are well deserving cultivation for the beauty of their foliage, independent of the fine heads of bloom they produce, almost equalling in that respect any of the green-leaved kinds. When forced early they show much more delicacy of colouring than if grown naturally, and are therefore doubly valuable on that account. Where ornamental-foliaged plants are in request for decorative purposes during the early spring, no better subjects can be had than the two fine forms of the above known as H. aurea variegata and H. argentea variegata. These may be propagated at any time when cuttings can be obtained, and as they are most useful for the ornamental appearance of their foliage, the object should be to get them to a good size as quickly as possible, which may be accomplished by potting them in rich soil, and growing them under glass in a moist atmosphere, where they can get the benefit of a little shade.

Zebra-leaved Dragon Tree Dracæna Goldieana).

Pelargoniums as Basket Plants in Winter.—Hanging baskets in conservatories considerably enhance their attraction. One condition of success in growing basket plants is the careful selection of plants that will really flourish in the strong light and dry atmosphere of such a situation. After trying several experiments, I must give the pre-eminence to the several varieties of Pelargoniums, both for the length of their period of flowering and for the great variety of colour, both in leaf and flower, which they exhibit. About the middle of August last we filled several large baskets with the Pelargonium family. The bottom of each basket was lined with fresh green Moss, and large plants of the Ivy-leaved varieties, such as L'Elégant and Willsi roseum, were planted at the edge, and pegged over the outside of each. The centres were then filled with free-flowering zonals, scarlet, pink, and white, and a few plants of tricolor and scented-leaved varieties. They were hung up out-of-doors under the partial shade of trees for a month until well established, when they were removed to their light, airy, winter quarters, at the top of a large conservatory, where all the autumn and winter they were continually glowing with splendid trusses of bloom. The many beautiful varieties of Ivy-leaved Pelargoniums now in cultivation show to greater advantage in this way than under almost any other circumstances. As soon as the under part of the basket is covered the shoots should be allowed to depend naturally, when their graceful habit will greatly add to the beauty of their showy, but stiff-habited, zonal brethren. The good or bad effects of baskets depend greatly on the graceful and natural manner in which the plants are arranged. Great care must be paid to the watering of all basket plants; they are much exposed to drying currents of air, and therefore suffer sooner from lack of moisture than plants on the floor or stages of the house.—G.

Zonal Pelargoniums.—What plants are really better than the zonal Pelargoniums for the greenhouse? Now that there is such a variety to choose from, there is no difficulty in making a selection of good ones. Throughout the whole summer and autumn you may keep

the greenhouse bright and gay with these useful flowers; and there is nothing better for a bouquet or vase than some fine Pelargonium blooms. It is a good plan to put out the plants for the summer, and then they form good strong specimens before being lifted for the winter. The following are six really splendid ones both for size and colour:—Sophia Berkin, Portia, Titania, Gnome, Mrs. Ward, Mrs. Wright.—W. A. G.

Annuals for Greenhouse in Spring.—There are some few annuals that are very useful as spring bloomers when sown during the months of August and September. The best of these are Schizanthus retusus and its varieties Grahami and Grahami albus. The intermediate Stock is another useful plant in early spring. The little Nemophila insignis makes one of the prettiest basket plants imaginable when grown through the winter under glass. Any one wanting a really fine basket plant will find it in Venidium calendulaceum; this is a very fine annual, and one much too little known. It should be sown in spring, and be planted in a large basket early in the summer, when a grand display of pendent shoots and blossoms will be the result in autumn. Browallia elata and Browallia elata grandiflora are two useful plants for pot culture, and are equally effective at all seasons of the year. By making successional sowings these may be had in flower all the year round. A sowing made about the middle of February in a little warmth will make good flowering plants during May and June, and will help to produce variety at a season when there is not much in flowering except Pelargoniums. Another large sowing should be made about the middle or end of June in a cold frame. These, if grown on without check, will prove very valuable for cutting purposes during the autumn months, and will last a considerable time in bloom, and give a colour that is very scarce at that season of the year. The different varieties of Candytufts—white, purple, crimson, and flesh-coloured—are all useful in autumn. The treatment given to Browallias will suit these, with the exception that more liberal drainage must be given them, otherwise they are liable to damp off during the dull days of autumn.

A FERN-LEAVED HOTHOUSE PLANT.

Paulinia thalictrifolia is one of the most beautiful of plants, and one that cannot fail to become a favourite. It is a native of the southern Brazils, from whence it was introduced to the nurseries of Messrs. Veitch and Sons, of Chelsea. In general appearance it is not unlike a minutely cut-leaved Maiden-hair Fern, and, indeed, so much does it resemble a Fern, that it might easily be mistaken for one. The leaves are of a rich shade of green, and, as the specific name implies, they closely resemble in shape those of some species of dwarf Meadow Rue (Thalictrum). The young branches are clothed with a velvety down of a greenish-chocolate colour, and the woody stems are also tinged with brown. The graceful appearance which the plants have when in a young state is admirably represented in the accompanying illustration. If only required for decorative purposes there should be no inclination to make the plants produce flowers, which are inconspicuous; therefore the main object should be to have plenty of healthy foliage. To secure this, the plant should be grown in a temperature of from 65° to 70°, and if one part of the greenhouse is more adapted to its growth than another, it is the dampest part. After this plant came into the possession of Messrs. Veitch, and before its true value became known, some plants of it were placed in a corner of an old, very damp, warm pit, in which position they grew wonderfully strong, and quite surpassed in vigour and beauty those that were, as was then supposed, placed under more advantageous circumstances, *i.e.*, in drier and lighter parts of other houses. Care is therefore now taken to keep them where abundant atmospheric moisture can be supplied. This plant may be grown to train on a small trellis or to affix to short rafters, but the best mode is to grow it so as to form little well-foliaged specimens. A compost consisting of two parts good substantial peat and one of loam, together with some silver sand, suits it admirably. W.

Honeydew.—In Gardening of June 19 (Query 2354) I quoted two authorities on this subject, one declaring that honeydew is an exudation of the aphis, and the other that it is emitted from the leaves of the plant on which it is found. On the 3rd July two of your correspondents replied, both supporting the insect theory. My own observation convinces me that it does not emanate from the insect, although undoubtedly occasioned by its attacks. I have frequently observed leaves covered with honeydew quite free from and beyond the range of any insects, and therefore physically impossible to be their exudations, although, of course, other parts of the plant were infested by them. Hops, as everybody knows, frequently "go black" from the attacks of aphis and its attendant honeydew, the latter being popularly alluded to as the "sweat" (or natural secretion) of the plant which, in my judgment, is exactly what it is. If so, the sooner Sir J. Lubbock and other writers correct their erroneous impressions the better it will be for science. It is not creditable to the latter that at this time of day there should be any doubt on such a simple matter.—H. D.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 9.—Sowing Atkin's Matchless, Shilling's Queen, Dwarf Early York, Cattell's Reliance, Enfield Market, Little Pixie, Early Burn's Cabbage, and Red Cabbage; Walcheren, Early London, and Frogmore Forcing Cauliflower; Tripoli Onion; Stone and other Turnips; Radishes. Potting Cinerarias and Wigandias; finished potting President Strawberries. Planting Endive and Lettuce, latest sown, the latter in trenches; planting Autumn Giant Cauliflower and Cooling's Broccoli; also some broad-leaved Endive. Layering Strawberry runners for planting. Pricking out Wallflowers. Preparing ground for pricking out Stocks. Syringing Azaleas with Gishurst for thrips. Watering Celery every three days. Putting Tripoli Onions in loft. Getting Shallots and Garlic under cover. Looking over wall trees and espaliers and flower beds. Picking off seed-bearing stems from Pelargoniums

Aug. 10.—Sowing Prickly Spinach, Tom Thumb, Bath Cos, All the Year Round, and Victoria Lettuce. Putting in cuttings of scented Geraniums. Layering runners for a new Strawberry bed. Finishing potting Strawberry plants. Shifting Victoria Stocks into 5-in. pots. Left off syringing orchard house, and put plenty of air on all day. Cutting superfluous shoots from Vines. Thinning last-sown Turnips.

Aug. 11.—Sowing Mustard and Cress, Radishes, and Prickly Spinach. Potting Calceolarias and latest Balsams. Cuttings of Pelargoniums; also of Coleus and Pansies. Planting Endive, in deep drills, sown July 11. Planting Lettuce under wall sown July 11; also some Cabbage sown July 1. In the event of failure in the case of July-sown Cabbage, planting some small plants of April-sown Little Pixie, Hill's Incomparable, and Fearnought. Planting some Lettuce sown June 24, and thinning the bed. Tying Dahlias and Peach trees. Staking Chrysanthemums. Nailing Tomatoes. Shifting scented Pelargonium cuttings in 5-in. pots.

Aug. 12.—Potting May-sown Cockscombs in 5-in. pots. Gather Chilies, Gherkins, and French Beans for pickling. Earthing up winter Greens. Cleaning scale off Stephanotis. Fumigating greenhouse for thrips. Stopping Vines. Cleaning up, sanding, and salting walks. Clipping Box edgings. Cutting Laurels. Giving Parsley lime, soot, and guano. Top-dressing Roses in pots. Plunging tree Mignonette. Making border ready for Cabbage, Cauliflower, and Lettuce seeds. Drying herbs. Giving Scarlet Runners guano water.

Aug. 13.—Putting in cuttings of Arabis albida variegata, Pansy (under hand-glass), scented Verbenas, and Pelargoniums. Planting Endive and Parsley. Tying Salvia splendens. Tying up Lettuce. Nailing Tomatoes in orchard house. Netting Jargonelle Pears and late Gooseberries. Repotting intermediate Stocks and Carnations. Removing breastwood from Apple and Pear trees. Cutting down Pelargoniums. Rolling all walks after rain, having first cleared them of weeds. Putting wharf sand on walks. Finishing layering Strawberry runners for planting. Digging land for latest Turnips. Making ground ready for Leeks. Drying Basil, Mint, Thyme, Sage, Hyssop, and Penny Royal.

Aug. 14.—Sowing Syon House Cucumber and Mignonette in pots; also Phlox, Nemophila, Clintonia, Lobelia, and Rhodanthe. Potting Violets; also summer-struck Pelargoniums into 5-in. pots. Planting Rockets. Shifting spring-struck scented Verbenas. Cutting Lavender. Digging first Celery. Gathering Pears, viz., Citron des Carmes and Doyenné d'Eté; and Transparent Apple and Morello Cherries. Plunging Tree Carnations and Cloves. Cutting Portugal Laurels. Making drills ready for Spinach. Keeping Melons from 70° to 75° at night, and from 75° to 80° by day.

Flower Garden.

Herbaceous Plants.—Amongst these there are now in bloom several fine Spiræas, Tradescantias, Campanulas, Asters, Achilleas, Potentillas, Lathyruses, Veronicas, Tritomas, Statices (such as S. latifolia and S. Fortunei), Pentstemons, Phloxes, Stenactises, and others. In order to have fine flowers the shoots should be thinned out a little and small earth basins formed round the roots of each plant for the retention of water. Cut over at about half the length of the stems such plants as have done blooming for the sake of neatness. Many kinds of perennials may yet be propagated from cuttings, and also by means of seeds, which may be either sown in a border out-of-doors or in boxes in frames. Gather all seeds as soon as ripe, dry them, and dress them, and either sow them immediately or keep them till spring.

Bedding Plants.—Such plants as Pelargoniums, Verbenas, Calceolarias, Heliotropes, and similar subjects may now be regarded as at their best; this is therefore a good time for considering what plan of bedding shall be adopted next year. In dry weather plants in active growth will require abundance of water, as well as occasional applications of weak liquid manure; strong-growing plants will require stakes, but as few as possible should be employed. Where Petunias, Verbenas, and similar plants are used as edgings, they should be kept pegged neatly down. Now that the plants in the carpet beds will be growing fast, both knife and fingers must be used freely, so as to preserve exactitude in the pattern, for confusion, as regards design, in this mode of gardening is anything but imposing. Decaying flowers should be removed, seed-pods picked off, and unhealthy or exhausted plants replaced by fresh and vigorous ones.

Pinks.—Pipings which were put in some weeks ago and are now well rooted should be placed out-of-doors. They must now be planted out about 4 in. apart in fine soil, to be replanted again in October. If there be not a sufficient number of plants, it is not difficult to obtain plenty of good side-growths from the strong shoots. Such plants will not be large, but they will produce a few good full-sized flowers. If the space is now vacant where it is intended to put out the plants, it ought to be trenched up and some good rotten manure mixed with it.

Gladioli.—The spikes of these are now showing themselves, and require attention. Stoutish sticks must be put into the ground near the bulbs, but not so close as to injure them, and to these the spikes must be fastened. If the beds are mulched and water is applied when necessary, clear water need only be used; many use guano water or drainings from the manure heap, but as this may aid decay in many of the bulbs, and as the strongest spikes can be produced without its aid, it is better not to use it.

Dahlias.—These are now growing with great vigour, and will require attention. See that traps are set for earwigs, which are very destructive to the blooms; they eat the edges of the yet unopened petals. Bean-stalks inserted between the shoots and the sticks to which the plants are tied form a good hiding-place for the insects; they crawl into them at night, and can be blown out in the morning into a pail of water.

Hollyhocks.—These require much the same attention as Dahlias, such as fastening the main growth to the sticks and removing the side shoots. If eyes can be obtained from these they make excellent plants. Simply take the eye and cut it out with about ½ in. of stem attached; insert these about four or five together in a small pot, using fine soil with a little leaf-mould and sand added to it. See that the stems are fastened to their supports as they progress in growth, else they are likely to snap over during a gale. Mulch round the roots of these as well as Dahlias; both are gross feeders and will take liberal drenchings of manure water.

Pansies and Violas.—Cuttings of these should now be put in. They strike freely in the open air under a north wall, but must be well supplied with water. Pansies, particularly the self-coloured varieties, are very beautiful during spring, but do not flower so long as the Violas; yet, if a succession of plants be kept on hand, by putting in a few cuttings every six weeks throughout the season, from the time growth commences in spring until autumn, uninterrupted bloom may be had; but in the hot summer months they should be grown on the north side of a wall, or they will not produce good flowers, as they do not like exposure to the drying influence of the sun.

Glasshouses and Frames.

Cinerarias should at once be placed in their flowering pots—6 in. or 7 in. in diameter is large enough for ordinary purposes—and, as

the plants are well managed, they will grow therein to a size that will produce fine heads of bloom. They are very subject to green fly, which must never be allowed to get established upon them, or both appearance and vigour will be sacrificed. As soon as the pots are filled with roots they should be regularly supplied with manure water. Never allow them to become cramped at the root before moving them into their flowering pots, or they will not attain their wonted strength and size. Grow them in good loam, with one-fifth of rotten manure and leaf-soil in equal parts added, and as much sand as will keep the soil porous. They do not bear Tobacco smoke well, as it often injures the leaves if applied of sufficient strength to destroy aphides—to free them from which, dipping in a pailful of Tobacco water is the best remedy.

Primulas.—These should also be moved into 6-in. flowering pots. They are somewhat spare-rooting subjects, and do not require a great body of soil to grow in. Drain them well, using soil similar to that used for Cinerarias. Put both in pits or frames, facing northwards, and give air freely, taking the lights completely off the Primulas during the day, but do not allow them to get saturated with rain. In very bright weather a piece of old fruit tree netting placed over them will be useful to break the sun's rays, but will not obstruct the light as a mat would do.

Celosias are amongst the most useful annual decorative plants grown, and at no season do they come in so serviceable as through the late autumn months; the latest sowings will now have made some progress, and attention must be paid as to having sufficient pot-room, as they, in common with all quick-growing plants, if allowed to remain, even for a short time, deficient in this respect, can never afterwards be set to rights. They are naturally disposed to grow higher than often required, to counteract which they should from the first be kept as near the light as they will admit of. Use the syringe regularly to the undersides of the leaves to keep down red spider, to which they are subject.

Table Plants.—Where these are required, there needs to be a continuous supply of young stock coming on, or they soon get too large, and when so used they are very objectionable. Tastes differ somewhat as to the different plants used, but it is generally admitted that the spare-growing, lightest, most elegant plants are the most suitable, amongst which may be reckoned some of the Palms, of which Chamædorea graminifolia, Cocos Weddelliana, C. plumosa, and Geonoma gracilis are the best; add to these, Aralia Veitchi, reticulata, and gracillima; Croton angustifolium, confined to a single shoot; the narrow-leaved Dracænas, such as nigro-rubra, and several of the hybrids of a like character; Pandanus elegantissimus, P. Veitchi, and the variegated P. javanicus; Cyperus alternifolius and its variegated form; Jacaranda mimosæfolia; Reidia glaucescens; and Terminalia elegans. These, and anything else employed for a like purpose, should in all cases be confined to a single stem; anything approaching a bushy habit renders them too heavy, and unfit for use. Such plants of the above as can be increased from cuttings when they get too large may be cut back, and after the shoots have broken and attained a considerable size taken off and struck. Palms can be raised from seed or procured so as to keep up a supply from those who grow them for the purpose. With plants to be used in this way another matter of importance is never to get them in too large pots; 6 in. diameter is quite as big as admissible or necessary, for, with the aid of a little manure water, they can be grown to a size even larger than adapted for the purpose, still retaining all their lower leaves fresh and healthy.

Cool Orchids.—The family of Odontoglossums and Masdevallias are the representatives most worthy of especial consideration in the matter of temperature, but unless where there are a number of houses devoted to Orchids, so as to accommodate those that require different treatment in this respect, it becomes a necessity to grow a good many other kinds with them, some of which are benefited by a few degrees more heat than the plants named like; yet no harm will be done in a compromise of this sort provided treatment is given that will compensate for this. Masdevallias and Odontoglossums in common with other Orchids will not suffer through being subjected to a little more heat than they absolutely need if accompanying it they are grown nearer the glass with a little extra air, as a matter of course using somewhat more atmospheric moisture when the weather is hot and the external air admitted is somewhat dry.

Ferns.—Where there is a house devoted to these plants, or where they have to be grown along with others, there should always be provision made for keeping up a sufficient number of the kinds most useful for decorative purposes in a small state, by annually potting off a number of the seedlings of those that usually come up from self-sown spores, and by sowing the spores of such others alike suitable for use in this way as need to be so raised. The different forms of Pteris serrulata, both crested and plain leaved, are amongst the most hardy and useful plants that can be grown for standing about in greenhouses, intermediate houses, stoves, conservatories, or rooms. So accommodating are they that they will succeed almost anywhere. Adiantum cuneatum is also one of the best, doing well with either a medium amount of heat or in a cool house, and lasting in a presentably fresh condition for some months in ordinary living rooms. A. formosum and A. hispidum will both succeed for a like purpose. Davallia bullata, D. Novæ-Zelandiæ, D. canariensis, Nephrolepis exaltata, and Pteris cretica are all extremely useful for using either amongst flowering plants or in any place where elegant green-leaved subjects are wanted. There are but few private places where the stock of the above might not with advantage be increased. All can be raised from spores or by division. The Davallias can be propagated by division of the rhizomes when the plants are at rest. All these, as well as other Ferns, can be kept in a vigorous healthy state in very small pots provided they are regularly supplied through the growing season with weak manure water; by the use of this, even when the roots are so confined that the growth would otherwise be both weak and yellow in colour, the fronds will come sufficiently strong, possessing the desirable deep shade of green. The hardy Scolopendriums are excellent plants for employing in like manner, and their distinct foliage is an advantage. Such species as Lomaria gibba and L. cycadiæfolia should be annually raised from spores, as they are most serviceable in a comparatively small state. To be successful with the latter variety the fertile fronds should be taken from the plant as soon as ever there is an indication in the coverings of the spore-vessels to rise, otherwise the spores will fall and be lost. The fertile fronds should be broken up into small pieces and scattered over pots or pans filled with a mixture of peat, grit-stone, charcoal, or crocks, with a liberal addition of sand, kept moist, and a sheet of glass laid on the top, placed away from the sun in a little warmth, where they will soon vegetate. Ferns, such as most of the Tree species, that are inclined to get too large in the head for the places they occupy, may, now that their summer crop of young fronds is fully developed, have a considerable number of the old ones cut away. They will also bear washing with Tobacco water to destroy thrips. Should these exist, this is the most effectual method of killing both these insects and their eggs. Where there is scale on Ferns, if it is not kept in check, it becomes an intolerable nuisance, as it spreads with great rapidity to all that stand in contact with, or are overhung by such as are affected with it.

Fruit.

Vines.—It will still be necessary to carefully guard against scalding late Grapes that have not yet passed that critical juncture. Give fire-heat at night, and keep the ventilators 1 in. or 2 in. open in order to prevent condensation of moisture, and this, coupled with free day ventilation, will be found to be a sure preventive of the disease. Houses containing ripe fruit should be kept as cool as possible, and if the weather be sunny a slight shade would tend to preserve the colour of the fruit for a longer period. Check any disposition which early Vines may still show towards making fresh growth by persistent pinching, and see to the renovation of the borders as early as circumstances will permit, in order that the roots may get established in the new soil before the close of the growing season.

Peaches and Nectarines.—Trees from which the crop has been gathered should be regularly syringed, in order to maintain cleanliness of foliage, and if fly be troublesome fumigate with Tobacco paper. Do not hesitate to cut away any straggling shoots that are likely to prove injurious through overlapping others, and which hinder the full action of light and air on the fruiting wood of next season. Keep inside borders well supplied with water, and the trees that are swelling off fruit should have manure water. Soil should be got in readiness for making new borders or renovating old ones, as transplanting and top-dressing should be done as soon as ever there are indications of maturity of growth by the falling of the leaf; there is then no perceptible check as regards fruiting the following season.

Vegetables.

When a choice of two evils occurs it is obviously the best policy to select that which appears to be the less of the two; and as the Potato murrain has now set in, by far the lesser evil will be to at once dig up all kinds that are anything like full sized: even though some may go bad afterwards, it will be better than leaving them in the ground to be entirely destroyed. When the Potatoes are harvested, there will be ample space for all kinds of winter Greens. The planting of Savoys, Kales, Coleworts, and late Broccoli should be completed forthwith, and earlier plantations will now be fit to earth up, a practice at once beneficial both as a protection against wind-waving and as a means of aërating the soil.

A last sowing of Cabbage and Cauliflower may now be made on a warm sheltered aspect to stand the winter. These will make good plants for putting out in spring to succeed the late autumn plantings, the produce of seed sown a fortnight or so ago. The sowing of winter Spinach should not be longer delayed; a deep, moderately rich soil and a dry situation suit it best, and the plants should not be nearer together than 1 ft. each way. We prefer the rows 2 ft. apart, in order that the ground may be the more conveniently hoed and the produce gathered. Onions of the Tripoli and Giant Rocca kinds should at once be sown rather thickly in drills, to be planted out early in the new year. Of course this plan is practised with a view to the utilisation of ground, there being no valid reason against sowing them sufficiently thin, and where they are to mature, except the question of space, which in most gardens is now fully occupied with winter and late maturing autumn crops; such concentration of space is therefore necessary.

Winter Lettuces (Bath Cos), Endive, and Turnips should all now be sown in quantities more or less according to circumstances. Lettuce and Endive may still be planted out with fair prospects of success. If, as often happens, ground for Celery could not be had in sufficient quantity at the proper time, any planted now will come in admirably for soups, and will save the general stock. It should be planted out thickly, and, like Lettuces, that is all the culture which it will require seeing that it is intended for soups only. Earth up the earliest planted Celery; mulch and stake late Peas; cut Globe Artichokes as soon as they are fit for use—even if not required they had better be cut, and when done bearing all the old stems should be removed and the ground loosened with forks or hoes. Remove also the seed stems from Seakale, and thin out the crowns if crowded, in order to favour early ripening. Tomatoes should be encouraged by constantly pinching and training out the shoots, aiming rather at early maturity of a little fruit than a quantity which perhaps may fail to ripen at a later period.

Killing Slugs.—Being much troubled lately with the number of slugs in the garden, and trying several things which did not have so good an effect as I could have wished, I adopted slaked lime powdered finely, at least I got a bag of gas lime (for which I gave 3s., and will last some years in a small garden), and before using exposed, spread out, to the atmosphere for several days and nights to slake, then put into a coarse canvas bag (an old Turnip seed bag I use), secure the neck of the bag with a piece of

thick cord, which make fast to the end of a spud or stout stick, then for a few evenings successively, or very early in the morning, dust anything over that the slugs are taking. I find this method distributed the lime both evenly and quickly. A few minutes each evening suffice to complete the operation, and it is not hurtful to vegetation when well slaked, and slugs dislike it more than anything I have yet tried, and it has much decreased their number. H. S.

FRUIT.

VINES IN POTS.

Although Vines are usually grown in pots for the special purpose of obtaining Grapes earlier than they can be obtained from permanent Vines, or, more strictly speaking, earlier than it would be wise to force permanent Vines, there is no reason why amateurs possessing greenhouses should not grow Vines in pots to ripen their fruit at midsummer or even later. In many greenhouses there is not the convenience for making a Vine border, in which case Vines in pots form the most convenient medium of obtaining Grapes. Moreover, it often happens that the amateur, after having ripened a crop of Grapes, wishes to use his greenhouse for plants, and permanent Vines are consequently in the way, whereas pot Vines may be at once turned out-of-doors. The great drawback to pot Vines, however, is, that they must be bought every year, unless convenience for growing them at home exists; but as good canes can generally be bought for about 5s. each, and these should yield at least 8 lb. or 9 lb. of Grapes of good quality, the investment is not very ruinous. The annexed engraving was taken from a Vine grown in a pot at Berkhamsted by Messrs. Lane & Son, and is a sample of what fine results may be obtained from Vines in pots under proper culture.

A well-grown Pot Vine.

In the culture of pot Vines Messrs. Lane are most successful; they grow about 2000 plants yearly, and they are all grown without bottom-heat, a circumstance of importance as regards their well-being. After one year's growth the canes are cut back to within a few inches of the pots; next year they are started about Christmas, and the bunches which they bear—with plenty of air, light, and room, and abundance of water during the growing season—are the admiration of all who see them. They are grown in 12-in. pots, and at starting time are plunged in a bottom-heat of about 60°, the atmospheric night temperature being about 45°, and the day temperature during sunshine 65°. Instead of being tied to the trellis under the roof of the house at once, as is usually done, they were twisted round stakes inserted in the pots, which has the effect of inducing them to break regularly at every joint. A moist, comparatively low temperature is maintained until the buds burst, when the canes are untied from the stalks and secured to the trellis near the glass, and the temperature gradually increased. Early pot Vines are always grown as near the glass as possible, which has the effect of thickening and hardening the leaves. During the earliest stages of growth strict attention to watering is observed, enough being given to keep the roots moist, but not so much as to saturate the soil. After the fruit is set copious waterings are given, sometimes twice a day; and whilst the berries are swelling rapidly, weak manure water, the result of mixing fresh horse droppings and soot, is liberally given them. Messrs. Lane attribute many failures in growing pot Vines to placing them too near the hot-water pipes, or rather by making the hot-water pipes supply bottom-heat, by which means no regularity of temperature can be maintained, as it is necessary sometimes to have the pipes cold and at others hot, according to the state of the weather; grown under these conditions the young fibrous roots are injured and the crop much impaired. A gentle hotbed of moist plunging material always yields the best results. After the bunches are set the shoots are stopped at three or four joints beyond the bunch, and a little air is left on day and night, which makes the foliage harder and better able to withstand the alterations of cloud and sunshine, which we generally get in spring. A little sulphur is kept sprinkled about the Vineries during autumn as a safeguard against mildew. The soil used for Grape growing here is a heavy, sandy, yellow loam, obtained from the adjoining common.

Keeping Strawberries from Slugs.—"Old Indian" (p. 237) asks for information as to keeping Strawberries clean and at the same time prevent slugs from eating the fruit. My experience is that the best way of accomplishing both purposes is to keep the fruit off the ground, and this I do by making supports for it of bits of lath. A bundle of split laths, 4 ft. long, costs about 3s., and will make a great number of such supports. A lath is cut into four lengths of 1 ft. each; these form the rails. Another is cut into eight lengths of 6 in. each; these form the supports. The rails have ⅝-in. holes bored through them within 1 in. of each of their ends; the supports have corresponding pins worked upon them at one end for insertion into the holes. These pins are about 1 in. long, cut out by "shouldering" the lath. Two, three, or indeed any number of rails may be connected together by having their ends joined over these pins; and, so connected, they can with the greatest ease be applied for the support of Strawberries, keeping them quite clean and effectually protecting them from slugs, which will not climb these posts and rails. An improvement of the post may be made by cutting it 8 in. long instead of 6 in., and sharpening the lower end like a stake for insertion into the ground. This helps to steady the support; but the other plan is effective enough.—J. M.

Rust on Grapes.—Amongst all our Grapes this season all the rusted berries do not exceed a dozen, and previous to thinning not one showed this disfigurement. I am, therefore, of opinion that the scissors, while working amongst the berries, engender rust. Any one who has thinned Grapes will have observed that the scissors soon become quite moist on the part used for clipping. If they are laid down then on a piece of clean wood they will leave a rusty mark, and I am of opinion that the same stain is left on some of the berries, thus producing the disease. Wiping the scissors frequently with a dry cloth keeps them quite clean.—V.

How I Keep Strawberries Clean.—To keep the fruit clean and off the ground, and to preserve them from slugs, I buy a bundle of Fir plaster laths, which costs 1s. per bundle of 90 laths, 4 ft. long, cut them into 1-ft. lengths, and bore a ⅝-in. hole 1 in. from each end; then take some sticks 6 in. long, and make 1 in. at the top round as a peg to fit the hole in the lath, and four laths and four pegs will make a wooden frame to draw all the fruit round its four sides, or if the plants are very large use five laths and five pegs. I have had James Veitch's Strawberries, weighing 2½ oz., supported in this frame quite clean. The laths are about 1 in. broad and about ⅛ of an inch thick. I am indebted to an amateur for this invention.—J. W. H.

Gooseberry Caterpillar.—Over many acres of Gooseberry bushes the caterpillar is now reigning supreme. Although not an unknown visitant by any means, this pest is this year more than usually troublesome, and is clearing off the foliage, not only from Gooseberry bushes, but also from Currants where these come in the way. Our metropolitan growers do not seem inclined to cope largely with the enemy, as in some cases they let the caterpillars alone, and in others employ dressings of soot; but this is productive of but little good, and entirely damages what fruit may be left hanging. Probably the best of all remedies would be to provide children with leather gloves and set them to handpick the bushes, especially in the direction in which the enemy is advancing. Some good would also be done if the bushes were well shaken with stout sticks, and the soil beneath well scraped with hoes, both earth and insects being drawn into the spaces between the lines of bushes, and then well salted and turned in with a spade. All these things would largely help to check the invaders, and the greater the check the less the mischief. Of course, the grower makes the matter one of £ s. d., and if he cannot afford all this labour, or perhaps it is not obtainable, then the bushes must take their chance, and there is abundant evidence that such a course means total disleafing. A large portion of the berries have been gathered in a green state and sold in most cases at good prices. The grower who has allowed Couch and Thistles to choke his bushes finds his fruit small and his returns poor, but the good and clean cultivator, who has the finest berries, is well content.

Salt Water *v.* Weeds on Walks.—Where the hoeing of walks can be easily done, that doubtless is a very good way of keeping them clear of weeds; but in many cases, from the nature of the walk, hoeing is impracticable, and weeding by hand is often so tedious, that the time spent upon it is unprofitable. Recently, to get over some hard walks that could not be conveniently hoed, and which were becoming full of small weeds, the following plan was tried—a very simple one, which has answered effectually in two ways, viz., killing the weeds and saving time:—A water-barrow was filled with water, in which was put a bagful of salt, which was pretty well shaken about in the water till it got a good deal melted; this made the water salt without allowing it to become so dirty as to stop the rose of the watering-pot. This done, the water was taken to where the operation was to be commenced, when the surface was watered with the mixture. Thus managed, a good length of walk is soon gone over, and the plan need only to be tried once to prove its efficiency. Still, the work would require to be done very carefully if there are

Box edgings, as if the water touch them they will share the fate of the weeds. This work can, however, be done with careful hands on walks having Box edgings with the best result. On a dry hot day merely damp the surface with the salt water. This is too much for the weeds to withstand.—M.

The Woolly-headed Thistle (Carduus eriophorus).—This is one of the handsomest of our native kinds of Thistle, and forms noble specimens often from 5 ft. to 6 ft. high. The flower-heads are very large and of a purplish-red colour, and are surrounded on the underside with a dense cottony web, and from this it takes its name. It is a conspicuous plant when mixed with other large-growing plants in the open border, and it has been found specially valuable for producing a sub-tropical effect. In open spots in woods, by wood walks, margins of shrubberies, &c., it is quite at home, as it is quite indifferent as to soil or position.

ANSWERS TO QUERIES.

2591.—**Beetles and Roses.**—The large green beetle to which your correspondent "W. R. Burgess" refers is doubtless Cetonia aurata, one of the most brilliant of our native Coleoptera. Its length is about ¾ in., and it is easily recognised by its shining golden-green colour. This insect is generally found buried amongst the petals of the Roses, but is not generally credited with doing the amount of damage described by Mr. Burgess. The larvæ are usually found amongst the decayed portions of wood, &c., at the foot of trees; but they are also occasionally found in ants' nests. At the approach of winter they penetrate 2 ft. or 3 ft. into the ground, but do not acquire their full size till a space of about three years has elapsed. They then pass through the pupa condition, for which they form a cocoon of wood chips and other materials, which they glue together by a gummy secretion, and in which they secrete themselves. They appear as the perfect insect in the summer. The larva is a soft thick-bodied grub of a greyish white colour, bent in an arch-like manner, but which if straightened would measure about 1½ in. in length. It is narrowest towards the head, and gradually thickened posteriorly. They must be unusually plentiful in the neighbourhood of your correspondent, and the fact of their seeming increase is interesting.

2594 & 2597.—**Maggots in Carrots.**—The little white maggot referred to by "J. M. G.," and also by "Monaghan," as destroying Carrots is the larva of the carrot fly, Psylomyia rosæ. This larva, as described by Kollar, is "cylindrical, pointed anteriorly, like parchment, shining, smooth, bare, pale yellow; the anal joint is rounded, having posteriorly above two black, rather elevated, spiracular plates, the latter having a short point at the end." They are generally found near the extremity of the main root, and work upwards. Miss Ormerod, in a communication to the Entomological Society, recently gave some valuable information. She stated, "On the 19th of June I found the Carrots in my garden perishing under the worst attacks of Psylomyia rosæ that I ever met with. Instead of being simply limited to a number of larval borings towards the extremity of the root, the plants were in some cases killed, in others were destroyed fully half way up, &c., &c. It occured to me that a fluid application I was then experimenting with, known as 'Little's Soluble Phenyle,' of which the ingredients were stated to be a distillation of tar, similar to creosote, and pure oil, and which I had found injurious to insect life whilst beneficial to vegetation, might be of service; and after watering the plants for a few days with it in a dilute state, the application took effect thoroughly. In less than a fortnight the attack had ceased spreading, and some of the infested plants showed signs of recovery; in another week healthy foliage was showing, contrasting with the deep orange-coloured leaves characteristic of the insect attack to the root, and from that time till the 12th of August, when they were raised for examination, sacrificing good and bad together for comparison, they continued to grow luxuriantly with no return of attack of the rust fly. The insect would not be injurious to any other crop put in the same ground; on the other hand, an alteration of crop would deprive the larvæ of their food plant.—W. L. D.

2599.—**Marsh Sundew.**—Patches of the round-leaved Sundew (Drosera rotundifolia) are very pretty if cut out of the bog in which they grow, soil and all, and placed in an ornamental glass saucer covered with a hand-glass. The only treatment they require is for the soil to be kept moist. They are most interesting plants to watch, and at the time the argument was going through the papers as to whether the insects crushed in their leaves benefited them in any way, large quantities were sold in the London streets. In their native haunts, as on the Mosses round Manchester, and notably especially in Studland Bay, Dorsetshire, where they cover larger spaces of ground, in company with longifolia and anglica (equally interesting, but less compact and delicate), they are beautiful beyond description. I do not know if it is generally known what a rare flora is to be found throughout the Isle of Purbeck, at Swanage, Studland, Corfe, and so on. We all know how lovely the wild flowers of Devon are, but those of Dorset are seldom mentioned in books, and I for one had no idea of their abundance until by a most lucky chance I found myself in their midst. In one day's rambling picnic I gathered 150 species, not searching for them in any way, merely picking them as I passed along.—Mark.

Woolly-headed Thistle (Carduus eriophorus).

2626.—**Potatoes Diseased.**—If it is the Potato blight that troubles you—and from your description of the crop it seems to be—it would take no small amount of knowledge to tell you the cause. Although for the past thirty years almost all the scientific and practical horticulturists and agriculturists of Europe have been puzzling their brains to discover the cause of the Potato blight, the problem is yet unsolved. All we know is that the disease is a species of mildew brought on by atmospheric influence—we know not how—and fostered and greatly increased by moisture or dampness of any kind, and consequently that a loose dry soil with a good aspect is best adapted for Potato growing. We know, too, that some kinds of Potatoes which are of a sub-shrubby nature, or which have a crisp, leathery foliage, are less liable to be destroyed by disease than others of a softer nature; and hence that any manure containing phosphates or other substances that would induce a hardy, shrubby growth is the one best adapted for the Potato. Perhaps your land is badly drained, or is a stiff wet clay, which, though it answers for Cabbage and Onions very well, is not at all suitable for Potatoes. If it is undrained, your best way would be to plant the Potatoes on the Irish or lay-bed system; of course if you could have it well drained you should see to it. If your land is wet clay you must, by a careful and constant admixture of coal ashes, lime, sand, &c., lighten it. You did not tell us what sorts of Potatoes you grow, or how you plant them. The following are good, and not very liable to take disease. For first crop—American Early Rose, very productive and good; American Early Snowflake, a fine well flavoured Potato; Grampian, a good hardy cropper; Excelsior, very early and good. Late sorts—Scotch Champion (this is certainly one of the best Potatoes, being productive, large and well flavoured; it should be planted 30 in. apart); Magum Bonum, a productive good sort, but on some lands of inferior quality; Patterson's Victoria, an old favourite; Schoolmaster, one of the best new sorts. If you plant these sorts and substitute the following manure for the rank dung you will find disease less prevalent amongst your Potatoes: Potato manure kanit 1 cwt., soot 1 cwt., sulphur 14 lb. If you cannot obtain kanit, use instead ½ cwt. of salt to 1 cwt. of soot.—D. J. Kane.

2632.—**Gardening in Town.**—At the present time in the new cemetery near Vyse Street (which is in the very heart of the jewellers' district) may be seen in bloom, of a very fair quality, Sweet Williams, Stocks, Pansies, Mignonette, Geraniums, Snapdragons, Lobelias, and several kinds of Lilies. I have also seen in the season Hyacinths, Tulips, Chrysanthemums,

and I might suggest also as an effective border either Thrift, Feverfew, or Candytuft. For climbers I would suggest for the north wall an Ivy, and for the south, Virginian Creeper or Clematis.—G. A. T.

2465.—**Frogs in Greenhouse.**—Frogs are of no value in a greenhouse for the purpose of destroying insects, and it is very doubtful if the toad's presence there is of any greater service. I had about a dozen of them in my greenhouse, thinking they would put an end to a very common pest, the woodlouse, and to my astonishment found them lying quite at home below the toads as a hiding-place. Smoking for air insects, dusting the floors with sulphur or Tobacco powder for ground insects, are the best and speediest methods, thus leaving the rather unpleasant service of Messrs. toad and puddock outside the walls of the greenhouse.—D. C.

2492.—**Grub in Carrots.**—My own opinion on this subject—a subject I have been compelled to give no little attention to—is that if the insect (Psylomyia rosæ) does once put in an appearance in the Carrot bed remedies are little better than useless. However, if the soil be deficient of that property so conducive to the health of this root, great good will be got by applying such in the form of road scrapings, rotten leaves, and all manner of vegetable refuse when preparing for next year's crop Carrot ground should be well trenched, in order that the roots may make an easy passage downward. Salt is the best antidote I know for the worm (and have tried not a few), and can be applied with safety.—D. C.

2506.—**Drying Aquatic Plants.**—Try the same plan as is usually adopted in the case of seaweeds. Float the plant on the surface of water; underneath it place a sheet of paper, not bibulous, and then carefully lift this out with the plant spread upon it. The superfluous moisture may be allowed to drain off, and then the plant, with the paper support, can be placed in the drying paper and press. After the leaves and other parts have become dry they can be moved as easily as those of other plants without any fear of them curling. I send this reply (although I have not had much experience in preserving these kinds of plants) because none has yet appeared.—A. S. W.

2573.—**Ants in Gardens.**—Pouring a little petroleum upon their nest every few days will effectually kill or banish ants. Benzoline is also very effective. Or invert a large empty flower-pot with the hole stopped. The ants will build up into the pot, when it may be lifted with a shovel and dropped into a vessel of water. Camphor water is another good remedy. (Quin's "Garden Receipts.")—Eupteris.

2553.—**Sowing Pansy Seed.**—Sow your seed at once in either a pot or seed-pan in a mixture of turfy loam, leaf-soil, and sand, finely sifted. Plunge in a moderate hotbed and cover with a pane of glass. When the seeds are large enough to handle pot off into 3-in. pots, placing them in a cool frame or greenhouse to stand the winter.—J. C. Burford.

2509.—**Hoya carnosa.**—You should pot at once, or, what is still better, plant in a greenhouse border. Pot in a mixture of good turfy loam, adding a little leaf-mould and sand. This plant, if well drained and in good health, stands a good deal of feeding.—D. C.

2501.—**Roses not Blooming.**—Scoop out a quantity of the soil around the roots without disturbing them; then put in a barrow-load of good turf well rotted and mixed with manure. Make sure that the roots are not in a saturated state.—D. C.

2508.—**To make Putty.**—Take linseed oil, pour upon the whitening, adding a small quantity of turpentine; stir until it arrives at the consistency of a thick paste. Wet your hands in water and knead the paste, and if you find it too soft, roll in some of your whitening, the same as a baker kneads dough.—D. C.

2510.—**Arbutus.**—Dig out a good sized hole; fill up with peat (of course leaving room for your plant in the centre). Beat well. The peat, if not very good, would require a good dash of sand. Be sure that you beat firm.—D. C.

2524.—**Geraniums not Blooming.**—Does your plants run all to wood and foliage? if so, do not give so much stimulant. See that your pot ones are not kept too wet, for Geraniums like rather to be on the dry side. If you wish large trusses to appear, pot in a rather poor soil, but porous; feed strongly with bone dust. Give plenty of air day and night. Keep the atmosphere of the house on the dry side when the plants are in flower.—D. C.

2500.—**Flowers for Button-hole.**—It is taste that is most required in this more than a certain variety of flowers. For my own part I can hardly see a neater button-hole than a small piece of a fancy Pelargonium laid upon a frond of Adiantum. Heliotropes, Statices, Begonias, &c., look very tasty as button-holes.—D. C.

2525.—**Fern Fronds Withering.**—It has probably had too much water, or the drainage may not be good.—Eupteris.

2621.—**Onion Maggots.**—Dissolve quarter of a pound of common salt in two gallons of lime water, and give your Onion bed a good sprinkling with the mixture late in the evening. You will find this an effectual remedy. Tar-water, to be obtained at any gasworks, is a good preventive of maggot. It should be applied to the ground for some time previous to sowing. It is also a good fertiliser.—L. J. Kane.

2517.—**Wireworms in Gardens.**—These are the larvæ of the click beetle. Insert slices of Carrots, Potatoes, or Lettuce stems about 1 in. below the surface of the soil, looking over them every day. When practicable, loosen the surface freely, as birds of all kinds are excessively fond of them. (From Quin's "Garden Receipts.")—Eupteris.

2532.—**Blight on Ferns.**—Lay the pot on its side and syringe the plant, or try Tobacco smoke.—Eupteris.

2631.—**Cut Roses in Water.**—Try putting a small quantity of sal-ammoniac or charcoal in the water.—Eupteris.

2506.—**To Dry Aquatic Plants.**—Take a tray or shallow dish large enough to hold the specimen, spread a sheet of thin paper on it, fill up with clean water; put in the specimen, arrange in a natural manner, cover with another sheet, gently tilt the dish to allow the water to run off without disturbing the specimen; lift both sheets and dry as usual.—J. Makin, *Manchester.*

2685.—**Hydrangeas after Flowering.**—How should a Hydrangea in pot going out of bloom be treated now? Several young shoots have sprung from the roots; should these be divided and potted separately? and when may they be expected to blossom?—Emoorg. [Cut down the stems on which flowers have been produced, and either shake out the soil from the roots and repot, or take cuttings from the young shoots. They should flower next summer.]

2686.—**Manure Water for Wellingtonias.**—*A Subscriber.*—The fact of the Wellingtonia thriving in summer and looking sickly in winter proves that it wants no manure water, but that it wants better drainage during winter. If you could dig a trench 3 ft. deep all round away from the roots, and fill it with brick rubbish, much good might be done.

2687.—**Moss Roses on Walls.**—I have a Moss Rose dwarf trained up a wall, and it has reached the height of 15 ft. or more, and spread as much as that at the side, and up to last year was an admirable tree, but now three-quarters or more is dead wood, and looks very shabby. Shall I cut it all back to the bottom, or cut out all dead wood and leave the rest? [Cut out all dead wood; the plant probably suffered from drought during March, when so many Rose trees were lost.]

2688.—**Rose not Flowering.**—I have a Rose tree which for two years has not flowered, although it did so profusely before that time. The standard has got very thick and knotty, but no Brier has grown from it. It was cut back hard in March or April, and has made a very thick and abundant growth. What can be done with it to make it useful? [Thin out the weak shoots now, so as to let light and sun into the head; and in spring only shorten back a few of the longest shoots, but thin out well.]

2689.—**American Aloes.**—I have in pots some green and variegated American Aloes, and shall be obliged for information respecting their general treatment, and whether they can be kept out-of-doors during the winter? [These require good drainage, a loose compost, such as turfy loam, sand, old mortar, and brick rubbish mixed, and enough water to keep the soil in a moist state. They require the protection of a glasshouse in winter.]

2690.—**Cold Greenhouse and Paraffin Stove.**—Some time ago I was told in reply to a query that if a paraffin stove was placed outside the greenhouse instead of in all would be well. One or two besides myself asked what was meant by this, and if placed outside how the heat would reach the plants, but no answer has been given. Will some one kindly explain?—A. B. C. [Hot-water pipes, of course, must be attached to the boiler over the stove.]

2691.—**Arum Lilies after Flowering.**—*A. B. C.*—Place them outside for a week or two and keep them rather dry; the leaves will then die down and may be cut off, and young growths will appear. Shake the soil from the roots, and divide them if necessary, and plant out in a sunny situation in deep well-manured soil. Lift and pot in the autumn or repot at once, and plunge the pots in ashes, taking them indoors in autumn. Give plenty of water during dry weather.

2692.—**Trollius.**—*W. H. T.*—These are neither expensive nor difficult to obtain. Apply to any nurseryman who makes hardy plants a specialty, such as Mr. Ware, Hale Farm, Tottenham; Messrs. Backhouse & Sons, York; Dickson & Co., Waterloo Place, Edinburgh, &c.

2693.—**Planting Raspberries.**—What is the proper time to transplant Raspberry canes, and what kind of ground is best?—P. H. [As soon as the leaves have all fallen. Light, rich, well-drained soil is necessary for the successful culture of Raspberries.]

2694.—**The Gooseberry Caterpillar.**—These pests generally start upon the new shoots of the year, and, working to the end, completely clear it of leaves. As this is the bearing wood for next year, does it kill the shoot or otherwise prevent its bearing next year?—W. [It certainly does not add to the fruit-bearing capacity of the trees, neither does it entirely render them unfruitful in the coming year. If trees are yearly allowed to be stripped by caterpillars they must decline in health sooner or later.]

2695.—**How to Mix Paraffin with Water.**—How can I mix paraffin with water? It swims on the top of the water, and destroys the foliage as well as the green fly?—F. [Draw the syringe full of water several times and eject it back into the water-can. Do this frequently while you are using the liquid.]

2696.—**The Flowers of a Salvia patens Dropping Off.**—These drop off before they are much more than half developed. Can you suggest a cause for this?—G. M. S.? [Perhaps they are dry at the root.]

2697.—**Dielytra spectabilis.**—Which is the best way to preserve my plants during the winter?—Woolloomooloo. [If in pots, place them in a frame from which frost is excluded, or even in a dry cellar, till they begin to grow, then put them in a window. If out-of-doors, cover the roots 3 in. or 4 in. deep with coal ashes.]

2698.—**Watering Myrtles.**—Does a Myrtle require watering every day? I keep it in a small conservatory.—R. A. M. [If it is dry every day it wants watering every day. Surely you can tell when soil is dry or wet. When you water it give it enough to soak the whole of the soil thoroughly through, and when you observe it getting dry water it again. You may also easily ascertain when a plant is dry by tapping the side of the pot with the knuckles; if a dull sound is given off, it is wet; if a hollow sound, dry. Experiment on a very dry plant and one just watered.]

2699.—**Mushrooms on Lawns.**—I have a plot of Grass which, ten or twelve years ago, was laid down for croquet, but as it is not so used now, and I do not wish to break it up, is there any chance of getting any Mushrooms from it?—W. [In dry positions and in loamy soils Mushrooms may be grown in open situations on lawns. Take a sharp spade and force it into the ground 2 in. or 3 in., withdrawing it without disturbing the Grass; then place it at one end of and at right angles with the first incision and force it into the soil in a similar manner, bending the handle backwards until an opening is made sufficiently large to admit a piece of spawn about 1 in. square. When this is inserted the spade is withdrawn, the turf allowed to fall in its place and be firmly trodden down with the foot; the latter is an important part of the operation. The months of July and August are suitable for performing this operation; the pieces of spawn may be inserted about 3 ft. apart. In soils and situations which are naturally wet this plan would not be successful. When the spawn is found abundantly in an old Mushroom bed, or runs freely through an old heap of stable manure, is the time to secure it for the purpose; or it may be bought in the usual way in the brick form, and broken into suitable-sized pieces, as mentioned above.]

2700.—**Planting Ivy.**—I have a bed made of drain tiles (two tiers), and want to grow Ivy so as to cover them. Which is the best quick-growing Ivy to get? Where can I get it? and when plant it?—R. A. M. [The Irish Ivy will grow the quickest. Get in pots at any good nursery, and plant it in autumn or spring.]

2701.—**Raspberry Canes.**—Am I correct in assuming that suckers thrown up from the root one year produce fruit the next, and then die?—Framboise. [The young suckers bear the fruit the following year. Those that have borne fruit do not always die, but they should be cut out to make room for the young canes.]

2702.—**Azalea Leaves Turning Brown.**—*J. M.*—The leaves are covered with thrips. Lay the plants on their sides, and well syringe them with strong Tobacco water. Place them in a partially shady situation out-of-doors, placing them on slates to prevent worms entering the pots. Syringe them every afternoon with clean water, and repeat the Tobacco water twice a week for two or three weeks.

2703.—**Budding on Different Kinds of Stocks.**—*Enoch.*—Buds or grafts will never succeed on any stock except both scion and stock belong to the same Natural Order. See "Cultivated Plants," by F. W. Burbidge. London: Blackwood & Son.

2704.—**Geranium Cuttings.**—*T. C.*—These strike readily at this time of the year, either in pots or in the open ground. Take cuttings about 4 in. long, and cut them with a sharp knife close below a joint, removing the bottom leaves. Geraniums may be struck from leaves, but such a process is only resorted to in particular cases.

2705.—**Nicotiana longiflora.**—*Vicar.*—This is an herbaceous plant, but is best treated as an annual. Sow in February or March in heat. Prick off the plants, and pot them on as becomes necessary. Plant out-of-doors in deep rich soil, and in a sheltered situation in June. They will flower in August and September.

2703.—**Coat Flowers.**—I have a greenhouse 20 ft. by 9 ft., and I want to devote the whole of it to coat flowers. Will any one help me a little as regards kinds to grow, &c.? The house gets the sun all day, but the country is very cold, but I am well provided with a good boiler, &c., so that I can get plenty of heat.—B. B. B.

2707.—**Roses for Peckham.**—Name two Roses (a Tea and crimson) that will bloom well in Peckham; situation fairly open.—H. P. C. [Gloire de Dijon and General Jacqueminot.]

2708.—**Mule Pinks and Clove Carnations.**—Can Clove Carnations and Mule Pinks be propagated by cuttings as well as layers? if so, kindly give some instructions as to best time and mode of doing it.—C. W. [Take cuttings in August or September about 2 in. long, cut close under a joint, and split the joint across the bottom with a sharp knife. Insert in sandy soil round the sides of small pots, and plunge in ashes in a frame kept close and shady.]

2709.—**Brompton Stocks.**—Kindly explain the treatment of Brompton Stocks from seed onwards; and will they stand winter in the open without protection?—H. P. C. [Prick them 1 in. apart into shallow boxes of sandy loam when large enough. Place them in a sunny position in the open air or in a frame, taking the lights off except in stormy weather. Pot into 3-in. pots when they become too thick in the boxes, and by the end of September a portion may be planted out, keeping the remainder in a cold frame all winter to plant out in spring should those planted out suffer from the weather.]

2710.—**Early Vines.**—My Vines were started last year the first week in November, and the Grapes were all cut by the middle of May. Now the leaves are nearly all off, and some of the Vines are starting again—some of the fruit-buds and laterals. Should they be pruned at

once? They have had plenty of ventilation, are planted inside, and have not been lowered from the roof. Which would be the best way to manage them?—DEVONIAN. [Prune ripened shoots which bore the fruit back about half their length, and throw the house open night and day.]

2711.—**Propagating Carnations.**—What is the proper time to make cuttings of Carnations?—C. C. [From now till September, or in the spring. A frame is best to strike them in. Use yellow loam and silver sand made firm with the spade or foot.]

2712.—**Keeping Plants in Winter.**—How can I keep some roots during the winter for the next season's flowering, more especially the Geranium, Indian Pink, and Pansy?—S. C. M. [Geraniums may be potted in September and wintered in the window of a warm room. Pansies and Indian Pinks are hardy, and require no such protection.

2713.—**Crassula and Kalosanthes.**—*Crazula.*—The Kalosanthes, sometimes called Rochea, belongs to a genus of Crassulaceæ. K. coccinea and its varieties are identical with Crassula coccinea and its varieties.

Labelling Plants.—*H. E. H.*—You will have no difficulty in keeping your Geraniums separate if you use wooden labels painted white and written with blacklead pencil.

Pansy Cuttings.—*H. E. H.*—These strike readily at this time of year, and will succeed well in a box of moist, sandy soil.

Pansies in Winter.—*A. G. P.*—Pansies are among the most hardy of plants, and need no protection in winter.

Heating Greenhouses and Pits.—*F. H., Leicester.*—We cannot advise you from your description. You had better consult some horticultural builder, or a good gardener in your neighbourhood, or send us a plan.

Edelweiss.—*M. M.*—Apply to Mr. Ware, Hale Farm Nurseries, Tottenham, or Messrs. E. G. Henderson & Son, Pine-apple Nursery, Edgware Road, London.

Mildew on Clematis.—*M. M.*—Well syringe them with soft water in which has been placed a little flour of sulphur.

Greenhouse Plants.—*F. H.*—"Stove and Greenhouse Plants," by B. S. Williams, from the author, Victoria Nurseries, Upper Holloway, London, or from our office.

Structure of Flowers.—*H. P. C.*—Procure "Cook's Manual of Structural Botany," price 1s 2d., post free from our office.

Daddy-longlegs.—*H. B.*—Tipula oleracea.

A Puzzled One.—We really cannot understand your questions. Kindly write them separately and concisely.

A. S. W.—We shall receive your communication with pleasure.

Coal Miner.—If you will ask your questions according to our rules, viz., write each on a separate piece of paper, we will gladly attend to them, but we must decline to answer questions respecting bees, poultry, Strawberries, and Rhubarb all rolled into one.

Names of Plants.—*S. Pearson.*—Echeveria secunda. The offsets may be taken off now or in autumn; an attic is better than a garden frame for them in winter, damp being their greatest enemy.——*R. M.*—We cannot name a Cabbage without seeing it.——*St. R. B.*—Deutzia scabra.——*C. M. S.*——The common Corn Marigold, Chrysanthemum segetum, Chrysanthemum Etoile d'Or may be obtained from Mr. Howard, Nurseryman, Southgate, London, N.——*F. A. B.*—1, Limnanthes Douglasi; 2, Eschscholtzia crocea; 3, Evening Primrose (Œnothera riparia).——*C. J. P.*—It would be impossible for any one to name Begonias (unless they are species or very old kinds), for a packet of seed will sometimes bring fifty or more different kinds.

QUERIES.

2714.—**Clematis Dying at the Point.**—Two Clematises (Rubella and Tunbridgiensis) were planted here last March against an arch and have grown, though not with very strong shoots, to the height of about 7 ft., and there are several buds on them. Within the last few weeks the points of many of the shoots and some of the buds have gone off, getting black at the tips, and presenting such an appearance that one would think they had been touched by frost if there had been a chance of it. I cannot see any sign of a caterpillar or blight, and shall be much obliged if any one can suggest what the plants may be suffering from, and what would stop the mischief.—RUS IN URBE.

2715.—**Melons Rotting.**—What is the cause of Melons rotting at the ends when they reach the size of a cricket ball? They are grown in a cool frame, and the plants are doing excellently.—TREDEGAR.

2716.—**My Failures.**—In gardening, as in all else, we learn by comparing our experience with that of others and I have succeeded in making a plant flourish when the gardener has pronounced that "it will never do with us" simply by change of aspect, situation, or a special preparation of soil, and there is always great pleasure in overcoming a difficulty. The following plants have disappointed me this summer in the herbaceous border, but I shall be glad to try them again if I can get hints for their more successful culture. Meconopsis Wallichi and M. nepalensis, good plants last year, stood the winter well, flowered profusely, and have both died away; so has Papaver nudicaule, and a plant of it did the same last summer, which I then attributed to the wet season. Are these Poppies and Poppyworts only biennials? Two plants of the rare Polemonium confertum wintered and grew fairly, and have died away without apparent cause. Has any one succeeded in making this plant produce immense clusters of deep brilliant blue flowers on stout stems 6 in. in height, as described in catalogues? if so, kindly state soil, aspect, and mode of cultivation. Other Polemoniums do well here; the upper soil is light. Schyzostylis coccinea grows, but never flowers, neither does Ourisia coccinea. Iris cristata and I. iberica only exist. Saxifraga Burseriana looks very sickly. Hypericum Burseri and H. olympicum have died; is the soil too hot, or too full of lime? Any hints from those in whose gardens any of the above really flourish will greatly oblige.—H. C.

2717.—**Chemical Manure.**—Will "F. W. P." kindly say where to purchase sulphate of soda and crude sulphate of ammonia, and the price of both?—R. A. M.

2718.—**Ferns for Shady Corner.**—What kind of Ferns are suitable for growing under glass in a shady corner which the sun does not reach? Also what kind of plants will be best to fill up with, more particularly creepers and hanging plants?—J. W.

2719.—**Rose Eaten by Insects.**—Can any one say what it is that eats half through the young shoots of Tea Roses?—H. B.

2720.—**Thistles in Meadows.**—Can any one tell me how to get rid of Thistles from a meadow? I have five acres nearly covered with them?—TASMANIA.

2721.—**Cucumbers Dying.**—Can any reader inform me what is the cause of my Cucumbers suddenly dying off? In a large house, with sixty plants, which, a month ago, were in a fine healthy condition, and bearing splendid fruit, now are all dead. The roots are all cankered and clubbed. I shall be obliged by any information on the subject; it is a serious loss to me.—P.

2722.—**Rusty Water.**—I have just finished a new house, and no water being obtainable on the site, I was obliged to sink a well about 300 yards distant, and bring it here by means of 1-in. iron tubing, but the water is so discoloured by rust, that we are afraid to drink it. I should feel obliged if any one could furnish me with a remedy (not too expensive), also state if it is unhealthy to drink, or if it would be better to let it run into the soft water tank and pump it up mixed, as I have a large tank for soft water.—SUBSCRIBER.

2723.—**Plants for Greenhouse Walls.**—I am about to wire the back of a house, kept at about 60° to 70° to grow plants behind, as lately recommended in GARDENING, and should be glad of a list of plants suitable to grow in that way and situation.—E. T. B.

2724.—**Cactus turning Brown.**—Can any one tell me the reason why Cactus speciosissima, as I am told is the name (the prickly kind), becomes brown, bare, and cankery towards the root?—C. T.

2725.—**Orange Trees and Jessamines not Blooming.**—Can any one account for healthy plants of Cape Jessamine and Orange tree not blooming? They make strong shoots, but the Jessamine especially is most flourishing without any sign of flower; it was in good bloom when placed in the conservatory three years since. The conservatory is principally cast, and only heated sufficiently to keep out frost; it is high, and gets a little sun from the south at mid-day.—LITTLE COOMBE.

2726.—**Bedding Violas.**—Which are positively the best bedding Violas: blue, yellow, or white?—G. G. K.

2727.—**Edging Plants.**—I have a large lawn round which I put Pyrethrums every year, and it looks very well; but as I am very fond of hardy plants, I thought there might be some such plant that would look as well as the Pyrethrum and not require raising from seed each year. Can any one name me any such hardy plant?—G. G. K.

2728.—**Violas for Continuous Blooming.**—Is it best in order to secure a constant display of bloom to plant the bedding Violas fresh every autumn from cuttings just rooted, so that they may bloom in early spring and all through the summer and winter?—G. G. K.

2729.—**Sea-weeds.**—Will any correspondent favour me with some information as to how I may best prepare, lay, or press fine and other sea-weeds? Having a few, and still desirous of such a collection, would be glad to correspond with any one that would oblige with specimens.—JOS. NEWTON, 55, *Hill Street, Ashton-under-Lyne.*

2730.—**Uses of Ash Berries.**—I have many berries of the Mountain Ash in my garden. Is it possible to make use of them for jelly (I have heard of Mountain Ash jelly), or for decorations at Christmas?—A. B. A.

2731.—**Spots on Rose Leaves.**—Can any reader tell me why one Rose in my garden should have large black spots on the leaves? All the rest are perfectly healthy. What can be done to cure this? The Rose is Edouard Morren, and it has flowered beautifully.—M. M. B.

2732.—**Cypripedium insignis.**—Will some reader kindly give me the general treatment of this plant?—J. R.

2733.—**Club in Cabbages.**—Can any correspondent inform me what is the cause of club in all the Brassica tribe, and the best remedy? Portions of the garden have been in cultivation from one to nine years, deeply dug, and properly manured. The plants club just the same on recently cultivated land as on the older part. It is not only a plant or two clubbed here and there, but whole breadths.—INQUIRER.

2734.—**Cinerarias Dying Off.**—What is the cause and remedy of Cinerarias, seemingly in good health, dropping their leaves suddenly and dying off? Mine are in a cold frame at the back of a north wall, on a bed of ashes, but have already lost several through the above cause.—INQUIRER.

2735.—**Cucumbers Dying Off.**—Will any correspondent kindly inform me the reason of and remedy for my Cucumbers dying off? They come on healthy and well until the fruit gets from 4 in. to 5 in. in length and is thickening, then they wither off. I have one plant in a frame 6 ft. by 3 ft., and give plenty of air and water.—W. M. C.

2736.—**Cement for Glass.**—I have made some cathedral glass fanlights and windows, but find that the glass rattles in the lead to an unpleasant degree at the least shake. There is some kind of cement or putty used in the trade which sets very hard, and not only fixes the glass, but also strengthens the whole frame. Can any one tell me what cement this is, and where to get or how to make it?—S. H. W.

2737.—**Propagating Roses.**—Can any reader inform me of the best way of propagating Roses of all sorts?—J. C., *Burford.*

2738.—**Evergreens for Covering Rustic Work.**—I am erecting some rustic work on a lawn to which my fowls have access. Can any reader suggest some evergreens (quick growing) that poultry will not eat to run over the same?—W. N. G.

2739.—**Treatment of Cyclamens.**—I have a fine lot of Cyclamens which this season have made little foliage, scarce any bloom, many of them several years old, but only made a few leaves. I have them now in a cold frame; several of them died off; some again are making new foliage. How shall I treat them?—C. P.

2740.—**Vegetable Marrows.**—My Vegetable Marrows produce none but male flowers, and one or two have come double. Can any of your readers give a reason? and is there any remedy? I have them on a bed of manure (horse litter), fresh the beginning of the year, and under glass.—C. H. S.

2741.—**Climbing Roses.**—"Mark," who writes on climbing Roses, GARDENING, July 17, 1880 (p. 233), will much oblige "A." if he will say by name that Rose he means which has flowered so well in clusters, and which has surpassed Chinas, Teas, &c.? also what locality he writes from?—D. C. A.

2742.—**Storing Potatoes and Cropping a Garden.**—Will anyone inform me how to store and save Potatoes for seed for next spring? I would also be thankful for advice as to the best manner of planting my garden, which is about half an acre; what crops should be planted early in the spring; and what crops should follow, &c. I may say my land is upon a hill. I have a frame 6 ft. by 3 ft., and another frame 6 ft. square. How can I best utilise these for the above garden requisites? I have never worked a piece of ground before, so that I am totally ignorant how to act.—ALPHONSO.

2743.—**Wintering Plants.**—Will some one kindly inform me what plants I can winter in a cold frame with turf sides 1 ft. thick, and a dry bottom? I want the plants for window decoration. I have no means of keeping out frost by heat, but I think with care I can keep the frost out. My plants are doing well at present in it, and I have a great objection to keeping them in the windows all winter, as they get drawn all to the front, and then they look very unsightly. My stock consists of Fuchsias, Pelargoniums, Geraniums, Petunias, Heliotropes, and hardy Ferns, which I should like to keep alive all the winter. Names of any other plants that would do for window decoration would be thankfully received. I have some seedling Primulas, Cinerarias, and Calceolarias doing very well. Can I keep the two last named until they show bloom in the frame? or must I take them out and put them in the house window on the first appearance of frost?—J. T. D

2744.—**Cyclamens not Growing.**—Last year I raised these from seed and they have formed small corms, but have only one or two leaves on each, and do not make any further growth. I shall be glad to receive any information as to treatment necessary; they were repotted in the early part of this year.—A. H.

2745.—**Moss on Gravel.**—I have a gravelled carriage drive well gravelled two years ago; it is in shade from Laurels and Laburnums. How can I keep a fine green Moss away; it gets constantly covered?—T. V.

2746.—**Herbarium Specimens.**—Is it considered allowable to procure specimens of wild flowers for a herbarium from amongst the "weeds" in a garden? or should they be obtained only from fields, road-sides, &c.?—EUPTERIS.

2747.—**Preservative Solution for Herbarium.**—Corrosive sublimate, 1 drachm, methylated spirit 4 fluid ounces. Is there any need to add carbolic acid? and if so, what is the smallest quantity that would be effectual?—EUPTERIS.

2748.—**Furnishing a Plant Case.**—I am very fond of plants, but am unable to have a house of my own, so think of going in for a plant case. Will some one kindly tell me about the size that would be manageable, depth of soil box, hints as to ventilation, &c.? also please give me a list of plants fit for same, and number suited to the size you may name. I want good plants; out of the common; not Ferns, bulbs, or deciduous ones, but something that will be always there.—R.

2749.—**Annual Perennials, &c., to be Sown Now.**—I have had a heated greenhouse built, which is nearly completed, and have, therefore, facility for preserving seedlings this winter. I saw in one part of Vol. I. it was best to sow annuals, biennials, and perennials in the autumn instead of waiting till spring. Will some one kindly name a few good kinds of each? also a few good florist flowers and edging plants, such as Iresine, Echeverias, Amaranthus, &c.—BEGINNER.

2750.—**Inferior Pelargonium Blooms.**—I cannot get a good truss of bloom of either Pelargonium or Geranium of any sort. The trusses begin to go bad in the centre before the bloom is half up; they seem to damp off in the centre. What is the cause, they have plenty of light and air?—A. B. T.

2751.—**Geraniums Turning Yellow.**—About a fortnight ago I had a beautiful Pelargonium given to me, which I placed in the window (inside the room) as near the glass as I could get it, and gave all the air I could; it appeared to do very well for a few days, and then the leaves began to turn yellow. Thinking it wanted more water, I gave it some every second day, but with no improvement in the plant; so I thought it must want more air, and I put it outside the window, but it gradually gets worse. I turned it out to-day; the drainage seemed all right, but the roots were rather black. What is the matter with it? and what can I do to save it?—A LEARNER.

NATIONAL CARNATION AND PICOTEE SOCIETY.

THE annual show of this society, which took place at South Kensington, July 27, was by many pronounced a good one. The flowers were fairly numerous and of good quality from a florist's point of view. For our part, we give the preference to a large collection of border Carnations shown by Messrs. Veitch & Sons, of Chelsea. This collection was instructive, as showing that really handsome blooms may be obtained in the open air, even planted within the reach of London smoke, and blooms that for any purpose save that of competing with the manipulated flowers of the florist are such as any one with a taste for natural flowers would be delighted with. The following are a few of the kinds shown in the collection alluded to, viz.: Princess Alice, white; Lord Rosebery, rose; Fire-eater, flame colour; Elysian Beauty, delicate pink; Old Crimson Clove; Purple Prince, purple; Susan Askey, white; Crimson Pet, deep crimson. Two yellow Picotees shown by Mr. Ware, of Tottenham, named respectively Miss Wheeler and Chromatella, are well worth culture. In regard to Carnations and Picotees grown in pots, there were some excellent examples shown, but they were, as usual, made hideous by the blooms being wired and collared, and made to stare at one like a "Bones" in the Christy Minstrels. A society of this kind should do much good in promoting the culture of those popular flowers, the Carnations, but this we are afraid it will never do until prizes are offered for flowers grown in the open air and shown in their natural form. This would give amateur and cottage gardeners an opportunity of competing and obtaining prizes which are now swept away wholesale by about half-a-dozen growers (one taking as many as five prizes in one class) experienced in the art of what we call spoiling the flowers, but which they call "dressing."

THE HOUSEHOLD.

HOW TO MAKE SALAD.

THE materials must be secured fresh, and not be too numerous and diverse, must be well cleansed and washed without handling, and all water removed as far as possible. It should be made immediately before the meal, and be kept cool until wanted. Very few servants can be trusted to execute the simple details involved in cross-cutting the Lettuce, Endive, or what not, but two or three times in a roomy salad-bowl; in placing one salt-spoonful of salt and half that quantity of pepper in a table-spoon, which is to be filled three times consecutively with the best fresh olive oil, stirring each briskly until the condiments have been thoroughly mixed, and at the same time distributed over the salad. This is next to be tossed well, but lightly, until every portion glistens, scattering meantime a little finely-chopped fresh Tarragon and Chervil, with a few atoms of Chives over the whole. Lastly, but only immediately before serving, one small table-spoonful of mild French or Italian wine-vinegar is to be sprinkled over all, followed by another tossing of the salad. The uncooked Tomato, itself the prince of salads, may be sliced and similarly treated for separate service, or added to the former, equally for taste and appearance.

But there is another form of salad which is always available, and welcome, too, in any season of the year, viz., the salad of cold boiled table vegetables. An excellent basis may be made of cooked French Beans, dressed as directed in the previous paragraph; for this purpose those preserved in tins may be used; greatly inferior as these are when served hot to the fresh *haricots verts*, they are very acceptable as salad in winter and early spring. The preserved green Haricots *(flageolets)*, similarly treated and added in equal proportion, with a garnish of sliced Carrot, Beetroot, or Tomato, may be arranged not only as a most savoury and wholesome, but even as an elegant dish. Cold boiled Potatoes, Carrots, Turnips, Broad Beans, Peas, Cauliflower, and other greens may all be employed thus, combined and garnished according to the maker's taste, which there is abundant opportunity for displaying. In all cases such salads should be kept very cool, and be dressed immediately before serving in warm weather.—SIR HENRY THOMPSON, *Food and Feeding*.

POULTRY.

Overcrowding Poultry.—Now is the time when nearly all poultry breeders are troubled with a greater number of birds than they can conveniently and comfortably find accommodation for. The old birds are mostly still laying, and there is no wish to part with them just yet, while the chickens, which a short time since occupied very little room, are now growing fast, and, being numerous, they need increased accommodation, and the difficulty is to know what to do. Overcrowding is one of the greatest mistakes a breeder can make, no matter whether cattle, fowls, or small birds are kept. All kinds of disease and sickness are produced, and the birds soon begin to look unhealthy. Their plumage gets soiled and bedraggled, and they have a most miserable and wretched appearance. Besides this, those which live soon stop growing and become stunted and weedy specimens. If a breeder has more birds than he can properly and conveniently keep at any time, he should at once commence either to kill or sell some. At this time the inferior and imperfect or wustrel birds may be killed to make room for the better birds. We are convinced, no matter whether poultry are kept for exhibition or merely for domestic use, the inferior specimens should be got rid of as early as their imperfections become visible. It is no use keeping such birds, as they never pay for their food, and they deprive the better and more promising specimens of the care and attention they so much need. We therefore advise all breeders to kill the wustrels. Keep down the number of your birds, for remember the chickens will still require more room as they get bigger. Dispose of all hens that are over two years of age, and give all possible care and attention to the young birds to get them well forward before the winter months arrive.

AQUARIA.

Stocking an Aquarium.—Will "T. C.," who writes that an aquarium properly stocked will not need the water changing for a year, state what proportion of plants and fish should be in an aquarium—a propagating glass 13 in. in diameter—as the water in mine is now getting very thick? Will it clear itself?—CAMPION DAWSON.

—— "T. C." says that if the vessel or glass is properly stocked the water need not be changed above once in twelve months. Would "T. C." or any other reader kindly say what would be the proper stock for a 12-in. propagating glass? I have one that size containing at the present time two carp, one gold fish, three snails, and several bits of plants, not rooted, but sunk to the bottom, with about one dozen small stones. I keep it in the parlour window, which has a north-east aspect, but the sun is not allowed to shine on it; have had two fish die this last week, but cannot understand the cause. I change the water at least twice a week.—G. A. W.

—— *J. Smith.*—See back numbers of GARDENING, in which will be found much information on this subject.

Making an Aquarium.—*Gold Fish.*—We have published several articles on this subject quite recently

Making a Bell-glass Aquarium.—I have a bell-glass, 12 in. over, of which I wish to make a small aquarium. Will some one tell me how many gold fish, &c., to put in, and the best sorts of plants, and best way to place them? I wish to hang a quick bell-glass over the 12-in. one; this leaves a space open all round; must it be covered up? What food is best for fish?—T. B. T.

Gold Fish Dying.—I have for some years had some gold fish in a pond, which have grown and thriven well. Wishing to increase the number, I procured four small ones from Covent Garden, bringing them home in a regular fish-can, as before. Within four days three have died; these were all bright red; one that was dark is alive and well. I should be very glad if any one could tell me what can be the cause of their dying.—P. PHILLIPS.

—— Place a clean sprig of Box in the water, when, by continually rubbing through and against it, the fish will clean the offensive matter from their bodies.—HARRY MOULTON.

HOME PETS.

How to Keep Doves.—Will some one inform me how to keep doves, their food, habits, and requirements, &c., in a large cage.—J. S.

Scab in Rabbits.—I have a buck rabbit whose mouth and feet are covered with scabs. Can any one tell me of a remedy?—SON OF MAN.

Mopish Canary.—In GARDENING ILLUSTRATED, July 17, "Bluebell" asks about a mopish canary. It is to be feared this canary has asthma or consumption. If a sort of sneezing or croaking cough, it is the former. In either case give him light food, sweet Arrowroot biscuit pounded small, with bruised lump sugar or some sponge cake. Hard-boiled egg, chopped fine, and a very little maw seed, which, with the egg, give morning and evening, the biscuit, &c., any time during the day. Do not let him be without sand and fresh water, but not a bath. Rape and canary seed always. The window should only be open when the sun shines on the cage; do not allow the room to be shut up or close; be careful of a draught, keep him warm, and, if possible, in an equable temperature.—A. P.

Canary Losing its Feathers.—My canary appears to have lost some feathers on his shoulders; he is not moulting; is fed on canary (most), rape, occasionally hemp and maw seeds. He is kept clean, and has fresh food and water daily. Can any one give a reason for it?—HENRY PENNY.

Queen Parrots.—"E. M. H." wishes to know where he can get a queen parrot. He can get a very good one at Mr. A. H. Jamrach's, 218, East India Road, London. I got a pair in 1877, and they have been in an out-door aviary ever since. In 1878 they hatched three young birds, but reared only one of them, which is still in my possession, and which has stood the two last severe winters in an unheated aviary. About a month ago my queen again hatched three young birds, but only one survives, and this, I hope, they will rear. They make no nest, but lay their eggs on the bare ground, at least mine do. They are natives of Australia. If "E. M. H." ever passes through Boston I shall be happy to show him both the parents and the baby parrots.—W. M. COOPER, *Boston*.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, per doz.	0 4	0 6
Arum Lilies, ,,	4 0	6 0
Bouvardia, ,,	1 0	3 0
Carnations, doz. bunches	6 0	9 0
Carnations (Tree), per doz. blooms	1 0	3 0
Cornflower, doz. bun.	3 0	6 0
Eschscholtzia, ,,	2 0	6 0
Eucharis, doz. blooms	4 0	6 0
Ferns (various), doz. bun.	4 0	9 0
Fuchsia, ,,	4 0	6 0
Gardenia, doz. blooms	3 0	9 0
Heliotrope, doz. bun.	0 0	6 0
Iris, ,,	9 0	12 0
Mignonette, ,,	2 0	6 0
Myrtle, ,,	0 0	6 0
Pelargoniums (zonal), doz. bun.	3 0	6 0
Pelargoniums (large flower), ,,	6 0	12 0
Pelargoniums (double), ,,	6 0	12 0
Pelargoniums (Rose-scented leaf), doz. bun.	3 0	6 0
Pinks, doz. bun.	4 3	9 0
Roses, ,,	4 0	9 0
Stephanotis, doz. trusses	3 0	6 0
Sweet Peas, doz. bun.	3 0	6 0
Sweet Sultan, ,,	4 0	6
Tropæolums, ,,	1 0	3 0
White Lilies, ,,	18 0	30 0

Plants in Pots.

Arbor vitæ (golden), doz.	9 0	18 0
Arbor-vitæ (common), ,,	6 0	12 0
Arum Lilies, ,,	9 0	12 0
Adiantum cuneatum (Maiden-hair), pair	5 0	7 0
Adiantum cuneatum (ordinary), doz.	6 0	18 0
Begonias (flowering), ,,	6 0	12 0
Begonias (fine-foliaged), ,,	6 0	12 0
Bouvardias, doz.	12 0	18 0
Crotons, ,,	12 0	42 0
Dracæna (green), doz.	12 0	30 0
Dracæna (variegated), doz.	18 0	60 0
Euonymus, ,,	6 0	12 0
Euonymus (variegated) ,,	8 0	18 0
Ferns, doz.	6 0	18 0
Ferns (small), per box	3 0	5 0
Ficus elastica, doz.	18 0	60 0
Fuchsias, ,,	6 0	12 0
Gardenias, ,,	18 0	36 0
Mignonette, ,,	4 0	6 0
Nasturtiums, ,,	3 0	6 0
Palms (large), pair	15 0	42 0
Palms (small), doz.	18 0	60 0
Pelargoniums (fancy), doz.	9 0	24 0
Pelargoniums (scarlet), ,,	2 6	9 0
Pelargoniums (double), ,,	6 0	12 0
Selaginella denticulata, ,,	3 0	4 0

Fruit.

Apples, per bush. and bar.	9 0	30 0
Cobs and Filberts, 100 lb.	0 0	120 0
Currants, half-sieve	2 6	3 0
Gooseberries, ,,	2 6	3 0
Grapes (English), lb.	1 6	5 0
Lemons, box	30 0	35 0
Oranges, 100	8 0	16 0
Pine-apples (St. Michael's), each	5 0	15 0
Pine-apples (English), lb.	3 0	5 0
Strawberries	0 6	2 0

Vegetables.

Beans (French), per lb.	0 6	0 9
Cabbages, per tally	2 0	3 0
Carrots, doz. bun.	4 0	5 0
Carrots (new), bun.	0 4	0 6
Cauliflowers (each),	0 0	0 0
Celery, bun.	1 0	2 0
Corn Salad, half-sieve	0 0	2 0
Cucumbers, doz.	2 6	6 0
Endive, ,,	2 0	3 6
Garlic, lb.	0 0	0 0
Horseradish, bundle	3 0	6 0
Lettuce, score	0 4	0 10
Leeks, doz. bun.	1 6	3 0
Mint, ,,	4 0	6 0
Mustard or small Salad, doz. punnets	0 0	2 9
Mushrooms, pottle	1 3	1 2
Potatoes, per lb.	0 1	0 0
Parsley, doz. bun.	4 0	6 0
Radish, ,,	1 6	3 0
Spinach, bushel	0 0	2 0
Shallot, lb.	0 0	0 6
Turnips, doz. bun.	4 0	5 0
Watercresses, doz. bun.	0 9	1 0

GARDENING
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GARDENING IN THE LONDON PARKS.

DURING the next month the public parks will be at their gayest, and those wishing to make notes on plants should visit them during that period. Hyde Park, Battersea Park, and Victoria Park are those most worthy of a visit, but if time allows, Finsbury Park, Regent's Park, and Hampton Court may also be seen with advantage. We are pleased to note that a marked improvement has taken place in some of the London parks during the last few years by the introduction of hardy plants in the place of so many of the tender subjects formerly used. Hardy plants, such as the Gunnera scabra, figured on p. 281, the hardy Aralias, with their glossy-green Ivy-shaped leaves, the Tree of Heaven (Ailantus glandulosa), which forms spreading branches of light green-bronze-tinted leaves, if cut down each year, and the beautiful cut-leaved Sumachs are all taking the places to some extent of such tender plants as those figured on pages 282-3, which only endure for a few weeks in warm sheltered nooks and in exceptionally favourable summers. Tall Larkspurs, Phloxes, Pentstemons, Violas, hardy Fuchsias, &c., now occupy the places formerly allotted to glaring Pelargoniums and other tender plants, and in all the parks there seems at last to be some token of other plants being represented besides those that come under the much abused section called "bedding" plants, and we trust the day is not far distant when real beds and borders of thoroughly hardy plants, which give a profusion of bloom from February to Christmas, will be so arranged that possessors of small gardens and limited means may imitate them with advantage. At Victoria Park, where long borders exist, much has been done in this direction, but much yet remains to be done; but if we may be allowed to draw comparisons, this comparatively new park in the east of London is the most representative one as regards flower gardening of all the London parks. Carpet bedding, ribbon gardening, sub-tropical gardening are well represented, and hardy flower gardening is fast coming to the front, aud some of those crowded beds of Geraniums, Centaureas, Perillas, &c., on the left of the long walk will doubtless some day give way to noble clumps of Phloxes, Pæonies, Larkspurs, and other showy hardy plants. In the long border next the road we noticed a number of the hardy perennial double Sunflowers (Helianthus multiflorus fl.-pl.), Eschscholtzias, Verbena venosa, Snapdragons, Veronicas, Spiderworts (Tradescantias), Irises, Day and other Lilies, Statices, and other hardy plants, which, with a few Sweet Peas and other annuals intermixed, make a display long before the flower beds proper are planted and long after they are cleared.

LONDON PUBLIC GARDENS: VIEW IN ST. JAMES'S PARK.

Some of the mixed beds in Victoria Park are attractive, but rather spoiled by being planted too thickly. We allude to those planted with India rubber plants, Acacia lophantha, Abutilons, Aralias, Cannas, gold-leaved Fuchsias, Erythrinas, &c. The hardy Fennels (Ferulas), with their glossy thread-like foliage, are quite equal to any other plants we saw in the way of fine-foliaged plants, and they only require to be planted once, they being able to stand almost any kind of weather, and lasting in good condition the greater part of the year. Harrison's Musk makes a capital bed round

trees which are bare at the bottom. The Japanese Maize grows well this year with the abundance of rain, and, in fact, all the plants in this park throughout have a fresh and healthy appearance, though not yet so gay as they will be in a few weeks should fine weather prevail. In Battersea Park, which is the most favoured of any as regards climate, what are termed sub-tropical plants are now growing vigorously. The carpet beds are at their best, and flowering plants, though not used here to the extent they are in Victoria Park, will soon be very gay. Castor-oil plants, Wigandias, tender Aralias, Tobaccos, and similar plants are sturdy and clean, notwithstanding the heavy storms to which they were subjected during early summer. Tree Ferns have made no growth at all, but hard-leaved Cycads, such as Cycas revoluta, the fronds of which are used largely in some parts of America as wreaths in funeral ceremonies, stand the weather well and look fresh and bright. The Fever Gum Tree (Eucalyptus globulus) is represented by young sturdy plants, occupying large beds with an undergrowth of Petunias and similar plants, and the almost hardy African Lily (Agapanthus umbellatus) in the form of dwarf plants has been flowering abundantly in mixed beds, and the New Zealand Flax thrives luxuriantly. The hardy little Fuchsia (F. gracilis) makes capital little hedges, and the Golden-leaved Fuchsia Pillar of Gold is used in a variety of ways with excellent effect. Tuberous Begonias are rather disappointing this year in the open air, the flowers looking all the worse for the heavy rains to which they have been subjected. Abutilon braziliense is the name of a plant remarkable for its large green foliage and bold habit used in mixed beds, whilst plants of Knight's Trumpet Flower (Brugmansia Knighti) will soon make a fine display, the plants being dwarf, branching, and remarkably healthy. The variegated Vine (Vitis heterophylla) makes a capital carpet plant for beds of the India-rubber plant (Ficus elastica), edged with the golden-leaved Japanese Honeysuckle.

In a semi-circular recess on a sloping bank a fine display is made by placing a row of strong sticks similar to those used for Peas, over the tops of which is scrambling Clematis Jackmani, now ablaze with wreaths of purple blossoms, the front of the stakes being hidden by Canary creepers and white Everlasting Peas, in front of which is a band of mixed single Petunias edged with silver-leaved Grass. Near to this is a bed which has been very attractive. It consists of young plants of the silver-leaved Maple (Acer Negundo variegatum), with tall Larkspurs (Delphiniums) planted amongst them, the blue stalwart spikes of the Delphiniums showing with telling effect against the white leaves of the Maples, the ground being carpeted with dwarf Tropæolums. The dwarf early-flowering Chrysanthemums are used as edging plants in places, and in a few weeks they will give a fine display of blossoms. The Chrysanthemums, which, be it remembered, are perfectly hardy and at home in town or country in any ordinary garden soil, are perhaps more useful for garden purposes than the large flowered Chrysanthemums, which often come into flower so late, as to be cut off by frost unless some kind of protection be given them. Of the early-flowering kinds in question there are at present but a few kinds—mostly white, dark crimson, and yellow; but they are excellent for cutting for vases, &c., and they flower from August till November. The old Gazania splendens and its variegated-leaved variety are also used as edging plants on sunny banks, positions in which they yield a mass of golden blossoms all through the summer. The Gazania is easily propagated from cuttings, and may be kept through the winter in a window and be planted out in May or June. Beds of Siebold's Funkia (Funkia Sieboldi), one of the best of hardy plants, are a mass of spikes of lilac blossoms, which being, however, now on the wane, will be replaced by the noble foliage of Aralia papyrifera, plants of which have been judiciously planted among the Funkias.

The Dutchman's Pipe (Aristolochia Sipho) is used with good effect as a pillar plant. A strong stake, 6 ft. or 8 ft. long, is driven into the grass and Aristolochia planted at its foot, forming a pyramid of large, handsome foliage. The flowers of this plant are more curious than attractive, but it is one of the best plants that can be used for quickly covering arbours or rough fences during summer. It is a herbaceous plant, and perfectly hardy in well-drained soils.

The Sumachs (Rhus) are elegant plants seen in bold masses in shrubberies, as they are here. They are kept pruned in the form of low bushes, which is perhaps the best way to grow them. These plants succeed well in the smoke of London as well as any shrub we know of, the Fig not excepted, and if cut down yearly they will throw up vigorous stems clothed with graceful Fern-like foliage.

The beautiful pink-flowered Japanese Anemone (A. japonica) and its white variety have just commenced to flower in borders edging shrubberies, and these plants will give a good display of blossom till severe frosts set in. These Anemones should be grown in all small gardens, for when once planted in light sandy soil they take care of themselves; and they will either grow in the open or under the shade of trees, and flower profusely from August till November, the blooms of the white one, as seen in Battersea Park, resembling those of the Poet's Narcissus, to which they are in every way equal, except that they emit no perfume.

Dahlias planted in beds with an undergrowth of White Paris Daisies will soon be an effective feature, and we noted that among the Dahlias are planted strong clumps of the hardy Flame-flower (Tritoma Uvaria), which long after the Dahlias are cut down by frost will retain their stalwart spikes of brilliant scarlet-orange blossoms, and be effective in conjunction with the Paris Daisies, which, too, withstand an ordinary frost with impunity.

Carpet bedding is carried out here to perfection, as usual, but we notice the designs are much more simple, and therefore more effective, than in former years. One of the most striking round beds is one planted as follows: In the centre is a large star composed of Blue Lobelia, studded with single plants of the variegated Fish-bone Thistle (Chamæpeuce Cassabonæ) and Yucca aloifolia, this star being set in a groundwork of Golden Chickweed (Stellaria aurea), in which are introduced small round patches of the Silver Stonecrop (Sedum acre elegans) with a large Echeveria in the centre of each.

ROSES.

ROSES FOR THE SEASIDE.

There are many whose lot is cast in seaside towns and who yet have the love of a garden implanted in their nature; to such I would write a few words of encouragement, as from experience I am convinced that, if only a real love of flowers be present, success will in the end crown their efforts. Like many others, I lamented the impossibility of growing Roses in such a situation, and, gazing on the smoke-begrimed, wind-blown, moribund standards and climbing Roses that disgrace the gardens in the immediate neighbourhood of the town and sea-shore, I felt convinced that the queen of flowers had deserted part of her legitimate domain. At last, fired by a determination to have some good Roses or die in the attempt, after careful inspection of the various sites I could find in a garden sloping steeply to the sea, and over-shadowed by trees in the sunniest parts, I chose a place, not more than 30 yards from high-water mark, where some shrubs broke the force of the sea-winds, and there made a bank sloping to the south-east. This was properly prepared with fresh soil and rotten manure, and the Roses, dwarfs on the Manetti or Brier, were duly planted, pruned at the end of February, and protected by some Furze branches from the violence of the winter winds. The consequence was that they began to grow very early, and as the late spring was very severe that year, most of my Roses died, and all had a struggle for bare existence. The next year, warned by experience, I pruned very late (in the end of March or first days of April, according to the season), and in May, when the young shoots and foliage were 2 in. or 3 in. long, I placed a band of canvas 18 in. high on the sea side of my beds; this proved a most efficient protection, as all the Roses had been pegged down close to the ground, and in June, when the leaves became firm and the flower-buds swelling, it was removed. The bloom that year was far superior to anything I had dared to expect, and from that time to this, by eliminating those varieties that will not succeed under such conditions, and trying fresh sorts and experiments, the quality of the flowers has improved. The chief points, then, to be insisted on as peculiar to sea-side treatment of Roses are late and severe pruning, sacrificing something of the summer bloom, so as to insure the growth being made as late as possible, protection during May and most of June only, and carefully pegging the Roses down in the case of strong-growing varieties, so as to ensure the sea-breeze blowing over their heads. The next thing is to give a list of the names of those Roses that have succeeded, and also to mention some of the well-known old favourites that have failed, as in spite of all care some refuse to grow or flower, while, happily, others thrive in a manner quite at variance to the descriptions given of them in catalogues most reliable for inland gardens. As a rule, I remark that light-coloured Roses do best near the sea and smoke, as the dark ones often turn purple and discoloured under a sea-breeze or a wind that brings the town smoke over them. In the following list the Rose that succeeds best in its colour is put first, and so on in proportion:—

Hybrid Perpetuals.

Red and crimson.

Marie Baumann
Mdme. Clémence Joigneaux
Madame Victor Verdier
Duke of Edinburgh
Dr. Andry
Horace Vernet

Rose-coloured.

Madame Boll
Marquise de Castellane
Edouard Morren
François Michelon
Paul Néron
Monsieur Noman

Dark-coloured.

Xavier Olibo
Louis Van Houtte

Light-coloured.

Baroness Rothschild
Madame Lacharme
Madame Thérèse Levet
La France
Marquise de Mortémart
Prince of Wales
Boule de Neige
Captain Christy

Among Bourbon Roses the old Souvenir de Malmaison and Sir Joseph Paxton are specially hardy, and Aimée Vibert alone among Noisettes. Of Tea Roses it is needless to say that the invaluable Gloire de Dijon succeeds when well pegged down, its failing being that it is inclined to grow too early in spring. The following also do well when well sheltered :—

Tea Roses.

Adrienne Christophle	Madame Falcot
Boule d'Or	Madame Willermoz
Catherine Mermet	Marie Ducher
Cheshunt Hybrid	Perle de Lyon
Goubault	Regulus
Josephine Malton	Sombreuil

It is curious to notice how many "old friends" fail us by the sea; General Jacqueminot, Jules Margottin, Charles Lefebvre, all the Victor Verdier race, Alfred Colomb, and Sénateur Vaisse refuse to produce even decent blooms with me. If any friend could give a reason why Marie Baumann and Edouard Morren should thrive and Alfred Colomb and Jules Margottin refuse to flourish, I should feel much obliged. Last autumn, finding that all my attempts to make the more tender Noisettes (such as Maréchal Niel, Lamarque, and Triomphe de Rennes) succeed entirely failed, I put up a glass coping, 2 ft. wide, on the top of a wall 5 ft. high, facing east, and glass screens at each end of the coping to prevent the east wind sweeping along the wall. Under this protection I planted in a rich border Maréchal Niel, Lamarque, Souvenir d'un Ami, Perle de Lyon, and other good Roses, and they have grown and flowered with such wonderful luxuriance (when they would not have lived there without this slight protection), that I feel inclined to recommend its trial by all those who, like myself, live in exposed situations. Occasional syringing and watering in dry weather are needed, as the coping keeps off some of the rain from the border close to the wall. If anybody who reads this tale of success and failure be tempted to try and make Roses grow where they had not grown before, my object will have been achieved. H. W.

FRUIT.

STRAWBERRY CULTURE ON LIGHT SOILS.

Those who have soil of a light porous description to deal with will naturally experience more difficulty in obtaining good Strawberries than where the natural staple is more holding and substantial. At the same time it is quite possible to grow fruit of excellent quality in the most unfavourable of soils. All the grower has to do is to counteract the unfavourable conditions as far as may lay in his power. If, for instance, the soil is inclined to parch during the summer months, it should at planting time be trodden or rolled down as hard as it is possible to do. If the surface can be made as hard as a gravel walk, so much the better; there is then less chance of the roots suffering from atmospheric fluctuations, and the plants will not need so much water. This precaution is not needful in the case of soils of a somewhat retentive nature, and it is only where the natural staple is of this description that Strawberry growing for market can be made profitable. In sound loams the particles of soil lie so closely packed together, as to form a solid surface almost impervious to the dessicating influence of the sun—in other words, such soils do not burn. Treading in such cases is by no means necessary, and even mulching, with the exception of a little straw to keep the fruit clean, may be dispensed with. This is the reason why so many who have only had to do with favourable soils fail when they have to deal with land which parches and burns in the hot sun. So great an influence has soil upon the growth of the Strawberry plant, that an entirely different system of culture has often to be pursued in different parts of the same locality, and even of the same garden. As an illustration of this I may mention that in one particular spot in this neighbourhood the Strawberry thrives with rank vigour, plants in a single season attaining extraordinary dimensions, scarcely needing even in the hottest and dryest of seasons any attention with the watering-pot. In another garden hard by the greatest precautions have to be taken to ensure a crop. It will therefore be seen that no general rule can be laid down in this matter; operations must be regulated by the nature of the soil, and if the grower wishes to attain success in the culture of this favourite and wholesome fruit, he must form a correct estimate of the difficulties to be encountered, and make up his mind not to spare any amount of labour which may be necessary to counteract such unfavourable conditions as may naturally exist. Where a little expense is no object there are always means to improve light soils. A few loads of clay spread over the surface until the united action of sun and air, or frost and wind, thoroughly pulverises and crumbles it to pieces, is undoubtedly the very best material for the purpose. For a small garden the outlay for making a piece of ground in this manner would not be very great, and the result would fully justify the expense incurred. Marl, where much is procurable, is also an excellent cultural agent, its beneficial effect being certainly most marked on light lands, its stimulating properties not becoming readily exhausted. In the case of old kitchen gardens where the soil has become deficient in certain nutritive properties, the addition of a little more exercises a most wonderful revivifying effect. By its use alone good crops of fruit may be obtained where repeated applications of manure have failed to induce anything like vigour or fruitfulness. Another good material and one more easily obtained is road-scrapings. These may generally be bought for 6d. per load, the carting costing from one to two shillings extra, according to the distance, or, what is still better, the parings from the sides of the road may be bought at a cheap rate, for, containing, as they do, a large proportion of organic matter, they not only impart solidity, but add considerably to the fertility of the soil. Light soils do not need so much previous preparation as those of a retentive nature if well stirred once or twice with the fork during September, and there will remain nothing more to do than to add such manure as may be considered necessary, breaking it well to pieces and forking it in as deeply as possible. Any of the materials above recommended which are to be employed should at the same time be forked in with the top spit. There are various methods of forming a Strawberry plantation. In good strong holding soils it is customary to allow quite 2½ ft. between the rows, and 18 in. from plant to plant, and even in light soils, if the ground is heavily manured, deeply stirred, and well mulched in the summer, this distance cannot be accounted too much. We will now suppose that a good tilth has been prepared in the manner recommended. We have only then to choose a dry day, and roll or tread the surface quite hard. The more sandy, light, and porous the natural staple, the greater necessity is there for making it firm. Having completed this operation, strike out the rows at the required distance by patting the line, so that its form is impressed upon the soil. Mark the place for each plant and set it in firmly with the trowel, settling it well in place by treading firmly, but gently, round the collar. When thus fixed there is but little danger of hard frost drawing them out of the ground. If planting has been carefully conducted, and the roots preserved against the drying influence of the air, fresh fibres will be immediately formed, and each plant will have thrust feelers far into the soil before winter arrives. The following March run the hoe over the ground and then mulch with good stable manure, or, failing this, litter of some kind or short Grass. To ensure the best results, every truss of bloom should be picked off the first year. The produce in any case cannot be much, and the little self-denial exercised will be rewarded by a bountiful crop the next year. During the summer every attention must be given to cleanliness, pulling up weeds as they appear, at the same time cutting off all runners as they are made, and watering freely in hot weather. A complaint that one frequently hears is, that on light soils the plantations soon wear out, the crop after the first year frequently being very deficient in quality and quantity. This, however, is too often the fault of the grower, who is apt to forget that a Strawberry plant has its requirements even after it has ripened off its crop of fruit. It frequently happens that very hot weather sets in after the crop is gathered, in which case, unless the stools are at once watered, they are apt to suffer to a serious extent, or do not start into growth in time to perfect their crowns. Some growers recommend cutting off the old leaves; others condemn this practice as barbarous. My experience tends to a middle course. If some of the old rusty leaves are cut off and a good watering given, the energies of the plant are then concentrated upon the production of fresh foliage, and growth generally is more free than when the entire mass of old leaves is allowed to remain.

Large-leaved Gunnera in the open air.

There is another point to which I would direct the attention of those engaged in Strawberry culture. When a plant has fruited the second year, it will, if at all vigorous, be found to consist of a number of crowns, large and small, and, in the case of many varieties, very much crowded together. These crowns the third year will many of them prove sterile, twenty of them perhaps not giving half-a-dozen trusses of bloom. This is owing to the foliage being so dense and the crowns so thick together, that sun and air cannot well penetrate to them; they do not mature, hence the necessity for partial defoliation and thinning out the crowns. Where a dozen crowns exist quite a third should be cut clean away. If at the same time a top-dressing of good free soil be given and worked up well around the collar, the production of new roots from the base of the crown will be stimulated and the plant will take on as it were a renewal of life and energy. This thinning out of the crowns is but little understood and but seldom practised, hence the reason that plantations so often wear out and become unfruitful in a short time. I have known plantations last five or six years when thus yearly attended to. At any rate, it is a practice that I can conscientiously recommend, and the little labour involved thereby should not be grudged, being much less than would be incurred by making fresh beds. There is one particular method of making a Strawberry plantation which I would recommend to those who may have soils of a peculiarly unfavourably nature to deal with. I allude to the formation of beds some 4 ft. in width, the plants

to be set, if plenty of runners are obtainable, some 9 in. apart, to be thinned the following season, leaving every alternate plant. The whole surface of the soil being covered with foliage, the sun cannot well act upon and parch it; the plants, therefore, do not die off. In this manner of growing heavy mulchings are not necessary, an annual top-dressing of soil and a sprinkling of guano in early spring being all that is needed. Thinning and defoliation being duly attended to, such beds will last for years. The crop will be somewhat later than that produced by isolated stools, but there is the advantage of the bloom not being cut by frost, which it seldom is, owing to its being so much protected by the foliage. The beds, being only 4 ft. wide, with a path on each side, allow of the fruit being gathered with ease; and by bending some Hazel rods over and tying them together in the middle, the whole of the fruit may be secured against the attacks of birds. J. Cornhill.

Byfleet, Surrey.

PRUNING AND GRAFTING.

Roughly speaking, the objects of all pruning are to obtain fruit, but the subject is a wide one, and branches off into several collateral issues. For instance, we sometimes prune to secure bulk of tree by heading back the main branches, but the ultimate object still is to obtain fruit, as a tree must be built up before it can bear. Then, again, trees are pruned to assume various forms, by cutting to a bud pointing in any given direction. In pruning orchard trees, the main object should be to let in the sunshine; it increases the circulation, and sends the forces of the tree into the right channel for fruit-bearing; and to that end the dense places should be thinned, at the same time cutting out all crossing, deformed, and badly-placed branches. Different kinds of fruits require different modes of pruning; some bear best on spurs, and others on the previous year's wood. One of the chief aims of pruning is the concentration of the tree's efforts by decreasing the number of anything; increased development is secured for those left. If all regularly pruned trees were thinned in summer, so that the sun could look into the obscure places, there would be more and better fruit; and if growers of fruit give thought to the matter they will soon learn the value of having a tree clothed, but not crowded, with good, strong, healthy foliage, where each leaf and bud has had a reasonable share of sun and air; and this result cannot be obtained permanently by either the non-pruner or by those who prune immoderately.

Wigandia, a plant for warm sheltered gardens in southern counties only.

Without reckoning budding, there are two methods of grafting that are commonly practised in gardens, viz., whip-grafting and crown or rind grafting. In the former case, which is applicable mostly to young stocks, the scion is fitted on the stock in the same manner as a whip is fitted on to its handle. The stock is headed down and a good slice cut off one side. The scion—a piece of well-ripened wood, from 4 in. to 6 in. long—is prepared in a similar manner by having a slice about 2 in. long cut from one side and made to fit close to the stock, at least on one side, so that the bark on each may meet and unite. A better and closer union is to be obtained by making a downward cut in the stock, forming a small slit; a similar cut is made in the scion, so as to form a tongue to fit into the slit of the stock, and the whole is bound firmly together with soft matting. Any one learning to graft may practice upon the branches of any growing trees until they have gained experience in the handling of the knife. Crown or rind-grafting is more especially suited for headed-down trees or large stocks. The stock is first headed down, and the cut smoothed with a knife. Three or four scions may be placed on each branch; they should be prepared by cutting one side flat and tapering, the cut portion to be about 2 in. long; the outer bark on the uncut face of the scion, opposite to the part cut flat, should be shaved off carefully, leaving on as much as possible of the cambium or under bark. The point of the knife is then drawn up the bark of the stock, about as deep as the scions will reach. A skewer of bone or ivory, of similar shape to the scion, is then inserted between the rind and the wood opposite the niches cut in the bark, and as soon as the instrument is withdrawn, the prepared scions are inserted, and tied in and clayed immediately.

Budding is an equally simple process, with this difference—the grafter inserts a portion of wood and several buds, whilst the budder only takes one bud, generally without any wood, and inserts it by making a slit in the back of the stock. The bud should be a well developed one, and should be cut from the shoot with a small shield of bark protecting above and below, and the bud and bark is slipped underneath the bark of the stock and tied in carefully, but firmly. Grafting is best done in spring, when the sap rises, the grafts having been cut a month previously and laid in damp earth, as it is necessary the stock should be in advance of the scion. On the other hand, in budding, the bud is taken from one growing shoot, and inserted in another immediately in summer. E. H.

Strawberries.—All should ere this be in their fruiting pots, and be growing rapidly. Keep the runners constantly pinched off and never allow them to suffer even slightly in the matter of watering, or to become drawn and weakly from standing too closely together. They should be kept free from weeds by pulling them out as soon as perceived, as under no circumstances should the surface soil be broken up; such a proceeding should ever be looked upon as wanton destruction of the best roots of the plants. If a small proportion of bone manure was incorporated with the soil for potting, no manure water will be required, as the aim should be the obtaining of sturdy, fruitful crowns rather than an immense profusion of leaves, accompanied as they would be with large sappy crowns difficult to ripen.

How to Catch Earwigs. — Taking advantage of the fact that these insects feed in the night, almost any substance in which they can conceal themselves in the day may be employed to trap them. The usual practice of placing a small inverted flower-pot with a bit of Moss in the bottom on the top of the stake to which the plant is tied is not a bad means of catching them, provided the pots be regularly examined. Another trap commonly used is small bundles of Bean-stalks tied up, cut 6 in. or 8 in. long, placed in each plant, and looked over daily by shaking the end of the bundle on a board or other substance, by which they can be destroyed. The most simple and effective traps are pieces of newspaper, crumpled roughly up in the hand, and stuck anywhere in the plants, unfolding them two or three times a week, when numbers of the insects will be found concealed in them. If there happens to have been bred a nest of young robins near the ground, the numbers of earwigs they will eat, when they have taken flight and got old enough to find their own food, will astonish anyone taking the trouble to watch their movements. In the case of Dahlias (and there is, perhaps, no flower to which they do so much harm as to the Dahlia), the use of thin muslin bags, in which the buds are placed before they expand, drawn up close round the stalk of the flower so as to prevent the insects getting to them, is also a method followed by some growers. A piece of cotton-wool, twisted round the flower-stem just behind the bud, will prevent them getting to the flowers. By resorting to some or all of these methods, their numbers can be so far kept under as to prevent the disappointment of finding all the best buds rendered useless. As preventives, the circular earthen pans that are made for the purpose, in the fashion of a collar to the plant, are very effective. They should be put down firmly and kept full of water, and nothing in the shape of a bridge should ever be allowed to make a way for the earwigs to cross the water. Mulching is said by some to induce earwigs, but this hardly seems reasonable, for whatever keeps the ground cool and moist acts as a preventive.

House and Window Gardening.

GARDENING ON WINDOW-SILLS.

In outside window gardening there is abundant room for more variety than at present; many plants not commonly met with in such positions might be advantageously used. Bright and continuous effects may be produced by annuals alone if sown at different times and brought forward in boxes successionally. Ivy and other creepers might be planted along the front of the boxes and allowed to hang down naturally over the side, or they may be planted at the ends and trained upwards. Virginian Creepers, again, are exceedingly useful for this purpose. The Canary Creeper and other Tropæolums would be quite at home in boxes outside the windows, provided the soil was rich and water was liberally supplied. There are, in fact, so many things that may be successfully grown outside windows in boxes that one wonders that so little variety is seen.

In order to keep a window gay and interesting I should suggest that several sets of boxes about 5 in. deep be prepared, using the deepest for the summer-blooming plants. The year might be commenced with a box filled with Sedums, not necessarily all of one kind. There might be a mixture with the long shoots falling over the box gracefully on all sides; with the Sedums might be associated in early spring Crocuses and Snowdrops planted in October. Hyacinths and Tulips might also be intermingled, and there would be no occasion to replant the boxes every year. What a sensation would be created by a box brimfull of common Yellow Primrose early in spring, or the Wild Hyacinth or Bluebell! Many a dweller in large towns who was country-born would be enraptured by the sight of the flowers of their childhood. Polyanthuses and Alpine Auriculas from seed would also be very effective, and could be obtained at a very small cost and trouble; in succession might follow autumn-sown annuals of many bright and beautiful kinds. In summer Pelargoniums, Stocks, Mig

nonette, &c., would look gay and give oft a delightful perfume ; and when the autumn and winter came round there would be dwarf Chrysanthemums, single Russian Violets, and dwarf Shrubs, including berry-bearing species. If some pains be taken with the Violets to get plants started early, they will begin flowering in autumn, and continue to bloom through the winter.

There are numbers of plants that would be as effective as those I have named, or even more so, but I hope I have already said enough to show that the materials for beautifying the humblest home are neither scanty nor costly, and that the care and attention necessary to their successful development will open up new sources of thought and supply a pure source of enjoyment, all the more gratifying because untainted by selfishness. If the outside of the window may be described as the poor man's flower garden, the inside may, by a similar figure of speech, be called his hothouse ; or he may have his aquarium, furnished with gold fish, and, to keep the water pure, a few aquatic plants.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 16.—Sowing Radishes, Snowball and Stone Turnips, Incomparable, Enfield Market, Imperial, Matchless, and Little Pixie Cabbages, Mignonette in pots, Bath Cos, Hicks' Cos, Stansted Park, and All the Year Round Lettuces, Frogmore Walcheren, and Early London Cauliflower ; putting in cuttings of Salvia, Gazania, Balm, Pelargonium, Hydrangea, Fuchsia, and a few Achyranthes for stock ; planting Sweet Williams and Rockets ; layering Carnations.

Aug. 17.—Sowing Cucumbers to grow in pots, also Prickly Spinach ; potting Madame Vaucher Pelargonium for autumn, also double Wallflowers ; cuttings of Ageratum, Heliotrope, Agathæa, and Verbenas put in a cold frame plunged in ashes; planting Wallflowers, Endive on Potato land, and July-sown Cabbage ; putting nets up to Vineries to keep out wasps ; taking up seed Potatoes (Prolifics) ; cutting Lavender ; pulling up autumn-sown Onions ; digging some land for spring annuals ; making pit for Endive and for Bath Cos Lettuce and latest Cucumbers ; earthing up Cauliflower.

Aug. 18.—Sowing Globe, Tripoli, and Strasburg Onions, Schizanthus, East Lothian, and Brompton Stocks ; potting Vesuvius and Dr. Lindley Pelargoniums for winter ; putting Primulas into their flowering pots ; also putting in cuttings of bedding Pelargoniums ; netting Plums ; putting Pinks in a sunny place under a wall ; putting Shallots and Garlic under cover ; budding Roses ; levelling ground for autumn Onions ; hoeing up Strawberries and manuring for early Cabbage ; cutting Laurels over a second time ; clipping Yew hedges.

Aug. 19.—Sowing hardy annuals ; potting off some late-sown Cinerarias, also Pinks ; putting in cuttings of Hollyhock and Senecio ; planting Antirrhinums ; pricking out Stocks and Sweet Williams ; repotting the largest Cinerarias for early bloom, some Musk seedlings and Bouvardias ; lifting Ashtop and Handsworth Potatoes for seed ; earthing up Celery ; making a bed for Violets ; painting Apple trees with paraffin for American blight ; thinning late-sown Carrots and Turnips ; also last-sown Mignonette, and taking old flowers off in order to encourage them to grow again.

Aug. 20.—Sowing Chærophyllum bulbosum, Radish, and also Spanish Radish, Silene pendula, and S. p. alba, Nemophila insignis, and Pansy ; likewise last Mignonette; potting Masdevallias and Odontoglossums ; put in cuttings of Nasturtium, Gazania, Petunia; planting July-sown Bath Cos Lettuce ; layering Strawberry runners for planting ; also Chrysanthemums and Anne Boleyn Pinks ; tying up Stephanotis, Allamandas, and Roses ; shifting intermediate Stocks into 6-in. and 8-in. pots ; making land ready for Bath Cos Lettuce, July-sown Cabbage, and Endive ; also for Leeks and Wallflowers ; mowing off one bed of Parsley to get it to grow for winter.

Aug. 21.—Sowing Beck's Gem Pea ; potting scented-leaved Pelargoniums ; putting in cuttings of Veronicas, show Pelargoniums, and a few more Manglesi ; staking all dwarf Mignonette that is ready ; moving Primulas from behind wall to pits ; earthing-up late winter Greens ; thinning out last-sown Turnips and latest-sown Mignonette ; stopping straggling shoots on early Vines ; exposing Peaches out-of-doors ; taking runners off potted Strawberry plants ; taking off breastwood from wall trees.

Plants and Flowers in pots ready for house-decoration :—

Justicias
Mignonette
Bouvardias
Scarlet Geranium
French Geranium
Double Geranium
Scutellaria Mocciniana
Godetia in variety
Balsams
Agrostis pulchella
Heliotrope
Zinnia elegans
Carnations
Clove Carnation
Roses
Gardenias
Pansies
Spiræas
Stephanotis
Moss Roses
Stocks
Calceolaria
Fuchsia
Hydrangea
Lobelia
Pelargoniums
Cockscombs
Petunia
Myrtle
Musk
Blue Cornflower
Sweet Pea
Lilium auratum
,, lancifolium
Dianthus Heddewigi
Calliopsis
Lilies

Glasshouses.

The deficiency of blooming plants in conservatories at the present time of the year may be compensated by a liberal admixture of such plants as Draccenas and Coleus. Of the former take such kinds as Cooperi, ferrea, and terminalis ; the bright markings of their leaves will supply the place of flowers, and the plants will not receive injury for the next two months by being placed in a house without fire-heat. The different varieties of Coleus should be placed so as to get as much light as possible, otherwise they become drawn and have an unsightly appearance. The old Plumbago capensis is another useful plant for this time of the year, not grown nearly so much as it deserves to be. The present is a good time to propagate it. The small half-ripe side shoots will strike freely inserted in small pots under bell-glasses in a warm house or frame. These, when struck, should be encouraged to make growth before the autumn gets too far advanced. They should be wintered in a temperature of 45° or 50°. In the spring they should be headed down and potted in 6-in. or 8-in. pots, using good fibrous loam. If desired some may be grown on in larger pots, but for general decoration they are more useful in a comparatively small state. The plants will last for years by cutting them back in the spring just before they commence growth and when they have broken, replacing a portion of the old soil with new material, returning them to the same or a size larger pot. Fuchsias should have their seed-pods picked off regularly, or they soon cease to flower freely ; they ought to be supplied twice a week with weak manure water. Double Petunias are very useful at this season, either as decorative plants or for furnishing cut flowers. They should receive regular attention in the way of stopping and tying, to induce them to break back, or, from their quick, somewhat straggling habit of growth, they become unsightly. Lilium auratum is a most useful subject for conservatory decoration at this season, but should not be introduced in too great numbers at a time, as its perfume, being so powerful, is oppressive. Attend well to the different varieties of Lilium lancifolium, by keeping them neatly tied out, and supplying them regularly two or three times a week with manure water, otherwise the soil becomes exhausted and they lose their bottom leaves, which destroys half the beauty of the plants. They must on no account be allowed at this season to suffer from want of water.

Solanum macrophyllum, as grown in the London Parks.

Pillar Plants.—Many of the plants classed as greenhouse climbers, and employed for covering the usual roof supports, are far from being fit for the purpose. They are often such strong growers that they quickly run up to the top, leaving the lower portion of the pillars, where their presence is much wanted, devoid of leaves. Where plants for use in this way are required they are usually wanted to give immediate effect, and for that purpose it is well to prepare them beforehand by growing them on in pots until they are large enough to produce some effect at once ; if healthy young plants are got now and an extra shift given them, time will be gained. It is scarcely necessary to say that instead of having the shoots pinched so as to form bushy specimens, they should be trained erect, only stopping a few of the strongest growths at different heights to cause these to break out. Subjoined are a few of the best plants for the purpose : Cantua dependens bears deep pink flowers, produced like those of Fuchsia corymbiflora ; this is only fit for a pillar, as its determinately erect habit makes it unsuitable for growing in the ordinary way. Hovea Celsi, the lovely blue flowers of which are unsurpassed by those of any Pea-blossomed plant, has a habit which just fits it for growing on pillars. Habrothamnus elegans, which is stronger in growth than the two preceding, can also be easily kept within bounds, and is likewise an excellent subject for the purpose indicated. Mitraria coccinea (the Scarlet Mitre-flower) is another effective plant in a position of this kind, as by annual judicious cutting-back it can be had in flower from the bottom up to any reasonable height. The old Hoya carnosa, which will succeed for many years in a very small pot, is nowhere seen to greater advantage than when trained to a pillar. The blue Plumbago capensis, too, needs comparatively little root-space, and grows up quickly ; its foliage is always neat, and it will keep on for many weeks producing its handsome pale blue flowers. Clianthus magnificus and C. puniceus are both good pillar plants, which are not disposed to get too large. Fuchsia corymbiflora is never seen in better condition than when grown in this way. The red and white Lapagerias are amongst the best plants that can be employed for the purpose ; the only objection to their use being that as they get old they require considerably more root room than is afforded by the usually small space that is available at the foot of a greenhouse or conservatory pillar wherein to turn a plant out, and if kept in pots or boxes the arrangement of the house is generally such as to produce an unsightly appearance. Plants of any or all of these, well prepared beforehand, will, when transferred to the positions they are to occupy, soon obviate the disagreeable effects of bare pillars.

Achimenes.—These should have every attention as they go out of bloom to assist them in forming and ripening their tubers ; the best place in which to treat them at this season for that purpose is a pit or frame where they can be kept moderately close and shaded, in additon to which they should be freely syringed overhead, that the leaves may be maintained in a fresh, healthy condition. Achimenes are too frequently stowed away directly they cease flowering or become the least shabby, and water entirely withheld from them, a course of treatment the reverse of what they require, as it is just at that time assistance is needed in rendering the drying-off process gradual and natural. By affording the first batch a little extra attention, they will form an abundance of fine, large tubers, superior in every way to any that can

be obtained from those now coming on, which may therefore be discarded as soon as they have discontinued blooming.

Eucharis amazonica.—Valuable as this is at any season, it is never more welcome than during the autumn and winter months, a time of the year when such choice blooms are doubly appreciated. Fortunately, they may be had at that season almost as readily as at any other, provided there be the necessary convenience for growing them and a good stock of plants to work with. Where this is the case, a portion of the plants should be always resting and others coming on in different stages, so as to keep up a constant succession of flowers for cutting or other purposes. Those intended for blooming during October, November, and December should now be at rest in a cool house or pit, where they have only had sufficient water afforded them to keep the leaves alive and fresh. If a portion of these be transferred into hot-house heat and kept well supplied with tepid water, they will soon commence to throw up their flower-spikes, and when these are cut the plants should be grown on for a time before they are again put to rest. Owing to the rapid way in which the bulbs increase in number, frequent division and repotting are necessary in order to renew the soil and make a separation of the large flowering roots from those of smaller size, which can either be discarded or kept for stock. The soil that suits them best is rough lumps of peat, leaf-soil, and a sprinkling of rotten manure, to which should be added sufficient sand to keep the whole porous and open, so that the water may pass freely through. To aid this the pots must be thoroughly well drained by placing at least 2 in. of crocks in them, over which some half-rotten leaves should be scattered, to prevent the finer soil from running amongst them and filling the interstices. Water somewhat sparingly for the first week or two till they get fresh hold of the soil, and then gradually increase the supply as the pots fill with roots, after which, if the heat be sufficient, they can scarcely have too much, either at the roots or overhead, where a good syringing is always acceptable.

Flower Garden.

In a flowering state, Roses of every description are all the better for having all bad flowers regularly removed, not more for the sake of neatness than for the encouragement of successional blooms. If excessive growth is exhibited by plants on rockwork, there is danger of the stronger overpowering the weaker unless early attention be paid to them. The present is a very good time to propagate many of this class of plants by division. The propagating of bedding plants may now be commenced, cutting off straggling shoots for the purpose. A fortnight hence will be ample time to put in a few store pots of cuttings of such plants as do not lift well; amongst these are Petunias, Verbenas, Heliotropes, Lobelias, Coleus, Alternantheras, and Iresines. Still, no pains ought to be spared to render the flower garden as attractive as circumstances will permit by the preservation to the fullest extent of neatness, both as regards the beds, turf, and walks.

Indoor Fruit.

Vines.—Remove the lights if practicable from the earliest Vineries in which all the wood is thoroughly well ripened and the fruit cut, and paint and repair the house. Where Grapes are now ripe and hanging, precautions should be taken against the ravages of wasps and other depredators, either by placing the clusters in little muslin bags, or, if convenient, covering over all openings for ventilation with sheets of tiffany, hexagon netting, or frigi domo. A somewhat dry atmosphere is necessary where Grapes are ripe and colouring, but still guard against too much dryness. In late Vineries where the berries are swelling give air night and day, and maintain an equal temperature by means of a little fire-heat, which dispels stagnant damp in dull weather and renders the atmosphere sweet and healthy; give also abundance of water, and sometimes manure water to the borders, and liberally damp all paths, walls, and floors during the day, otherwise shrivelling soon sets in, and red spider makes its appearance.

Peaches and Nectarines.—In order to give late fruits every chance of ripening properly, fully expose them to the influence of the sun. Trim out all shoots not required for next year's work, so as to thoroughly ripen those retained. Where the fruit has been gathered, and the wood is well matured, ventilate the houses as much as possible night and day, and syringe with a solution of sulphur for the eradication of red spider, and use some dissolved soft-soap or Gishurst Compound in the water when syringing for the destruction of scale. Keep the borders moderately moist, for drought under any circumstances is exceedingly harmful to the trees.

Melons.—Prevent over-luxuriance by means of kindly treatment and a little ventilation at night as well as during the day, in preference to stinting the supply of moisture and pinching severely. However, their growth must be regulated and held in check, and attention must be paid to the fertilisation of the blooms. To those whose fruits are swelling, give heavy applications of water, and occasionally some liquid manure.

Cucumbers.—The plants for winter fruiting should now be sown, and cuttings struck from present fruiters to succeed them. Worn-out plants may now be cut in rather severely, and the borders mulched and well watered, and the linings renewed; the plants soon make a fresh start and bear well for some time yet. Attend to the usual routine of thinning the leaves, shoots, and fruits whilst in a young state.

Outdoor Fruit.

It is now time that all summer pruning and stopping of shoots should be finished, as there is now no danger of the trees making growth to be in any way detrimental to the formation and full development of fruit-buds for next season. Any such work still to be done should be completed as soon as possible, after which the shoots should be neatly laid or tied in, and the ripening fruit be exposed to the influence of sun and air by having the foliage drawn on one side, or, if need be, removed altogether; but this should only be done when the leaves cover the fruit, and so hinder its colouring properly. Should the summer continue hot and dry, watering will be a serious item of garden labour, as it is from this date to the end of September that fruit trees require most water. If that should be scarce mulch deeply with litter or Grass. Gather Apricots, Peaches, and Nectarines a day or two before they are intended to be used and before the sun touches them in the morning; they will then keep for several days in a cool room and be all the better for it. Of course, they should be laid on some soft substance, such as dry Moss or wadding. Early kinds of Pears, such as Citron des Carmes, Belle de Bruxelles, and Jargonelle, are now sufficiently ripe to gather; it is not well to allow them to fully ripen on the trees, as then the flavour is not nearly so good, and the fruit soon decays. Let all runners required for forcing and new plantations of Strawberries be taken off as early as possible, in order that the beds may be cleared of runners and bad foliage, after which slightly point over between the rows, and give a fresh mulching of rotten manure. Water freely all newly-planted beds, to get growth completed by the end of September. A nursery bed of runners should be kept on hand to make good any failure that may occur.

Vegetables.

August is a month of sowing and transplanting. If the weather be dry then the seeds require moisture; and in order to best ensure it, let the ground be deeply dug, levelled, and rolled, and sown with as much expedition as possible, so as to prevent it from parting with its moisture; a mat or some litter placed over it until the seeds begin to germinate will also be found useful in periods of drought. The hoe should be in constant use, and all weeds and vegetable refuse should be collected in a heap, where, by mixing it with lime and by means of frequent turnings, insect life, and also that of the seeds of weeds, may be destroyed and decomposition accelerated. Hoeing and surface-stirring should be rigorously persevered in, and slugs and insects should be kept in check by means of dressings of soot and lime. Never permit vegetables to run to seed, unless required for that purpose, and then they should have a place set apart for them. Manure well and trench every spare piece of ground, which if uncropped should be ridged. In dry weather abundantly water all kinds of crops that will be removed before winter, but to such as remain during that season water should be judiciously applied, as too much induces soft growth liable to be destroyed by frost.

Endive and Lettuce.—Ground should now be prepared for the principal crop of Endive and autumn Lettuce; for these it ought to be well manured and in a moderately dry position. Do not overcrowd the plants, especially Endive. The rows of Endive should be 15 in. or 18 in. apart, according to the condition of the soil, giving the most room where the growth is likely to be strongest. Lettuce, especially where the small Cabbage variety (such as Tom Thumb) is planted, need not have so much room. More Endive should now be sown. For general use the Green Curled is most esteemed, but where the Broad-leaved Batavian is liked a pinch of each may be put in. Do not sow the seeds too thickly; they are liable to the attacks of birds or insects, and usually almost every seed vegetates. Previous sowings that are already up, if too thick, should be thinned out sufficiently to allow them room, or they get drawn up so weakly as to be long in getting hold when planted out. Some Lettuce—Tom Thumb, Black-seeded Bath Cos, and likewise the hardy Hammersmith—should also be now sown; the last-named sort is not equal in quality to the Cos varieties, but in many places it will stand the winter where other kinds would fail.

Ridge Cucumbers and Vegetable Marrows must be plentifully supplied with water, or they cannot possibly keep on bearing. It should be given in quantity sufficient to reach as far as the roots extend.

Onions.—As soon as these show signs of completing growth they should at once be pulled up, or they will commence to make fresh roots, which injures their keeping properties. They are all the better for being dried quickly. Where a moderate quantity only is grown that can be dealt with in this way; the old method of spreading them thinly on a slate or tile roof has the advantage that if much wet weather should follow immediately upon their being drawn they are not so liable to root afresh as if laid on the bed to dry; or the simple plan may be followed of tying them in bunches of eight or ten immediately they are pulled, and hanging them up on the outside walls of a building that has an overhanging eave sufficient to throw off the rains; the north side is the best for keeping them late in the spring, as there they have not the disposition to grow so early. Shallots, if not already taken up, should be at once removed to a dry place and kept there.

How to Grow Rhubarb.—Rhubarb will grow on many kinds of soil, but the richer and deeper it is the finer will be its quality and the larger its size. The situation should also be moderately dry, or made so by drainage. It will grow in clay, peat, or the bog-earth of the fens. We have seen it succeed remarkably well in mud cleaned out from the river. Perhaps, had it a choice, it would elect, like most other garden plants, a turfy loam, leaning to clay rather than sand. When the leaves get fairly into growth it needs some strong stimulant to keep them growing. The larger the leaves of one season the stronger will be the crown for the next; hence the importance of rich feeding all through the growing season. It is a good plan in small gardens to plant Rhubarb near the depôt for house sewage, so that it may be nourished with strong waters as well as rich solid manure; 4 ft. at least of a rich root-run should be provided for it. For new plantations the ground should be thoroughly trenched and the manure carefully incorporated with it. Its productive force should be kept up afterwards by an annual dressing from 4 in. to 6 in. in thickness. No plant is more easily increased and multiplied than Rhubarb; plants of two or more years old seed freely if permitted to do so. Unless seed be required, however, they should not be allowed to do so, as seed-bearing weakens the crowns. The seeds ripen about the end of September, and may be sown at once in shallow

drills 1 yard apart, or they may be sown in February. As soon as they are well up, thin the plants to 18 in. or 2 ft. asunder, according to the size of the plant and the intention of the cultivator. If intended to remain where they are, 1 yard apart is close enough—indeed, too close for the Victoria variety. Some, however, prefer rows 2 ft. apart, and thinning the plants to 1 ft. only the first season; then in the October or February following fresh ground is prepared, and the Victoria transplanted at distances of from 4 ft. to 6 ft. by 4 ft., and the Defiance 3 ft. by 18 in. or 2 ft. The best plan is to sow Rhubarb where it is to remain, as it forms immense roots that are easily broken, and to break it is to injure it more or less. Nevertheless, a very common mode of propagating Rhubarb is by root division. The huge stool or fleshy root is sliced into as many portions as there are crowns to it with a sharp knife or spade, and each slice forms a new plant. This is rather a barbarous mode of increase. Gathering Rhubarb and when to cease gathering are matters which require more attention than they generally receive. In gathering, the proper method is to give the leaf-stalk a twist outward and a sudden jerk down at the same moment. From want of attention to this, many tear off the crown with the base of the leaf-stalk. Again, too many leaves should not be gathered at once. If a plant have only a dozen leaves, do not gather more than six of them, and let these be the lowest. As to the age of the stalk, that depends a good deal upon taste. Some prefer Rhubarb when the leaves are freshly unrolled, others when they are half-grown, and others when they are fully grown. Of course there is great waste if the stalks be gathered before they have reached their full length. Rhubarb is at its best just when the leaf has reached full size. It can hardly be too old for preserving, and is seldom gathered till the end of August for that purpose. As to the time of ceasing to gather Rhubarb, it should certainly be not later than August if the gathering is to be annual: this leaves but little time for the last leaves to ripen good crowns for the next year's crop. All the leaves removed have doubtless been a loss to the plant: they did much to weaken and nothing to strengthen it; it is only the leaves left on that recoup it for its loss in those taken off. Hence the importance of rich food to replenish the plant and time for the maturation of the later growth; and it need hardly be said that no weed must be permitted to grow at the expense of the Rhubarb plants. Grown as here briefly set forth, perhaps no crop yields a heavier or more profitable return.—S.

Potato Disease.—I am sorry to say the Potato disease is showing itself very plainly among early Potatoes in my neighbourhood. I have pulled up all the haulm and hope thereby to save them. I was very fortunate last year in doing so, having enough to last me till March. Many of my neighbours are taking a leaf out of my book this year.—R. H.

Large Cauliflowers.—I saw cut, on the 19th of July, in the nurseries of Mr. C. J. Baker, Littlehampton, Sussex, four Cauliflowers, called the new Italian Ne Plus Ultra, one of which weighed 12 lb., the total weight of the four being 40 lb. They gained a first-class certificate at the West Sussex Monthly Exhibition.—A Visitor at Littlehampton.

Tomatoes in Pots under Glass.—Tomatoes in the open air are often late in ripening, but fortunately we are able to gather plenty from pots standing on the front shelf in one of the houses, and trained up near the glass. Wherever there is shelf room in a warm house Tomatoes may be had in abundance without much trouble.

Late Peas in Pots.—Where very late Peas are required, some of the dwarf early kinds, such as Blue Peter, Gem, and Unique, might be sown now, not too thickly, in 8-in. pots. There is an advantage in growing the last crop in pots, because in the early period of their development they can be grown on the north side of a fence surrounded by a cool, genial atmosphere, and when the sun loses power and the heat is moderate, they can be moved to a warmer position, or be placed, if necessary, under glass, to set their blossoms and fill out their pods.

Late French Beans.—Plant any of the small early kinds in a frame or pit. Fork up the soil, and pick out the roots, and give a good watering if the soil be dry a few hours before planting the Beans; the lights may remain off till the approach of cold weather. A few may also yet be planted on a warm south border if a frame and lights can be placed over them before frost comes. In the event of a mild autumn they will come in useful.

Cauliflowers.—From the 18th of this month to the 1st of September, according to situation and other circumstances, will be a suitable time to sow the main crop of Cauliflowers, but if they are to be wintered under glass, the last week in this month will be in most places quite early enough. I always sow with the early kinds a few seeds of Autumn Giant: it is so valuable for cutting now and onwards, and it produces a close firm heart in the hottest weather, when frequently the Walcheren is useless.

Sawdust in Gardens.—With reference to my remarks on the foregoing, on page 209, July 3, when answering "Crosscut's" question on page 180, June 12, I had no thought of calling in question "Solicitor's Clerk's" or any one else's answer or experience. If your subscribers will refer to my remarks on page 209, July 3, they will observe "I will *just* (or *only* if preferred) state my own experience." I demur to any correspondent putting words into other's mouths they did not use. I do not think the columns of valuable periodicals, such as Gardening Illustrated, should be made the medium of personal attacks, as such a course would inevitably tend to reduce its value as a medium for collecting and disseminating experience. I did not say I obtained "several," but a "few" sacks (to be exact, however, three). Again, I cannot see how "Solicitor's Clerk" can possibly construe my remarks as "giving the sawdust the full credit of enriching the soil," when I stated most distinctly "I do not know that there would be any manurial properties in sawdust but used as I have described," viz., in conjunction with manure, ashes, soot, salt, and lime, &c.; also a few lines further down: "I can recommend sawdust if used in combination with the other ingredients." I think any one will readily admit that my inference was that I did *not* recommend sawdust alone, but "in conjunction with other ingredients." This latter I still maintain. If "Crosscut" has a garden of clay, if he does as I say on page 209, July 3, I have no doubt whatever that the result will be to him satisfactory. Having saved and had bound the first volume, I have referred to my question on page 397, and I find I asked "whether sawdust would be a good thing to further assist (in conjunction with ashes, manure, and refuse) in lightening the soil." On page 428 "Solicitor's Clerk" and "E. H.," as I understood, kindly gave me their experience; but as I had not the time or opportunity for "charring the sawdust," or "letting it lie in a heap for twelve months," I, after due consideration, decided to do as I described in my remarks of July 3, with the result also therein described. I take it that the object we all have in view is benefiting one another by relating our experience in all the various branches of gardening, and not to pull one another to pieces and carp at words as if we were in a law court, and try and make it appear that some correspondent used words that he did not, as if so I shall once for all decline to answer any more questions by giving my experience; but if our object is mutual benefit—if at any time I state anything that can be improved upon I shall most readily accept any correction, and thankfully, too. "Crosscut's" question being "Is sawdust of any use in a garden? Would it improve a clayey soil?" I reaffirm that, used in conjunction with the material and in the manner described by myself, sawdust is of use, and would improve a clayey soil. If, however, it could be obtained from some stable where sawdust is used instead of straw, it would, of course, be better.—Ferndale. [Whilst we willingly insert any article sent to us which is likely to be instructive to our readers, we must invite our correspondents to confine themselves as much as possible to plain practical facts. Our space has become too valuable to be occupied with needless controversy.—Ed.]

An Easily Made Fumigator.—I have a frame 5 ft. by 4 ft. in which I have kept a quantity of Pelargonium cuttings, and yesterday I noticed that they were being gradually destroyed with green fly. By the following plan I totally destroyed the fly; I got a 2½-in. pot and picked out the whole of the bottom, which then admitted the bowl of a common Brier-wood Tobacco-pipe. This I tightened in with clay, thus making good the bottom with the bowl of the pipe, of course leaving the inside of the pipe open so as to admit a draught of air through the stem left on the bowl, to which I next attached a long india-rubber tube I had by me. I then got a square box, made a hole in the top, so as to admit the small flower-pot and keep it firm. Then a hole through the box on left side, to admit the pipe which was carried through a hole in the end of the frame. I then put an old cornet mouthpiece at the other end of the pipe, into which I blew a gentle current, and thus gradually and evenly filled the frame with smoke. I filled the 2½-in. pot with dry Tobacco sprinkled with a few drops of turpentine, which, when burning, seemed to throw out a nice perfume. When well alight I closed the frame, and of course only blew sufficient air down the tube to keep the frame evenly filled, and at intervals, as I saw the frame clearing. One hour afterwards I took off the light and examined the plants. I found hundreds of flies on the mould dead, not stupified. With a syringe I washed them all out; the plants were then clean and free from any signs of a fly. By filling the frame gradually, the flies run down the plant to escape the smoke, which, of course, fills the top part of the frame first, and rest on the mould in the pot, where the smoke catches them and despatches them. If the frame were filled at once, they would keep on the plant stupified and might not be killed, but this way that I mention does its work gradually and effectively.—A. A.

GLASSHOUSES AND FRAMES.

MARKET PELARGONIUMS AND FUCHSIAS.

Amongst the many nurseries in which plants are grown for market in the vicinity of London few have obtained a better reputation for the production of Fuchsias and Pelargoniums than the establishment at Edmonton—conducted for many years past by the Messrs. Hayes—and which is at all times worthy of a visit, but never more so than early in June, when their large and in all respects admirably managed collections of plants are to be seen flowering in their best form. I visited this nursery about that time, and noted down the names and leading characteristics of the best and most useful kinds of both Fuchsias and Pelargoniums—sorts in every way first-rate for all floral furnishing purposes, and therefore valuable alike to the private grower and nurseryman. Commencing with the Fuchsias, the first variety to claim special notice on entering the large and admirably constructed span-roofed structure in which the plants are allowed to bloom and finish off preparatory to being sent to market was a very fine and free double red variety called Monstrosity. This sort has a good habit, does well in the small pots indispensable to market growers, and the foliage is also handsome, large, and of a deep shining green colour. An unnamed double white kind of very excellent habit was also in grand condition. Another very remarkable double kind called Champion of the World was particularly striking, the blossoms being deep red and maroon, and of altogether uncommon size. Its flowering habit is free, and the growth decidedly inclined to ramble; and, being very vigorous, it will doubtless make a very excellent subject for conservatory decoration. Some of the plants we saw of it at Edmonton had been trained to the iron braces of the roof, and although only in small pots, they had covered their supports, and were literally loaded with festoons of graceful and exceptionally large flowers. I feel sure that all who have to provide for the ornamentation and covering of bare pillars, walls, &c., in conservatories would do well to grow this really fine Fuchsia. Amongst the single varieties, Clipper is very noticeable, being a distinct advance in every way on the well-known and excellent red kind, and in its

day one of the best, viz., Prince of Orange. Sir Bartle Frere is also a capital sort. It has a dense dwarf habit, and large red and violet flowers; one of the very best. Amongst light-coloured varieties Mrs. Marshall and Lady Heytesbury still maintain their reputation; but a light sort named Starlight bids fair to successfully dispute the position which the two first-named kinds have so long held. It somewhat resembles Lady Heytesbury in habit of growth and shape of flowers, but still it is quite distinct and in every way a really admirable kind.

Adjoining this house of Fuchsias are numerous structures devoted to the culture of Pelargoniums, and from amongst a large number of kinds in good flower we selected the following varieties as being in every way first-rate:—Princess of Wales, an extremely free fine dwarf kind—blooms in perfection even in 3-in. pots. In colour it is light rosy flesh, with a white ground, and elegantly fringed. Lady Isabel, a really grand Pelargonium, is bright rosy-lilac in colour, with dark spots, truss large, and habit most robust. Nellie Hayes, light ground colour, with black blotch; profuse bloomer, free and fine. Black Prince, light-edged, black-maroon; very effective and free. Delicatum, a charming kind, light peach, coloured with dark blotch; very free, and without doubt a kind possessing sterling qualities. Lady Blanche, an improvement on the well-known white sort Duchess of Edinburgh. Mrs. John Hayes, a valuable kind; colour pinkish-white, with a crimson and maroon blotch. Maid of Kent, a fringed white kind of first-rate excellence. And La Grande and Prince of Wales, fine bright high-coloured flowers of the greatest excellence. The varieties just enumerated were all seedlings raised in the Messrs. Hayes' nursery; and we can confidently recommend them to the notice of all lovers of the Pelargonium. They are one and all genuine sorts of the market type, and therefore can be grown to perfection in the regulation 4½-in. pot, and are thus available for all decorative purposes.

H. B.

CULTURE AND PROPAGATION OF CHOROZEMAS.

Scarcely any of the Australian plants are brighter, more useful, or more easily cultivated than these Pea-flowered, slender-growing shrubs. Being of free growth, which, when matured by full exposure, is certain to be abundantly floriferous, not much subject to insect attacks, and thriving as they do in a conservatory where most of the ordinary hard-wooded plants would quickly die, Chorozemas are well worth attention. If at any time a specimen becomes leggy or naked at the base, it may be pruned back, placed in a gentle heat, and it soon breaks into young growth. They are easily propagated from cuttings of half-ripened wood in sandy soil under a bell-glass in gentle heat. Seeds also, either imported or home-grown, soon vegetate if good, and make pretty little plants. They will succeed either in peat or loam, or in a mixture of the two, with sand added in proportion to the nature of the soil. In the matter of soil for this and many other plants, I think it is not so well to tie ourselves down too tightly to any particular compost, as all of us are more or less influenced by surrounding circumstances. There are many plants usually grown in peat that might be better grown in good loam than in inferior peat; and where the loam is good and the peat inferior or expensive, I should certainly prefer the loam. There are some plants, of course, that cannot be grown and kept in health in loam. Heaths, for instance, and other fine-rooted plants thrive only in peat. But there are a good many different kinds of loam. The best kind for New Holland plants has a bright colour and a soft, silky feel when handled, and if used in a fibrous condition, with sufficient sand added to make the water pass through freely, the growth will be firm and short-jointed and less likely to run up weakly than when potted in a lighter compost.

One of the good qualities of this race of plants is blooming freely in a small state and their long period of duration. Young plants may be pushed on in spring in a warm greenhouse or early Vinery. All shoots showing a tendency to run away should be pinched back. In this way a good thick base will be made that will in time form a handsome specimen. Some support will be required for the slender shoots as they advance in growth, and there is nothing neater or better than thin deal sticks painted green. These can be made in bad weather, and have a little green paint rubbed over them. Not one more than is necessary to give the requisite support to the plants should be used, as in themselves they constitute an ornament. The plants must not be given too much heat in spring. After pruning, a little warmth and a closer atmosphere will be beneficial for a few weeks, but they should be cooled down early, and be placed in a sheltered situation in the open air early in July, where they may remain till the middle of September. Those plants of such kinds as cordatum splendens, that are started in a little heat in spring, to get the growth made early, will commence to flower in October, and will prove exceedingly valuable and reliable when other flowers are scarce. Any one having a conservatory to keep gay in autumn and winter should have at least half-a-dozen good-sized specimens to help out the Chrysanthemums, Salvias, and other plants. The following include some of the best kinds: cordatum splendens, Lawrenceanum, Henchmanni, and varium nanum, The last is a dwarf kind suitable for a small house.

H.

Dracæna fragrans.—This is one of the noblest of fine-leaved plants for the greenhouse or conservatory. It succeeds best when planted

Fragrant-flowered Dracæna (D. fragrans).

out in a border of sandy loam enriched with rotten cow manure, in which position it will often flower freely. Its flowers are remarkable for their fragrance, but the plant is well worth growing for its foliage alone. We have seen very handsome plants of it grown in comparatively small pots for room decoration.

Fuchsias for Pillars and Rafters.—The old Fuchsia corallina does remarkably well trained up rafters like Vines. Souvenir de Chiswick and Venus de Medici are also two other old favourites that are well suited for the purpose. Plant them out in rich, well-manured compost, and train them up in the form of a single stem, removing all laterals until they are as high as required. After they have bloomed in autumn prune the laterals close in, just as is done in the case of Grape Vines, and start the plants afresh in the spring by applying a little heat and syringing them with tepid water. So treated they will bloom profusely, and are among the most beautiful of all cool conservatory plants. When so grown, cut branches of some of them are very useful for room vases.

Sowing Flower Seeds.—Most hardy annuals, biennials, and perennials will do better if sown in August or September than if the sowing be delayed till spring. Not only is it the most natural time for sowing, but the land is usually warmer and the seeds lie a shorter time in the ground before germinating, and they consequently produce a stronger and healthier plant, and they are less liable to be eaten off by insects; and, lastly, much time is gained, for, instead of sowing the seeds in March, you have young hardy plants ready to put out. Seeds of hardy biennials and perennials are best sown in well-drained ground, arranged in 4-ft. beds, with a track or alley 1 ft. wide between them, for the convenience of weeding, thinning, and lifting the plants. The soil should be in a well-pulverised condition, and if too dry should be well soaked with water twelve hours before sowing. They may either be sown broadcast or in shallow drills across the beds; the latter plan is the best, because it gives facilities for stirring the soil between the rows of young plants. The drills can be made by pressing a 4-ft. rod or straight edge into the soil the required depth, according to the size of the seeds; ½ in. will be deep enough for all small seeds, and when the seeds are sown thinly in the drills, cover lightly with finely sifted soil. If the weather be hot and dry, shade by laying mats, or similar coverings, on the ground. If the patches be small, Rhubarb leaves will answer the purpose very well, and they are usually at hand; they must, however, be removed as soon as the young plants appear. When annuals are sown in the spring in the borders where they are intended to remain, they are usually sown too thickly, and the thinning delayed too long, consequently they never attain their proper development—the flowers are poor, the growth weak, and the whole plant short-lived. This is the main cause why annuals are in many places so unpopular. If sown on good land, and such plants as Nemophilas, Saponarias, &c., thinned out, so that every plant has not less than half a square foot to grown in, they would present a much more satisfactory appearance than they usually do.

Giant Candytuft.—We have received from Mr. Cuthbertson, of the Public Park Nurseries, Rothesay, remarkably fine spikes of a Rocket Candytuft, which he calls Giant Snowflake. The flowers are pure white, and form spikes 4 in. or 5 in. long and 6 in. or more in circumference. Such a fine hardy plant which can be easily raised from seed in autumn or spring cannot be too well known.

Begonia Seed.—A great source of failure in obtaining plants arises from unsound seed. Very few varieties seed under glass, but if planted out it may be had in abundance. To test it before sowing place it in the palm of the hand and blow on it very gently; if it be dissipated like dust it possesses no vitality; you place it on a sheet of letter paper, and if it rolls about like Poppy seed when touched, it is all right. Unsound seed lies dead, like a pinch of snuff.—T. B.

The Great St. Bruno's Lily (Antheric um Liliastrum).—This is one of the finest of hardy plants, and one of the easiest to grow. It only requires to be planted in deep free sandy soil, when it will grow vigorously, and in early summer throw up spikes of snowy white, Lily-like blossoms 3 ft. in height. In dry soils a good mulching with rotten manure would be a great help to it, and in early spring the plants must be examined for slugs and caterpillars, to attacks of which they are rather liable. In Mr. Parker's nursery at Tooting there was a good display of this Lily in June last, from which plants our illustration was prepared. Propagation of this Lily is effected by division of the roots in autumn, which is the best time to plant, or it may be raised from seed when it can be obtained.

Worms in Pots.—It is stated that these can always be got rid of by using for the plants water to which a tenth part of grated Horse Chestnut has been added. Under this treatment, it is said, the worms must either fly or die.

Removing Smell from Liquid Manure.—A small portion of air-slaked lime put into a liquid manure tub will remove the smell, and when the liquid is applied to the soil will destroy worms and slugs.—F.

ANSWERS TO QUERIES.

2680.—**Plants to Flower in Winter.**—Early Cyclamens may flower all through the winter if enough warmth be provided, as also will Chinese Primroses. These are the best of greenhouse flowering plants. Chrysanthemums will bloom well nearly up to Christmas, and these may be succeeded by Christmas Roses in pots; early bulbs, such as Crocuses, Snowdrops, Scillas, and Van Thol Tulips, other Tulips and Hyacinths succeeding. Such hard-wooded plants as Genistas, Deutzias, and some Heaths will also bloom very early if pushed on for the purpose. There are, however, but few plants that bloom naturally during the dull winter months, as a mere cool greenhouse does not much differ from the temperature out-of-doors. Auriculas, Polyanthuses, and Pansies will also bloom early if housed under glass all the winter.—D.

2668.—**Uses of Frames.**—There are many uses to which frames may be put in the winter, but the most profitable must depend upon the wishes of the owners. A large number of half-hardy plants may be housed in them, or even hardy plants in pots of such things as Pansies, Auriculas, Polyanthuses, Violets, Primulas, &c., or they may be filled with vegetable produce, such as Cauliflowers sown late in October to stand the winter, or Lettuce sown about the same time, or some Peas may be sown on pieces of turf for transplanting into the open ground early in March. Radishes may be sown in them quite early, or Rhubarb may be lifted into them for early forcing, or Seakale or Asparagus. In the way of flowers plants of Neapolitan or other double Violets may be forced or even simply grown in them, or seeds of hardy annuals for transplanting in the spring may be sown early in November. Many kinds of half-hardy bedding plants, such as yellow Calceolarias, may also be housed in frames for the winter.—D.

2673.—**Exhibiting Dahlias and Asters.**—Although it is the rule to exhibit cut Dahlias and Asters on boards in which are fixed at proper intervals zinc water-tight tubes, there is really no reason why these flowers might not be as easily shown in Moss. We saw but the other day a fine lot of Carnation blooms shown on a bed of neat green Moss, and thought they looked very charming. A shallow box, say 3 in. deep inside, and painted green, will do admirably if filled with Moss, and surfaced over with some that is specially green and neat, and well pressed down. Some small tubes to hold water for the flower-stems should be fixed in the Moss at proper intervals; but if the Moss be damp and the weather not too hot, even these may be dispensed with, as the Moss will assist to keep the flowers fresh for some time.—A. D.

2672.—**Plants on Graves.**—For the winter planting of a grave garden surrounded by a white stone plinth nothing would be neater than an edging next the plinth of Sedum lividum, dense green, about 4 in. wide, and inside that the rest carpeted with Sedum acre aureum and the golden-tipped Stonecrop; this is a lovely winter and spring carpet plant. Some half-dozen of neat little green and variegated Coniferæ—Cupressus or Thuja—that might be obtained from any nurseryman, might be planted before the carpet plants are put out; this would need but the most trifling attention all through the winter. We employ Sedum lividum, glaucum, and acre elegans, with Sempervivum californicum and Echeveria secunda glauca, Herniaria glabra, and Veronica repens, both dense green carpet plants, on graves in the summer with excellent effect. The result is simple and pleasing and, not least, permanent. A few of the larger Sempervivums are useful as dot plants in the arrangement.—A.

2674.—**Tulips for Show in April.**—As Tulips bloom naturally in the month of April, it is not necessary to plant them in pots unusually early to secure their blooming in the first week of that month. The month of November is an excellent time for such purpose, and to make a good show six or seven bulbs should be put into a pot that measures 8 in. across the top, and be buried about 2 in. deep; the soil should be good and fairly firm. The pots may be stood at once in a cold frame, not exposed to the sun, and be covered with 2 in. or 3 in. of Cocoa fibre refuse to keep out frost. In that position they might remain until the leaves are seen peeping through, when the pots should be removed either into a sunny frame or into a greenhouse, and be pushed on or retarded just as the promise of blooming may be shown.—D.

2679.—**Hydrangeas not Flowering.**—The Hydrangea is naturally a very free flowering subject, but requires at times a maximum of light, a free admission of air when grown under glass, and to be freely exposed to the sun during the summer months. The great point is to secure good, strong, healthy, but not crowded growths, and thoroughly mature them; success is then certain. Any weak shoots should now be thinned out, leaving from four to a dozen or more, according to the size of the specimen. Place the plants now in the open and where they may enjoy the fine influence of sun and air. Keep them well watered, and about the latter end of October place them under cover in a cool house. Keep them just moist during the winter months, and at the turn of the year prune each shoot back, leaving only two eyes to each one. By March growth will commence, when the plants must be accorded a light position; at the same time, if the pots are full of roots, shift them, using a compound of good loam and rotted manure, ramming it well in. Give plenty of air, but avoid chilling draughts. In a cool house by the middle of May the bloom-buds will be showing; a sharp look out must then be kept for green fly, which is easily stopped by dusting with Pooley's powder. Towards the latter end of the month place them in a sheltered situation in the open air, removing them later on to any desired position.—J. C.

The Great St. Bruno's Lily (Anthericum Liliastrum); a hardy plant, suitable for large or small gardens; flowers white.

2627.—**Best Climbing Roses.**—Some of the best Roses for indoor culture are Maréchal Niel, Madame Falcot (yellow), Safrano (fawn), Catherine Mermet (flesh), Duchess of Edinburgh (bright pink), Souvenir d'un Ami (rose), and Cheshunt Hybrid (carmine). For outdoors you may take climbing Victor Verdier, climbing Jules Margottin, Gloire de Dijon, and any of the Ayrshire, Boursault, or evergreen kinds, such as Adelaide d'Orleans, Felicité Perpetuelle, Dundee Rambler, and Ruga.—C.

2628.—**Mildewed Strawberries.**—The mildew is a fungoid disease which is fostered by warm, moist weather. In glass structures during the forcing season it often appears, but is easily stopped if the plants are dusted with flour of sulphur as soon as the fruit is fairly set. In the open air it will be much more difficult to deal with, owing to the liability of the sulphur being washed off by heavy rains before it has had time to do its work. The best advice that we can give is to thoroughly syringe the under surface of the foliage and the fruit as soon as the latter begin to swell. When the fruit is ripening the sulphur is easily washed off again.—J. C.

2624.—**Ferns for a Vinery.**—Any of the following kinds would be suitable: Adiantum cuneatum and formosum, Pteris serrulata, P. cretica albo-lineata, P. scaberula, P. arguta, Polystichum denticulatum and proliferum, Lastrea glabella and decomposita, Asplenium bulbiferum, flaccidum, and præmorsum, Nephrodium molle, Platyloma rotundifolia, Lomaria gibba and lanceolata, and Doodia caudata and lanulata. For hanging baskets the following species are well suited: Davallia canariense and bullata, Niphobolus Lingua, Adiantum Capillus Veneris, Platycerium alcicorne, and Woodwardia radicans. All these may be grown well in a

shady structure from which frost is excluded. Ferns, as a rule, do very well under Vines, the filtered light which they there get being just what they require, and by the time that the days get short the foliage falls and allows them during the dull season to feel its full influence. All that the grower has to do is to create atmospheric moisture in hot weather by frequently damping down the paths and stages, and attend carefully to the watering. Ferns should not be over-watered, but should never be allowed to remain dry at the root.—J. C. B.

2623.—**Plants for Heated Conservatory.**—If Palms are to form a feature in the house, it will be necessary to employ such plants for the rockwork as demand similar atmospheric conditions. Nothing can be more satisfactory for planting on rockwork than the many beautiful species of Ferns which thrive in such situations. The following kinds are all well adapted for the purpose: Davallia dissecta, canadensis, and bullata; Doodia aspera and lanulata; Adiantum Capillus Veneris and cuneatum; Niphobolus Lingua; Platyloma rotundifolia; Pteris serrulata and crested variety, P. cretica albolineata, Nephrodium molle cristata, Microlepia anthriscifolia, and Hypolepis distans. These are all beautiful kinds of moderate growth. With them might be associated Panicum variegatum, Tradescantia zebrina, Isolepis gracilis, and various kinds of Selaginellas. Palms may consist of Chamærops excelsa, Corypha australis, Latania borbonica, Rhapis flabelliformis, Seaforthia elegans, and Areca lutescens. Roses may be grown in the same house, and if trained to the roof, would give just the desired amount of shade to the Ferns.—B.

2625.—**Uses of a Frame.**—A cold frame may be made to shelter a variety of tender plants during the winter, but in that case it must be made frost-proof. This is best effected by driving in some stout stakes all round the frame, about 1 ft. from the boards or brickwork, and stuffing the interstices with Fern or some such dry material. A slip of wood should be nailed to the top of the stakes, so as to hold them all firmly together. This will effectually hinder frost from entering the sides; and if the glass is efficiently covered, there will be but little danger of the inmates suffering even during the most severe weather. The bedding plants may be cleared out and placed in a sheltered situation by the beginning of May, when the frame will be available for raising a number of beautiful annuals, such as Asters, Ten-week Stocks, Balsams, Phlox Drummondi, Zinnias, &c.—these to be planted out when large enough in the open air. When the annuals are thus disposed of, the frame may be planted with Cucumbers, which will yield up to the time it is necessary to think of again providing for the safety of the tender plants.—J. C., *Byfleet*.

2632.—**Gardening in Town.**—For a north wall nothing can be better than Ivy, of which may be taken the common Irish, Algeriensis, and the large Clouded White. The south wall may be given up to Pyrus japonica and P. Pyracantha—the one beautiful in spring, the other brilliant with its bright berries in the autumn. There are no two better flowering wall shrubs than these for a town garden. On the north border might be planted flowering bulbs of many kinds, such as Daffodils, Snowdrops, Crocus, &c.; also Primroses and Polyanthus, Myosotis dissitiflora, and London Pride Saxifrage. We would also try a few of the common kinds of Lilies, such as the Tiger, the Orange, and the old white, carpeting the ground round them with Periwinkles of various kinds, using both the plain leaved and variegated varieties. In the more sun-secluded corners make up a bed of good soil for hardy Ferns, which ever delight by their freshness and verdure. In the more open sunny parts of the garden try Daisies, Pinks, Violas, and Pansies, such as bloom throughout the summer, Arabis albida, Alyssum saxatile, Aubrietia purpurea, and Anemone japonica. Wallflowers would also probably succeed, and may be seen anywhere. The old Honesty is a gay and cheerful plant, but should be sown in March to bloom the next year. Amongst other likely subjects may be be mentioned Sunflowers, to be sown in March; Silene pendula, to be sown now to bloom in spring; the hardy annuals, Clarkia pulchella, Collinsia bicolor, and Nemophila, to be sown in September; Larkspurs and Godetia Lady Albemarle in March, and climbing and dwarf Nasturtiums and Convolvulus in April. For beauty of foliage may be taken Cerastium tomentosum and Stachys lanata, two white-leaved plants; Euonymus radicans variegata, a pretty little shrub; and Rhus glabra laciniata. One of the best of evergreens for a town garden is the common Euonymus. Aucuba japonica is also suitable. The plants above enumerated are all likely to thrive in the situations mentioned. At the same time it is a real matter of difficulty to recommend plants for such places. The unfavourable conditions are very great; and then again soil and situation generally have to be considered. Those who have such gardens to deal with must expect failures; they must try, try again until they find out what will thrive best, and then they should record their experiences, both failures and successes, for the benefit of others similarly situated. Town gardening is yet in its infancy.—J. C., *Byfleet*.

2677.—**Fever Gum Tree** (Eucalyptus).—We cannot understand the Eucalyptus going off in the manner described. It is an extremely easy plant to grow. When the seedlings are large enough to handle, pot them carefully into small pots in a compost of well-sanded leaf-mould and loam, and place them in a close frame or in a warm corner of the greenhouse. Water carefully, giving air when the weather admits, and shade from hot sun. Supposing them to be potted off in April—the best time—by the end of May they may be exposed to sun and air. As the pots get full of roots shift carefully into the next sized pot. Keep them under glass until the middle of August, and then place them in a sheltered situation in the open air until the beginning of October.—J. C. B.

2629.—**Vallota purpurea in Windows.**—If the Vallota bulbs are large enough they will probably bloom this next autumn. The Vallota requires three seasons' growth to gain the requisite strength. You probably gave the manure water too strong. Give a little now; it will benefit them, but let it be very weak. The proper way to use liquid manure is to give little and often. Next April or May if your plants are healthy and the pots quite crammed with roots, shift them into the next sized pot in loam and leaf-mould or loam and peat.—J. C. B.

2626.—**Potatoes Diseased.**—The peculiar turning brown in the leaves of your Potatoes is a common failing of the Early Rose and other American sorts, and it is by no means improbable that yours are suffering from the same affection. There are two probable causes for this. In the first place, the planted sets might have been partially diseased, and the plants are but exhibiting that kind of sickness. It is as probable that the plants affected were cut by late frosts, and the result now seen is but the product of that attack in the spring. The haulm of many of the American kinds is more tender than that of English sorts, and thus the wider appearance of this rust in the Rose and other sorts. The manure does not probably affect the Potato, but sawdust is not a good thing for the soil, as it is apt to breed various fungus growths. Try next year some other kinds of Potatoes and use some guano dressing only or other artificial manure, employ no stable manure, trench the toil deeply, and ridge it up for the winter.—A. D.

2667.—**Sowing Potato Seed.**—This year Potato Apples or seed-pods are abundant on many kinds, and these must be gathered as soon as they begin to colour or become purple. They should be laid on a shelf for the winter, and in the spring it will be found that the flesh of the seed-ball has decayed, and only the clean seed is left. This may be sown at once in pots or pans; and when the seedling plants are large enough, some may be transplanted into the open ground, and others may be grown in pots or boxes under glass. This latter is a useful precaution if the disease be prevalent, as in such case the whole of the plants in the open ground may be destroyed before any tubers are formed, seedling plants in the open ground being longer in forming tubers than plants grown from sets. If kept in pots where the root space is confined, then the plant growth is less robust and tubers are formed earlier. We have now growing in the open ground a batch of seedlings the haulm of which is 2 ft. in height and very strong, whilst others of the same cross in pots will soon ripen off their tubers. Thus, whatever may happen, some seedlings are saved in any case. It may, however, interest you and other readers to learn that little benefit in the way of producing new kinds will result from the growth of natural seedlings. As a rule, these do but reproduce the parent kind. Really good new kinds can only be obtained by intercrossing of sorts, and that is done in this way:—Flowers of one kind are gathered and held, one at a time, with the pollen cases projecting between the two forefingers, with the nail of the thumb placed just beneath. A sharp nick is given to the pollen cases with the point of a small penknife, and the pollen will fall out upon the thumb-nail. If one flower does not give enough then others may be tried. When this is done the pollen may be conveyed, still on the nail, to the flowers of the sort to be fertilised. Two blooms are enough, and the projecting stigma is gently drawn across the nail to take up the pollen. The flowers are then marked with a label and a stake and left until the pods are ripe. We have this year made about twelve such crosses—several with Magnum Bonum and other fairly disease-resisting kinds. We have also employed the new Woodstock Kidney, a kind that produces pollen freely, upon Beauty of Hebron, a first-rate early American sort, and with this we hope to obtain some first-rate early seedlings. Your difficulties begin when your seedlings increase, after two years' growth, as it requires four years' trial to make a suitable choice of the best, and it is not easy to afford space to grow them all.—A. D.

2458.—**Properties of the Auricula.**—The properties of the Auricula are thus defined by a good authority: 1. Pip should be circular, large with petals, equal, firm, fleshy, smooth at the edges, without notch or serrature, and perfectly flat. 2. The tube should not exceed one-fourth of the diameter of the pip; it should be of a fine yellow or lemon colour, perfectly round, well filled with the anthers or thrum, and the edge raised a trifle above the paste or eye. 3. The paste or eye should be perfectly circular, smooth, and of a dense fine white, without crack or blemish, forming a band not less than half the width of the tube, and encircling it. 4. The ground colour should be dense, whole, or forming a perfect circle next the eye; the brighter, darker, or richer the colour, the better the flower, but if it be paler at the edges where they are parted into five, it is a fatal aspect. 5. The margin or outer edge should be a clear unchangeable green, grey, or white, and be about the same width as the ground colour, which must in no part go through to the edge. The stem should be strong, round, upright, elastic, bearing the trees upright without support, and from 4 in. to 7 in. high, so as to come well, but not too high, above the leaves. In the alpine class the flowers have no paste, and, owing to this fact and the disposition of the foliage, are better adapted for growing in the open air.—J. C.

2682.—**Petroleum Stoves.**—In answer to "G. P." respecting the use of a petroleum stove for his greenhouse, I beg to state that I have a house of about the same dimensions for growing Geraniums, Fuchsias, Ferns, &c., and that I procured one of Heap's & Wheatley's patent one-light petroleum stoves for the purpose of keeping out the frost in winter, and it did so admirably during very severe frosts, and I found no injury to my plants from the use of it. It only costs about a farthing per hour in oil, and after being properly filled and lighted requires very little attention. Its cost when new is 38s., and if "G. P." is desirous of trying one of these, I will supply him with mine, as I have no further use for it, having put a flue into my greenhouse in which I have planted Vines since. I will take 20s. on rails here, and will guarantee it in good condition and ready for use.—W. Parlour, *Boroughbridge, Yorkshire*.

2622.—**Jessamine not Flowering.**—Perhaps the plant in question has not yet become thoroughly established. If it is making free growth it will in all probability flower next year. The situation is favourable to its well-being.—J. C. B.

2667.—**Sowing Potato Seed.**—Save the Potato fruits or balls from the best varieties, and when ripe squeeze them in a basin of water to get rid of the pulp. It will require several washings to do this, and care must be taken in changing the water that none of the seed is lost. Strain through a coarse cloth, and place in an airy situation. When quite dry, separate the seeds as much as possible, and keep them in a dry place till next March or April, when sow in shallow drills in the open ground about 7 in. or 8 in. apart. Each seed will produce one Potato, from the size of a small Pea to a blackbird's egg,

and each of a different variety. If anything new or desirable appears, it must of course be propagated from the small single tuber. The last time I sowed Potato seed the little tubers were affected with the disease worse than the planted Potatoes in the garden.—J. C.

2677.—**Fever Gum Tree** (Eucalyptus).—I had six or seven of these plants growing in a 9-in. pot for eighteen months in a cold greenhouse. I put them out in the open ground in rather a stiff soil of a clayey nature (that was a year ago last May), with a little coal-ashes round the foot of the stems; they have stood the severity of last winter. The leading shoots and the branches were cut and injured by the frost, but now they are growing vigorously. The leading shoots have made a growth this summer of 2 ft. 6 in., and the side-shoots 2 ft. The height of my largest plant is 6 ft. 6 in. Any good garden soil will suit them to grow in pots or in the open.—T. FRIPP.

2676.—**Drooping Fuchsias.**—Corallina and penduliflora are two kinds well fitted for this purpose—the former is perhaps the best of the two.—C.

2683.—**Roses on Trees.**—One of the strong-growing evergreens, such as Leopoldine d'Orleans, or Adelaide d'Orleans, or one of the Ayrshire, such as Dundee Rambler, would, we think, be most suitable.—B.

2666.—**Hardy Perennials.**—We consider it much too late to sow perennials generally; the young plants do not attain sufficient strength to effectually resist the severities of a hard winter. Columbines (perennial), Larkspurs, Aubrietias, Violas, Pansies (both fancy, show, and bedding), Wallflowers, and Arabis may be sown with a fair prospect of success. April is the best time for sowing this class of plant.—B.

2675.—**Climbers for Scotland.**—The front of a house might be furnished quickly and prettily with the gold and silver-leaved Ivies and Clematis Jackmani, or lanuginosa hybrids intermixed. The Ivies would cling to the wall, and the Clematis should be trained thinly over it. The Virginian Creepers are very hardy, and Veitchi is very pretty, and clings to the wall like our own Ivy, but they are all leafless in winter. The following are also very hardy and evergreen: Cratægus pyracantha, Pyrus japonica, Cotoneaster microphylla, and Lonicera grata.—E. H.

2662.—**Calceolarias Diseased.**—The disease that kills the Calceolaria in the way described is of a fungoid character, the seat of which is mainly in the bark, at or about the collar. The only remedy is change of soil, with cool treatment in winter to the young stock to secure strong healthy plants to turn out in spring.—E. H.

2663.—**Vegetable Marrows Dying Off.**—The absence of sunshine has made the large leaves of the Vegetable Marrow soft, flaccid, and especially liable to mildew and blight, and the blossoms partake of the same weakly character. Keep the growths thin and pegged out, stopping the leaders if running away too fast. In a small degree the male blossoms weaken the plant, but their presence is necessary to set the fruit if you should require seed.—E. H.

2670.—**Cypripedium barbatum nigrum.**—If the plant in question is healthy and vigorous it will probably now need to be fresh potted. Shift into the next sized pot or pan as the case may be, filling the same half full of drainage and using a compost of the best fibrous peat, with which may be mixed a little chopped Sphagnum and crushed charcoal or small pieces of crocks. Keep close and moist, syringing once or twice a day in hot weather, and shade from bright sunshine.—C. B.

2630.—**Propagating Virginian Creepers.**—Take cuttings of the current season's growth as soon as the leaf falls. Cut them to three eyes, and insert them firmly in light sandy soil. The pots should be kept in a cool situation during the winter, and should be removed to a shady place by the time that the sun gets power. The best way to strike them is to insert them firmly in a north border, where the sun comes but little in the spring.—C.

2631.—**Cut Roses in Water.**—The quality of the water may exercise an influence upon the duration of the blooms. Try a little charcoal in it. This is supposed to exercise a beneficial effect.—B.

2681.—**Strawberries Placed in Heaps by some Invisible Agency.**—The invisible agents who carry off your Strawberries are no doubt either mice, rats, or squirrels. Birds do not store fruit, but eat their fill as they go. Squirrels being naturally frugiverous animals, will store fruit that may be accessible, and rats and mice will ofttimes do the same. If squirrels or rats, small iron gins should be put down; and if mice, any common traps might catch them.—A. D.

2634.—**Eccremocarpus scaber.**—If the roots of the Eccremocarpus are left in the ground all the winter, no doubt the soil is too cold to promote early growth, and therefore it would be best either to lift the roots in the autumn into pots and keep them in a greenhouse, or take cuttings now to make strong young plants to turn out next spring. Also seed may be sown now, and this will produce fine young plants to start early next spring. Your soil may be unsuitable.—A. D.

2682.—**Petroleum Stoves.**—I used an iron petroleum stove called Rippingille's patent, with two wicks each about 4 in. long, all last winter to heat my lean-to greenhouse (18 ft. by 6 ft.), and found that the heat of one wick was quite sufficient to keep out the frost. I did not lose one cutting, or any bedding-out plants. The smell of the oil was always perceptible in the morning, but by giving ventilation during the day, and especially when the sun was shining, I found no ill effects to the plants.—C. J. M.

2669.—**Onion Maggot.**—I don't think there is any certain cure for the Onion maggot, but there are many palliations, among which are salt and soda if used in time. But it is of little use to wait till the Onions are going off rapidly before we apply the remedy. I have had the greatest success with soot and salt—½ in. in thickness of the former, and 1 lb. per square yard of the latter—spread over the surface and lightly forked in about the beginning of February. A further dressing of soot may be given in April in localities much infested with maggot.—E. H.

2684.—**Improving Lawns.**—A very frequent use of the heavy roller and mowing machine will improve the lawn. Newly laid turf often grows very rank the first year or two, but as the land settles down the Grass will get finer; persevere with the roller.—E. H.

2665.—**Rhododendrons not Flowering.**—The situation is a bad one for Rhododendrons—they require partial shade and shelter; the moisture in such a position is sure to do them justice. Can they be moved to some more sheltered situation? They will never be satisfactory where they now are. The situation is, perhaps, too exposed for Lime trees; Poplars would have done better, but the Limes will probably do better, as they gain strength and get well established.—E. H

2641.—**Flies in Rooms.**—I have found Christy's Myocom Fly Gum, which I gave a shilling for at my chemist's, quickly rid my rooms of flies. The moment I opened the box I was besieged with flies eager to get to the contents of the box. Directions are given on the box, so that it is unnecessary to give them here.—FLY CATCHER.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them again.

2752.—**Temperature for Greenhouse.**—Will you advise me as to the temperature to keep a greenhouse in spring, summer, autumn, and winter? The house contains Vines, Geraniums, Fuchsias, and a miscellaneous lot of flowers.—A BIRKENHEAD SUBSCRIBER. [After the Vines lose their leaves, just keep the frost out. When they start into growth do not let the temperature get below 40°, or over 50°. As spring advances 50° to 55° at night, and 5° higher in the day will not hurt. When May has passed you have only to give plenty of air whenever the weather will permit. Fire-heat at night will not be necessary.]

2753.—**Pansies.**—What should I do now with Pansy plants which flowered all spring and summer, and are very straggling in appearance. [Cut them down.] Also what should I do with young Pansy plants sown this spring, and now forming very small flowers? They have grown into middling sized plants already. I want to have good blooms next year. [Plant them out and keep the buds picked off.] Is it too late to sow fancy Pansy seed to stand out during the winter.—FANCY. [No.]

2754.—**Planting Strawberries.**—I am about to take up my old Strawberry plants: shall I take off the runners now? I am told Michaelmas. Which is right? In some cases there are three or four suckers on one stem. Shall I use them all, or only one, and which one? Would not the one nearest the plant become stronger and better if I were to nip off the others? I want to plant right off; not pot and replant.—BEGINNER. [Take those suckers which are well rooted, and plant in well manured land at once. If there are no rooted runners, peg the best of them to the ground, and let the old plants remain till the young runners are rooted, then separate them from the old plants, lift them carefully with a trowel and plant. One sucker on a stem is sufficient; leave the strongest.]

2755.—**Fruit Trees on Houses.**—Will any fruit trees succeed trained against the wall of a house facing east, thereby receiving the sun's rays till about twelve o'clock only?—XENOPHON. [Late Pears and late Plums would do in such a position.]

2756.—**Fruit Trees for Fence.**—What fruit trees will succeed trained against a wooden fence facing the north?—XENOPHON. [Gooseberries, Currants (red or white), Pears, Plums, and Cherries.]

2757.—**Cactus not Flowering.**—I have a white Cactus which was a cutting some six or seven years since. It has grown well, but has never flowered. Can you inform me of the best way to treat it in order to induce it to flower?—ALTONIAN. [Place it in a sunny window, and give it just enough water to keep it from flagging. When it shows flower water more liberally.]

2758.—**Young Quick Hedges.**—*G. W. R.*—Unless these are kept cut well in for the first few years they get very bare at the bottom. Being now 18 in. high, we should cut off 6 in. or more from the top, and cut the side shoots in such a way as to let the hedge take the form of a ridge. Always keep the hedge widest at the bottom, or it is sure to get bare.

2759.—**Mildewed Roses.**—*E. M. D.*—Syringe often with water in which has been dissolved a good proportion of flour of sulphur; also when the leaves are wet dust with sulphur through a pepper-box. Give plenty of water at the roots. Keep the shoots thin enough to allow of air and light circulating round them, and mulch with the half-rotten manure or short Grass.

2760.—**Pinks, Carnations, and Picotees**—*H. C. H.*—From the old Clove Pink (Dianthus caryophyllus) originated the Carnation and the Picotee. They are both florists' varieties of that Pink, and although florists laugh at people who cannot distinguish the difference between Pinks, Carnations, and Picotees, it is more than they can do with certainty only by rules of their own making. The Picotee, however, is generally known by its being all one colour, edged or laced with another colour, although there are some kinds without any lacing whatever. The Carnations known as "selfs" are those of one colour only; bizarres are striped.]

2761.—**Tree Fern.**—*G. K.*—The first fronds from a newly imported Tree Fern are often deformed, and rot off. Keep the stem of the plant moist with the syringe, and when good roots have been formed you will get good fronds.

2762.—**Hoyas.**—*R. P.*—The best kind is H. carnosa, which is best planted out in a warm greenhouse in loam and brick rubbish, with a little rotten cow manure added. H. bella may be grown in pots in any ordinary greenhouse, but is better in a warmer temperature.

2763.—**Magnolias against Walls.**—*W. A. S.*—They require deep sandy soil, a good mulching with rotten manure in summer, a soaking of water during severe drought, and, if possible, a slight protection such as would be afforded by a boarded coping.

2764.—**Plants Losing their Flowers.**—*Working Man.*—Plants bought from a nursery and placed in a window often lose their blossoms and buds. It is better to buy the plants in a young state and grow them in the window. Plants lifted out of the ground and potted should be placed in the open air in a shady place for a few days before being put in the window. Give all plants in windows all the air and light possible and keep them clean.

2765.—**Malformed Roses.**—*R. B.*—Cold winds in spring and insects often cause malformed Roses, but more often it is a freak of Nature, the cause of which cannot be accounted for.

2766.—**Vine Leaves Turning Brown.**—*Birkenhead.*—You do not say what state the Grapes are in. If they are ripe the leaves are sure to begin to turn yellow now. If, however, the Grapes are still green, something must be wrong.

2767.—**Draining Seed Pans.**—*A Learner.*—It is of course impossible to drain seed pans without they have holes in the bottom. Either get some of this kind, or make a good hole in the bottoms of those you have. Place over the hole a piece of broken flower-pot hollow side downwards, and over this put ½ in. of crocks broken to the size of Peas—bricks will do, or even ashes sifted; over this put a layer of Cocoa-nut fibre, flaky leaf-mould, or Moss, and then put on your soil.

2768.—**Ants in Cucumber Frame.**—*Subscriber.*—Dust a little Scotch snuff on the surface or a little of Pooley's Tobacco Powder or even soot, being careful not to put any on the foliage.

2769.—**Frame for Violets.**—How should I make up a frame for winter Violets?—ALVASTON. [Place the frame on a bed of leaves, lawn mowings, and stable litter. Then fill the frame full of half-rotten leaves to within 12 in. of the glass. Then put on 6 in. of soil, and plant the plants dug from the open air with good balls of earth attached to them. Water and keep close for a few days.]

2770.—**Double Wallflowers.**—*Creditonia.*—These are hardy perennials, and if cut back slightly after flowering will form bushy and floriferous plants the following year.

2771.—**Hardy Campanulas from Seed.**—*Miss A.*—Most of these can be raised from seed sown now or in spring. Sow in shallow boxes or pans of fine soil. Place them in a shady situation in a frame or under a handlight if you sow now, but if you sow in spring a little warmth must be given to get the seeds to germinate. The seed may be obtained at the principal seed shops. We cannot recommend any particular tradesman.

2772.—**Virgin Cork.**—*Ivy.*—Consult our advertising columns.

2773.—**Answering Questions.**—*Ernest H.*—All questions are inserted or answered in GARDENING free of charge if written separate on one side of the paper only. Three questions at one time are as many as any one should expect answered.

2774.—**The Garden of England.**—Which shire or county is called the Garden of England?—L. BUCKINGHAM. [Kent.]

2775.—**Warming a Conservatory.**—*Cotton.*—You cannot do better than have a saddle boiler fixed near the chimney which you wish to utilise, and two rows of 4-in. pipes all round the house. This in the end you will find the most economical way of heating, although its first cost may be greater than other methods of heating. If a good draught is secured for the fire you may with a saddle boiler burn all the cinders, and even ashes from the house; also the very small coal.

2776.—**Red Spider on Vines.**—*J. H.*—A dry atmosphere and insufficient air causes this. Vines which are grown with plenty of air early in the season make thick, firm leaves, which resist the spider to a great extent, but their leaves, such as are grown in a close atmosphere, are sure to suffer. If the Grapes are cut, well syringe the Vines with cold water, and wet every portion of the house. The house may be kept shut up for a day when the sun is shining brightly provided the whole surface inside the house is kept thoroughly saturated with water. After this throw open the house night and day, and get the wood ripe for next year, and in winter have the house whitewashed, painted, &c., and the Vines thoroughly cleaned.

2777.—**Herbaceous Calceolarias.**—*Horological.*—When large enough to handle, prick them out singly into small pots, shifting them into larger ones as necessary, keep them in a sunless situation till the end of September, giving enough water to keep the soil moist. As you have no frame, you must put them in a window—not a sunny one—and give them all the air and light possible, and fumigate them occasionally for green fly.

2778.—**Geraniums Growing Straggling.**—*E. A H.*—Use good turfy loam and sand made tolerably firm in the pots, and keep the points of the shoots pinched out. This, if they are not in too shady a place, and they receive plenty of air, and are near the glass, will induce them to grow bushy and flower profusely.

Notice.—SENDING PLANTS TO NAME.—We have lately received many boxes of plants to name without their having attached to them the slightest clue whereby we could tell by whom they were sent. We would remind our readers that all boxes of plants should contain a note respecting them, otherwise it is impossible for us to deal with them.

Names of Plants.—*A. W.*—Fuchsia Meteor.——*T. R.*—1, Aspidistra lurida variegata; 2, Red Valerian (Centranthus ruber.——*R H.*—We cannot name Apples from a single specimen, and that a very poor one indeed.——*W. P.*—The light Fuchsia is Rose of Castile, the dark one Prince of Orange.——*Gunnersbury.*—The Flame Nasturtium (Tropæolum speciosum); seed or division of the root.——*Erin.*—Mesembryanthemum of some kind, which we cannot say without seeing flowers; it requires open sandy soil and a sunny situation.——*Connaught.*—Napoleon Bigarreau.——*R. B.*—Campanula Trachelium.——*Crazula.*—The common Corn Marigold (Chrysanthe-

mum coronaria.)——*Miss F.*—Campanula fragilis. Loam, leaf-mould, sand, and a few pieces of limestone or brick rubbish, plenty of air, light, and water.——*W.*—1, cannot be recognised; 2, Sibthorpia europæa.——*Rusticus.*—We cannot name Pansies.——*Ted.*—We got your letter, but no box.——*W. R. T.*—Tropæolum speciosum.——*J. I.*—No plants enclosed.

QUERIES.

2779.—**Culture of Coleus.**—Will some one give me any information of how to manage these plants: the heat required during the winter? the kind of soil they like? and whether they require much water? &c.—K. L.

2780.—**Onion Maggot.**—I want to sow a small Onion bed. How am I to keep clear of maggot in the early part of the year? Some of your readers strongly advise the use of salt, to be used about half-a pound to the square yard, and the same quantity to be repeated after an interval of some time. I acted on the advice given, and yet the maggot has destroyed a lot of mine, and still is destroying them. What am I to do?—ROBERT LAMBERT.

2781.—**Leeks not Growing.**—I have some Leeks growing with which I have been trying to do my best, but very few of them seem to grow erect or to thicken as I should like to see them; but instead of growing erect and thick they are only small, and the leaves lying perhaps, from some of them at least, 18 in. upon the soil. The Leeks are a first-class kind, so the fault must be with me.—R. L.

2782.—**Caterpillars in Cabbages.**—My Cabbages and Savoys are all being eaten away by caterpillars; the whole of the plants are completely wrecked. My time being greatly taken up, I cannot give them all the attention they need, but I spend a certain amount of time each day to look for them, and I kill all I catch, but they do not seem to diminish in the least. Is there anything I can put on the Cabbages and Savoys to destroy the caterpillars?—G. H. MORTIMER.

2783.—**Caterpillars on Gooseberry and Currant Bushes.**—What moth or butterfly lays the eggs that produce the plague of the present and last season? My garden is swarming with a large brown moth having orange underwings. Is it this insect that does the mischief? I have had three distinct hatches of the caterpillars. The last one is now coming out of the eggs. It is hopeless to try in a large garden to exterminate them, as fresh eggs are constantly being laid.—RUBY.

2784.—**Growing Lilies.**—I saw the other day an account of Lilies. Would some one kindly give an article on their culture, soil, and times of planting?—A WORKING MAN.

2785.—**Lily of the Nile not Flowering.**—I got a Lily of the Nile (Calla æthiopica) three years ago; I cannot manage to get a flower on it. I potted it in a 7-in. pot filled with fresh soil, also leaf-mould and a sprinkling of sand, in March last; all the length it has got is four leaves. I water it well and grow inside a window. What should be done?—A WORKING MAN.

2786.—**Planting Bulbs.**—I want to plant Tulips, Narcissus, Crocus, Leucojums, and Muscaris. When is the proper time of planting the above? and when do they require to be lifted? Do the Crocuses require to be lifted at all? I grow them in pots and boxes outside a window.—A WORKING MAN.

2787.—**Pansies Rotting Off.**—Can any one tell me what causes my Pansies to wither and die? The roots seem to be all rotted off close to the stem, but the gardener cannot explain what is the reason.—BOB.

2788.—**Nature Printing.**—Will some one give me a short sketch of the process of nature printing from leaves, Ferns, &c.?—W. A. L.

2789.—**Uses of Sewage in Gardens.**—I have a cesspool requiring to be emptied. What is the best mode of using the contents in a small garden having a shallow soil upon chalk?—H.

2790.—**Sowing Everlastings.**—Can any one tell me if it would answer to sow Helichrysum seed in autumn for the purpose of having early and strong flowering plants? if so, when should the seed be sown? and what protection would the young plants require through the winter?—AMATEUR.

2791.—**Columbines.**—Do these plants require any particular soil or treatment? I cannot succeed in growing them well in my garden.—H.

2792.—**Honeysuckle Dying.**—Last autumn I planted a Scarlet Trumpet Honeysuckle. It made two shoots this spring, and until a few weeks ago seemed to be doing well; since then one of the shoots have died and the other seems to be dying. Can any one suggest the cause, and if so the remedy? It is in a light and fairly good soil on a south wall.—J. J.

2793.—**Stove and Greenhouse Plants.**—Will some one give me the names of eight stove plants that are the best for supplying cut flowers in winter, and if to be planted out or grown in pots? Also best eight for same purpose suitable for intermediate or warm greenhouse, not to include Bouvardias or Primulas.—D. D.

2794.—**My Failures.**—Will someone give me some information on the following subjects? I have a quantity of Raspberries; they make excellent growth each year, but produce no fruit; the canes are very prickly. My Red Currants do not make any growth or produce scarcely any fruit. The autumn-sown Onions (about half of them) have rotted off as far as the earth has touched them; they have not been watered at all. The earth is in good heart and rather stiff.—WALTHAM.

2795.—**Greenhouse on East Aspect.**—If I place against the wall of a house (facing the east) a greenhouse, can I grow in it Peaches, Roses, or any other kind of fruit or flowers? Of course the greenhouse placed thus will receive the sun's rays only till about twelve o'clock noon.—XENOPHON.

2796.—**Plants for Frames in Winter.**—I have always grown Calceolarias successfully in a frame by simply protecting them a little in the severest part of the winter. Can any one inform me of other useful plants that can also be grown in the same way?—SUBSCRIBER.

2797.—**Araucaria imbricata Failing.**—I have a fine specimen of this tree about twenty-five years old which begins to lose some of its lower branches, while the tips of other branches are turning yellow. Is there anything to be done to stop the process of decay?—G. H. L.

2798.—**Flowers all the Year Round.**—As I am one of those who like to see flowers at all seasons of the year, and being anxious to make the most of a small piece of ground, I should feel obliged to any reader for a hint on what kinds of flowers for blooming out-of-doors in the late autumn may yet be obtained either by cultivation or by the purchase of inexpensive kinds. My present stock will, I suppose, cease flowering during September. A hint would also be acceptable on the best method of sowing annuals now for blooming in the spring?—RUSTICUS.

2799.—**To Keep Rain Water Pure.**—Can any correspondent kindly advise as to the best means of keeping rain water pure? We live in the country on the top of a hill where the air is pure, but the one drawback is scarcity of good spring water. To make up this deficiency we catch in large tubs all the rain water we can from the buildings, but find it all has more or less a disagreeable smell. Should the tops of the tubs be kept exposed to the air or covered over? and is there anything that could be put into the tubs to act as a drainer, and to purify the water? and what is recommended? We also have a house in the town, and find the rain water there much purer (so far as smells are concerned) than in the country, which surprises us. The tubs used are brandy or port wine casks of a large size.—C. G.

2800.—**Ants in Houses.**—Can any one inform me the best method of getting rid of these pests? I am informed the presence of ants is a sure sign of damp. Is this correct?—F. T. P.

2801.—**Grass Going Brown.**—My Grass has become within this last two weeks very bare in places and seems to be dying. I am not aware of anything having been thrown upon it. What can I do to restore it?

2802.—**Botanical Distinction of Fuchsias.**—I have read the remarks in GARDENING about Fuchsia coccinea, and I should be much obliged if correspondents would describe the botanical distinctions between F. coccinea, F. Riccartoni, F. gracilis, and F. Thompsoni, and any others that are similar? I have four kinds or more which are similar, but not identical. But though I can see distinctions between them I have no means of naming.—A. B. G.

2803.—**Garden Hammock.**—Would "A. T. L.," who writes on the above subject, June 12, or any other correspondent of GARDENING ILLUSTRATED, kindly give me and other readers a little information as to the construction of these hammocks. I have made one of thin twine netted 2-in. mesh, 6 ft. square, and continued the ends out 18 in. with strings, and whipped them over a small ring with a groove round the outside, so that the strings all pass round the ring, and the rope to suspend the hammock runs through the centre, but do all I will to it I cannot get it to hang right, for as soon as any one gets into it, it twists so much that you must be very careful, or will find yourself thrown to the ground.—HAMACA.

2804.—**Caterpillars on Lime Trees.**—Can any readers inform me what can be done to destroy small green caterpillars, which have eaten the leaves of young Elm, Sycamore, and Lime trees in an avenue?—E. J. W.

2805.—**Dandelions on Lawns.**—We have lately taken a house which had been void for some years, and the lawn seems composed of Dandelions. Can any one give me an easier method of getting rid of them than the apparently endless way of digging them up? Would constant rolling and cutting eradicate them in time?—CONSTANT READER.

2806.—**Blooms Dropping from Scarlet Runners.**—What is the cause of all the blossoms of my Scarlet Runners falling off without leaving the Bean? The ground has been well manured, and the plants seem very healthy and apparently free from insects, and the stems when broken appear very juicy. There are few birds in the neighbourhood, and there are no slugs in my garden.—BRAYBOURNE.

2807.—**Copying Machine.**—I am unable to get Crawshaw's Dye. I have got a sixpenny bottle of Judson's Violet Dye. Ought it to be diluted with water? If so, with what quantity?—A TEACHABLE READER.

2808.—**Freesia refracta alba.**—Last autumn I bought a dozen bulbs of this, and potted and treated them the same as I would Lilium bulbs not having shown any signs of growth. I have just turned them out of the pot, and find that every bulb has produced another bulb as large as itself. Can any one tell me how to treat this plant through the medium of GARDENING ILLUSTRATED?—WASHINGTON.

AQUARIA.

Aquarium Difficulties.—I have read "Newt's" communication with interest, especially his method of making an aquarium. He asks for the opinion of fellow-readers with reference to the loss of his minnows' fins and tails. It is highly improbable that his tadpoles are the culprits, for they are herbivorous, and subsist upon the minute algæ, so plentiful in ponds and aquaria; nor do I think the tadpoles' masticatory apparatus sufficiently sharp or strong to bite off a fish's tale or fin. I should sooner be prepared to hear that the minnows had bitten off the caudal appendages of the tadpoles. But is "Newt" certain no other enemy has been introduced to his aquarium? Probably the minnows have been fighting among themselves and thus got damaged. "Newt" also complains of his want of success in stickleback keeping. We have always believed that sticklebacks are the hardiest and most interesting fish to keep in an aquarium, and out of about fifty brought home about six months ago two have died. The remainder are still as healthy and active as ever, and that in water supplied by the Southwark and Vauxhall Company, which has not the reputation of being absolutely pure. The question suggests itself, "How were these thirty sticklebacks of 'Newt's' brought to London?" If they were crowded together in a small vessel without sufficient vegetation, or were much shaken up by railway journey, or the vessel exposed to the sun, either of these circumstances would be sufficient to ensure their death soon after arriving in a strange water. I would, however, advise "Newt" not to be disheartened, but to get a fresh supply of these interesting creatures, with which I hope he will have more success.—E. STEP.

Food for Fish.—What is the best kind of food for gold fish in a globe?—H. S.

Water Plants and Fish.—I have a small tank in a rockery in the conservatory. Will any one tell me the best kinds of plants to grow in it to keep up a display as long as possible? Also what kinds of fish can I put in the tank besides gold fish, minnows, and snails?

HOME PETS.

Canary with Swollen Feet.—My canary is suffering from soreness and irritation of its feet; the skin is scaly and swollen and red at the joints. I bathe and put olive oil on them every morning, but they appear to be getting worse. Can any one suggest a remedy?—N.

Canaries Unhealthy.—I have kept canaries for twenty years, and I believe that all the effects mentioned may be produced by allowing them to be in a thorough draught. The parents being sickly were not equal to the task of feeding the young ones.—A. H. L.

Swelling on Bullfinches' Feet.—The horny lumps may be only dirt collected through the bird not washing, and maybe the cage has not been kept scrupulously clean, or it may be a disease which birds suffer from occasionally. If the former, which I hope it is, the best way is to gently catch the birds and immerse its feet in warm water, and then endeavour to take the lumps off, which, if they are only dirt, will come off easily.—A. d'A.

Bullfinch Not Washing.—I keep a canary and thrush; when they will not wash I take a small waterpot with a fine rose, fill it, and pour the water over them as they are in the cage; also I take the birds out and well wash their feet, as cage birds suffer with disease in the feet if not kept clean; also I cut their claws if they are long.—H. C., *Dartford*.

2777.—**Rabbits.**—Can any one tell me of a really good book on rabbits?—HOME PETS.

THE HOUSEHOLD.

Preserving Carrots.—Will some one kindly give me a simple receipt for preserving young Carrots in ginger syrup? I have seen them often, but do not know how to preserve them.—HOUSELEEK.

Sago and Fruit Pudding.—Weigh ¼ lb. of sago or tapioca, put in a pie dish that will hold 3 pints, cover the sago with 1½ pint of cold water, and put in a moderate oven until it looks clear, and has absorbed the moisture. Have ready prepared about 1 lb. of fruit, such as Rhubarb, cut up small, Apples pared, cored, and quartered, Gooseberries, Raspberries, &c., picked from stalks. Stir them into the swollen sago, and add about 3 oz. of brown sugar. Put in the oven to bake for about one hour. A little cream or milk poured on as sauce makes it most delicious. The sago must be well stirred to break any lumps there may be. It may be eaten hot, or if poured into a wet mould can be turned out and eaten cold.—J. W.

A Gentleman of Colour on Brown Bread.—Seems to me dat most people hab only half a loaf when Nature meant dem to have a whole one. Dey hab de white half, dat is nearly all starch, and all de odder part is giben to de rabbits and pigs. My heart is full of sorrowment when I see a poor woman go into a shop and put down good money for bad bread. If bread had always been white, it would nebber hab been called a staff, but a broken stick. Dare are thirteen minerals in de human body, and dey are all packed away in dat lubly little loaf called a grain ob Wheat. It costs de farmer many pounds for manures of different kinds dat de Wheat may be perfec; and arter money, hard work, and Nature hab done all dair work in the most perfec manner, de miller takes dis bootiful golden grain all to pieces, unpacks all the marv'lous 'gredients wid which it am stored, and actu'lly has de wickedness to take some ob it away and trow it to de pigs and rabbits, and other poor relations, when Nature sent it all for us.—*Evans' Journal*. [True as this may be, all interested in the matter should make a clear distinction between the filthy, and injurious, and ill-tasting brown bread made by many bakers in towns and the best and purest article. The sweetest and best bread in the world is that made on the griddle in Irish and Scoth farmhouses, without yeast, and raised by means of sour milk or good butter-milk and soda.—EDITOR.]

GARDENING
ILLUSTRATED.

VOL. II.—No 76. *SATURDAY, AUGUST* 21, 1880. PRICE ONE PENNY. WITH COLOURED PLATE.

HARE'S-FOOT FERNS.

MOST people are acquainted with the Hare's-foot Fern. It derives its name from the brown rhizomes or surface roots which bear a resemblance, both in form and colour, to the foot of a hare. There are many species of this Fern suitable for greenhouse culture, and also some that succeed best in a temperature higher than that of an ordinary greenhouse. The Davallias or Hare's-foot Ferns make excellent basket plants, and they are also suitable for growing on rockwork, their creeping rhizomes clinging to moist stones, and growing rapidly in a moist and shady situation, and they are also well adapted for culture in pans, as will be seen by a glance at our illustration of Davallia Mariesi, which represents a very elegant evergreen Japanese Fern sent to Messrs. Veitch and Son, of Chelsea, by their collector, Mr. Maries, after whom it is named. It has a creeping rhizome, about ¼ in. thick, covered with ash-brown scales. As a basket Fern for the conservatory and greenhouse it is one of the best. Its flexuose rhizome spreads freely in all directions, and its numerous fronds present an enduring mass of verdure. A first class certificate was awarded it by the Royal Horticultural Society last year, and the Royal Botanic Society also gave it a certificate of merit—a distinction which it well deserves. Among the older kinds there is Davallia canariensis, which grows well in any ordinary greenhouse, and yields abundance of bright green triangular-shaped fronds (leaves), which are well adapted for surrounding bouquets or vases of flowers. D. aculeata is a kind which may be used for covering damp walls or pillars. It climbs rapidly, and supports itself by clinging to the moist surface. D. elegans is also a charming kind, growing 2 ft. or more in height, and producing rich dark green shining fronds. D. pentaphylla is a dwarf kind which will thrive in a Fern case. The best soil for these Ferns is fibrous peat or light turfy loam, with a liberal quantity of well-decomposed leaf-mould and sand added. The best time to repot is in February or March, just as the plants begin to make new growth, and they may also be again potted in August, when large specimens are needed.

JAPAN HARE'S-FOOT FERN DAVALLIA MARIESII.

PTERIS SERRULATA.

THE common form of this plant has been cultivated in our gardens for more than a century. Of the crested varieties to be met with in gardens about a score have been found deserving of varietal names, some of the most distinct of which are here given :—

P. serrulata cristata.—This simply-crested form is a pleasing plant, especially when young, when its pinnæ seem to all radiate from a point ; it neither attains the size nor becomes so pendulous as the normal form, but this character adapts it for growing in small Fern cases, where the nor-

mal form, by its rapid growth, is unfitted on account of the length of its pinnæ.

P. serrulata angustata.—Of the dwarf forms this is the most elegant. Its pinnæ are very slender, not more than half the width of those of the preceding; the margins are very regularly toothed, and the points terminate in a digitate crest, with winged segments. Like the foregoing, it seems best suited for furnishing Fern cases.

P. serrulata polydactyla.—This is a form with distinctly forked pinnæ, the divisions of which are again cleft near the extremities, and the final divisions terminate in a broad, flat crest.

P. serrulata pellucida.—This variety is a recent addition to the group, and is remarkable for its much-branched crests and pellucid texture, which give it the appearance of some of the green sea-weeds.

P. serrulata maxima cristata.—The uncrested form of this plant grows more erect from its earliest state, is of a darker green, and altogether more robust than the type. The crested variety includes numerous forms, which, though agreeing in dimensions, vary extremely in breadth of the pinnæ and division of the crest.

VEGETABLES.

POTATOES.

A GREAT deal is at the present time being written about the Potato, because this is the season of its harvest, and the disease is appearing largely in the tops, although so far not in the tubers to any considerable extent. I trust no amateur growers will be in too much hurry to lift their crops until they have had every chance to mature and ripen in the soil; still farther, that when they do lift they will wait until the soil is fairly dry, because the cleaner or freer from soil the tubers come out the better will they keep when stored. Pulling off the haulm, if done carefully, is not attended with risk, but it is not at all certain that much is gained thereby; whilst if some hot days were to intervene, the leaves that are affected and the fungus would soon be roasted up. Cutting off the tops is a dangerous proceeding, because the cut stems continued for several days to emit sap over the soil, and is productive of much harm. I must say that all these experiments have never yet repaid for the labour involved. If those who plant Potatoes would but give them more space between the rows much less mischief would happen, because, first, there could be more soil added in the earthing-up, a most important matter, leaving the ridges fully exposed to the sun and air. I am now lifting grand, clean crops of many kinds from rows 3 ft. apart, and well earthed up. The samples are large and clean, rows of 50 ft. giving from 60 lb. to 70 lb. of fine tubers. Although the soil is naturally holding, yet in spite of so much rain, it is about the tubers quite dry and free, and this and the cleanness of the Potato I chiefly attribute to the fact that before planting in the spring I buried in the furrows a good layer of fresh, sweet, long, stable manure, and this has acted at once as drainage, and as a stimulus. No pleasure in gardening could be greater than that of lifting such beautiful crops as I am now doing, and that too of some seventy kinds.

The Potato Crop.—This is this season the finest in the locality that has been lifted for many years. Complaints as to the disease are few so far, but the fungus has made itself more evident in the haulm during the past few warm nights than through all the rains and thunderstorms. Although we have now occasional rains, yet I do not think there is danger of any large amount of moisture falling for some time, and rather hope for the fine autumn. Should this hope be realised, the tubers will be far better in the ground till well ripened than out of it. Exposure to the air before the skins are well set is fraught with danger and deterioration to the tubers. The market growers have mostly cleared out their stock of Ashleafs, and are now hard into the Regents, which are turning out a fine clean crop. The simple fact that the Regent is so good and so healthy speaks volumes for the condition of the Potato crop. Champions are not largely grown here, the growers dislike them, but Magnum Bonum is a great favourite, and is largely grown. This kind will give enormous crops presently, growing chiefly for seed purposes. I have here a large number of kinds, but all are so good, that special selection would be almost invidious. The American kinds come out fine this year, and quite free from disease. Early Ohio, Early Rose, Beauty of Hebron, Mr. Bresee, Manhattan, Snowflake, Triumph, Trophy, Climax, American Purple Kindey, all give grand crops, but of course, although good in their way, do not equal our best home kinds in table quality. Of English kinds the Early Lemon Ashleaf, Early Market, Bedfont Prolific, Porter's Excelsior, Lye's Wiltshire, Snowflake, International, Grampian, Rector of Woodstock, White Emperor, Woodstock Kidney, Schoolmaster, King of Potatoes, Feltham White Round, and Vicar of Laleham, so far as lifted, are all cropping splendidly, and so far are healthy. If my own crops correctly typify the general condition of the Potatoes in other places, there ought to be this year at the Crystal Palace the finest show of tubers that has ever been seen.

Early Ohio Potato.—This is the earliest of all the American Rose type of Potatoes, has of all the shortest haulm, resembles Beauty of Hebron in colour of skin, but is rounder and turns out a much more even table sample. I strongly recommend this kind because I find it in table quality quite superior to all other Americans; indeed, even now when boiled it becomes as floury as a Regent and quite as good. Its short top admits of its being grown in rows at 24 in. apart, and on a warm border will, I am sure, beat all the Ashleaf Kidneys in earliness. It is not a new American kind, but has only recently been introduced into commerce here.—A. D.

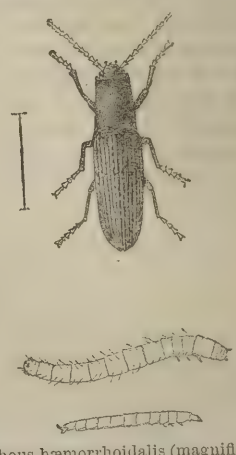
GARDEN DESTROYERS.

WIREWORMS.

(ATHOUS HÆMORRHOIDALIS AND AGRIOTES LINEATUS.)

WIREWORMS are generally most abundant in newly-made gardens, particularly if the ground has been previously pasture land. When they are present in great numbers they can only be got rid of by much trouble and labour. There have been many means suggested for keeping this insect in check, but few are of much use unless the ground be well cultivated, and care taken to destroy every one which may be found. No portion of a garden should be allowed to remain undisturbed and covered with weeds for any length of time, for such places form regular hotbeds for the propagation of these and many other insects. Most birds, particularly rooks, starlings, blackbirds, thrushes, pheasants, and partridges, are very fond of wireworms, and if the ground be kept properly worked, so that they can get at them, they destroy immense numbers. Moles also are their deadly foes, and certain carnivorous beetles belonging to the family Carabidæ kill quantities of them. Slices of Potatoes or, in default of these, slices of Beetroot, Turnip, Carrot, &c., or pieces of Lettuce or Rape-cake have been found very useful as baits when buried about 1 in. below the surface near any plants which have been, or are likely to be, attacked by these grubs. Each bait should have a small stick stuck into it, so that it can be removed and examined; this should be done every morning, and the wireworms which will be found boring into the bait destroyed. Some recommend merely laying these baits on the ground as being more efficacious than burying them, a plan which is certainly simpler, and might be tried as well as the other. Some plant Daisies, the roots of which the wireworms are particularly fond of, to attract them from any plants they wish to preserve. Gas-lime, and a mixture of lime and fresh soot, well incorporated with the soil, are very effectual in keeping them in check. Common salt strewn over the ground and well dug in (about 6 cwt. to the acre) is also much recommended. Rolling the ground is of little or no use, as the wireworm is so tough, and generally so far below the surface, as to be unhurt by any ordinary rolling, and the ground is made harder, and consequently birds have more difficulty in getting at them. Fortunately, the wireworms are not free from parasites; a very small ichneumon fly finds them out and deposits its eggs within their bodies. They are also infested by a minute intestinal worm. Both these parasites no doubt assist in checking their increase. The beetles should always be destroyed whenever they can be found. They are at times attacked by two species of minute ticks, but it is very questionable if their numbers are reduced by these parasites.

A very successful cultivator of Picotees and Carnations tells me that he always had the earth in which he grew his plants carefully



1.—Athous hæmorrhoidalis (magnified).
2.—Wireworm (magnified and natural size).

looked over twice on the potting bench to be quite sure there were no wireworms amongst it; and even then he placed a piece of Carrot in each pot, which was examined every morning, and the plants were not considered safe until the Carrot had not been touched by wireworms for a few days. In 1874, a piece of land near Worthing, which had not been cultivated for two or three years, during which time it had been lying waste, was made into a flower garden;

3.—Agriotes lineatus (magnified).
A.—Side view of thorax of ditto.

during the first year nearly all kinds of herbaceous plants suffered much from the attacks of the wireworm, particularly Carnations, Pansies, Daisies, Polyanthuses, and Sweet Williams. Whenever a plant was found to be drooping, it was lifted and a careful search made for the worms, when sometimes five or six would be found on one plant. The second year the damage, though considerable, was much less, the same plan being pursued. The third year the number of wireworms was so much diminished, that no particular care was taken to exterminate them, but every one met with was destroyed, as well as any of the beetles. The garden is now nearly free from them.

Wireworms appear to be almost omnivorous, as far as the produce of kitchen gardens is concerned, and the flower garden fares little better. Such plants as Irises, Ranunculuses, Anemones, Lobelias, Dahlias, Stocks, and the plants already mentioned, are amongst those particularly liable to be attacked. Young trees in nursery gardens often suffer much from these insects. The Ela-

teridæ are a tolerably large family, containing nearly sixty British species. The beetles are all long, narrow, and oval, with very long thoraxes; they are usually of a dull brown or yellow colour, but some are more gaily coloured; they are mostly very active and fly well; if disturbed they generally fold up their legs and antennæ and feign death, and if on a flower fall to the ground. Their legs are so short, that if one chances to fall on its back it could not right itself were it not for the following peculiarities in its structure: The thorax is furnished beneath with a small spine (fig. 3A), and which fits into a cavity in the breast when the insect lowers its head and thorax. If the beetle falls, or is laid on its back, it raises its head and thorax, which forces the spine into the cavity; then forcibly trying to straighten itself again, the spine flies out with an audible click, and the insect is raised several inches into the air and generally falls on its feet; if it does not, it makes another jump. The beetles are quite harmless, and may generally be found on flowers, particularly umbelliferous ones, stems of Grass, under stones, &c., during the spring and summer. The females are provided with longish ovipositors, which they can protrude or retract at pleasure; with these they deposit their eggs, which are very small, oval, and whitish, during the summer below the surface of the ground, near or on the roots of some plant. The number of species of which the wireworms are destructive is not exactly known. A very large majority live in decaying and decayed wood, but probably ten or twelve, or perhaps more, are injurious to garden and farm crops. The grubs of the following species, however, are very destructive and very common, particularly those of the first two—Athous hæmorrhoidalis, Agriotes lineatus, A. sputator, A. obscurus. The wireworms are all long, narrow, smooth grubs, of a yellowish colour, and are very tough and horny, resembling very much the common meal worm in general appearance, and they are tolerably active. They are very long lived and grow very slowly, for they do not attain their full size for five years; at the end of that time those of the largest species are about ¾ in. or rather more in length. When full grown they descend deeper into the earth, and form small, oval cells in which they undergo their change to the chrysalis state.

Athous hæmorrhoidalis is about ½ in. long; the head is black, with shining eyes of the same colour, and is furnished with a pair of dark, reddish-brown antennæ, consisting of twelve joints. The thorax is bluish-black in colour, and covered with very minute pale hairs, which are scarcely visible to the naked eye; it is long and narrow, with the sides nearly parallel, and terminating in a spine at each angle of the base; the wing cases are rather wider than the thorax, and are long and narrow; they are not quite as long again as the head and thorax together; the sides are nearly parallel, but gradually converge to a point; they are of a dark reddish-brown colour, covered with fine pale hairs; they are striated with several finely punctured longitudinal lines; the legs are short with long feet, and of a chestnut-brown colour.

Agriotes lineatus is about ⅝ in. long, and is considerably stouter in proportion than the foregoing species; the head is small and blackish; the antennæ are reddish-brown, and consist of twelve joints; the thorax is dark brownish-black, shaded at the edges into chestnut; it is nearly as wide as it is long, and very convex; both sides terminate at the base in a spine; the wing cases are long, oval, and convex, with somewhat parallel sides; they are striated longitudinally with several punctured lines, the spaces between the lines being alternately brownish-black and chestnut; the entire insect is covered with minute pale hairs.

The wireworms of different species are very similar in appearance, but they can be distinguished by the last joint of the body, which varies in form; the distinctions are, however, not worth mentioning here. They are all long, narrow grubs, horny and very convex above. Their bodies are composed of twelve smooth, yellowish joints; the three first each bear a pair of short legs; the last is furnished below with a retractile tubercle, which serves the purpose of a seventh leg; this last joint is generally roundish and flat at the top, and usually more or less toothed at the edge, but varying in this respect according to the species. The first joint of the body is much larger than the three following ones. The head is somewhat darker than the rest of the grub; its mouth is furnished with minute feelers and a pair of strong, toothed, reddish-brown jaws; there are a few scattered hairs on the body. The chrysalis is nearly as long as the perfect insect and of the same form, all the limbs of which are distinctly visible through the semi-transparent skin in which they are wrapped. G. S. S.

FRUIT.

STRAWBERRY CULTURE.

A PAMPHLET, consisting of some fifteen pages, on "How to Grow Strawberries with Success," by Mr. W. Lovel, Weaverthorpe, York, has recently reached us. Amongst other useful advice contained in it we find the following on the

Preparation of the Soil.

"Before you build a house," says Mr. Lovel, "make sure that you have a good foundation; and before you plant Strawberries, mind and have the land in good order, deeply cultivated, well manured, and clear of weeds and slugs. Three months is not too long to be making preparation, but six months is better. A bare fallow from autumn to midsummer is a good preparation for Strawberry planting, but a better way is to grow a crop on the land during the spring months. What is the best crop to grow, so as to have the land in good condition and at liberty by the first or second week in July? There is no previous crop, in my opinion, so suitable as a Potato crop—I mean a well-cultivated early crop of Potatoes—to have the crop off the land by the middle of July, ready for taking up three weeks or a month before the general crop is ready, when they are worth from 2d. to 3d. per lb. in the market; worth, if a good crop, £50 to £60 per acre. In this district we have sharp frosts during the month of May (6° to 10°) nearly every season, and Potato tops are liable to be cut off if left unprotected. Now, although a slight frost in our valley will spoil the most promising crop, yet, with a little forethought and contrivance, they may be saved. For a crop of early Potatoes I plant the first week in April, or as soon after as the season will permit. Mona's Pride Ashtops are the sort I use, having had the sets spread out in a light, warm place two or three weeks previous to planting. In a month from planting the tops will be bursting through the soil, and I now commence operations with the hoe and fork, hoeing the land over, stirring the soil round each plant, and digging the intervals over with the fork. You must watch the weather closely, and if there be the least sign of frost pull a little of the loose soil over each Potato. You may protect them from frost in this way for a few days, but if the land be in good order, and the Potato sets properly sprouted before planting, they will grow themselves clear of the soil in a short time, and some other means of protection must be adopted. Rough straw bands, the rougher the better, placed over each row, and held up by short stakes, will protect the tops from a sharp frost. I have also found the bushy tops of the common Whin or Gorse to answer admirably in affording protection from frost to both vegetables and fruit trees. Cut into lengths of 18 in. to 24 in., and stuck in the ground on the north or east side of the plants, they will save the crop from harm during a sharp frost, and after they are done with in the garden they will come in useful to kindle the fires with in the house; but 'It is bristled with thorns, I confess,' therefore be furnished with a pair of stout gloves before attempting to handle them. I am a mighty advocate for thorough cultivation of the soil, therefore I never miss a favourable opportunity of working the land where the Potatoes are growing. The more you work the land the faster the Potatoes will grow. You become thoroughly interested in the work, and all sense of labour and trouble is annihilated—toil becomes a pleasure. The Potatoes are planted in rows 30 in. apart and from 9 in. to 10 in. between each set, and if you wish your crop to do well—to grow quality as well as quantity—do not crowd the plants together, but let them have plenty of air and sunshine. Hoe among the crop once a week during the period of early growth, and at the same time fork over the intervals. If this be done, two-thirds of the land gains all the advantages of a fallow, and by the time the Potatoes are ready for earthing-up the land is in as fine condition as possible, as mellow as meal; such a thing as a weed is never seen, and as for the slugs, they have all disappeared—died of hunger, or perhaps emigrated.

"Now this is the land to plant Strawberries on. As soon as the crop is off the land dig it over two spits deep—it will be all the better for the deep digging—subsoil it, though do not trench it; be careful about trenching, or perhaps you will get wrong. I have seen land that has been trenched made so barren by the operation that even weeds have refused to grow on it for a season. I never trench land before it has been subsoiled two or three seasons previously, for I have found from experience that bringing the raw and hungry subsoil to the surface and burying the top soil is a great mistake. Keep the top soil on the top, and dig the second or bottom spit over, letting it remain at the bottom. If the land has been well cultivated, there will be neither weeds nor slugs to trouble you, and it may be either planted at once or it may have a few weeks' rest. If the land be poor, do not be afraid to give it a good dressing of manure before planting—a barrowful to every row of thirty plants will not be too much. Neither animals nor plants do well if they are pinched for food, and Strawberries are no exception to the rule; in fact, they are in this respect somewhat like our Saxon forefathers, 'gross feeders.'

"I have spoken of Potatoes only as the crop to precede Strawberries, but I suppose it will not always be convenient to have them so. I know of no crop that will leave the land in such fine condition, therefore I give Potatoes the preference; and if any of my readers are anxious to make money fast, I feel quite certain that Potatoes and Strawberries are two of the best crops they can cultivate for this purpose. But Strawberries will grow after any crop if the land be properly prepared. A crop of early Cabbages or Peas will leave the land at liberty in good time. The objection, however, to these crops is, that the ground is left in a harsh, dry condition, and it will require some little time before it will be ready for planting on. Cabbages often harbour a host of slugs, and if proper precautions are not taken to clear the land from these troublesome customers they will make sad havoc of the ripe fruit. Extra care must be taken to get the land into a good state of cultivation. If it turn up harsh and clotty after the last crop, work at it till you get it into a mellow state, for it is a waste of time to plant either Strawberries or any other crop on unprepared soil. By all means give it a short summer fallow for four or five weeks, and if it be forked over two or three times it will be all the better for it, but it need not be dug two spits deep more than once. In some cases Strawberries have to be planted after Strawberries. This should be avoided as much as possible, but if there be no other situation available, no time should be lost in getting the old plants removed and the land dug over, and I should recommend a winter's fallow before replanting the bed, which may be worked over in spring and planted as soon as the weather is favourable. The great point to secure success is to have the land in a nice mealy state some time previous to planting.

"Having got the land into a fit state, the next important point is to secure some good plants, well grown, well rooted, and of good sorts, early, mid-season, and late croppers. I would recommend every amateur to cultivate at least one or two of each class. To grow a crop of fine large fruit the first season after planting, the runners should be rooted early in July. I always endeavour to get my first runners rooted during June, and as soon as they are nicely rooted I remove them to a piece of land specially prepared by thorough cultivation and plenty of manure, and plant them at a distance of 1 ft. apart each way, and here they remain until I have my land ready to receive them; it may be as early as July, or as late as October. I make a point of never planting before the land is in a good state of cultivation, and, further, I always contrive to remove them from the nursery-bed to their fruiting quarters during showery weather."

With this came a list of Strawberry plants grown for sale at Weaverthorpe, in which, in addition to all the best kinds usually cultivated, may be found the names of some that are new and well worth a trial.

Fruits Ripening in Orchard Houses.—Some people have an idea that stone fruits ripened on the open wall are better flavoured than those ripened in cool houses. Where such is the case it should be taken, I think, as a sign that something has been wrong in the management of the house. The chief sources of colour and flavour in stone fruits are light and air. Fruit trees that are growing in a dark, crowded, ill-ventilated house, and that during the last week of approaching maturity receive the same quantity of water that had been given previously, are not likely to produce fruit worth eating. But if the fruit be exposed to strong light, abundant ventilation insured, and less water given during the last ten days or so of their ripening, good-flavoured fruit will generally be obtained. Of course, I am assuming that the trees are healthy, the foliage in good condition, free from red spider and other insect pests, and only allowed to carry a reasonable crop.—H.

Fruit for Tarts.—Autumn-bearing Raspberries pay well for extra attention in the way of mulching, thinning out the weakly growths, and tying up the fruiting canes, if necessary to keep off the ground, or to improve the flavour of the berries by a freer exposure. If dry weather prevail, a good soaking of water will assist them. Red and White Currants on north walls will keep in a good condition through the autumn if well preserved from birds and wasps. Hexagon netting will do all this effectually, and at the same time admit a free circulation of air.

The Gooseberry Caterpillar.—Hand-picking is of but little avail in the case of this pest, as it increases in numbers with extraordinary rapidity. But one habit belonging to it gives us at once an efficient method of outflanking it. When full fed its habit is to penetrate the ground a short distance, and there spin a cocoon in which it undergoes its changes from the grub state to that of the fly, coming up as the perfect insect in about three weeks, the autumn larvæ remaining unchanged in the cocoons in the earth until the next spring. Taking advantage of this habit, the best remedy is to spread old sacks or rags thoroughly saturated with tar all over the actual ground covered by the tree. The tar does not injure the trees and catches the grubs as they fall with the intention of penetrating the ground to become pupæ, at the same time kills those already there and prevents their coming up out of the ground as the perfect insect. It is well to remember that for every two caterpillars allowed to escape a plentiful crop of new larvæ may be depended upon for the next season. Dusting the trees with sulphur is but of little avail, and the use of Hellebore, as has been recommended, is not only useless, as the caterpillars care nought for it, but it is highly dangerous, as I have known cases of poisoning arise from eating the fruit of the plants dusted with it. It is of no use destroying the old trees and planting new in their place; the new trees will be eaten quite as much unless the surface of the ground be also skimmed off to the depth of about 6 in. and burnt.—C. H. Griffith, in *Reading Mercury*.

Ripening the Wood of Fruit Trees.—The growth of fruit trees being now pretty well finished for the year, all laterals or breast-wood remaining should be removed, to allow the free access of air and sunshine to the main leaves on the spurs or branches from which a crop is expected next year. This will also at the same time improve the colour and flavour of the fruit now approaching maturity.—E. H.

Fruit Trees in Pots.—In October last, Mr. Hawkins, Ewenny Priory, Bridgend, Glamorganshire, sent us some photographs of his fruit trees in pots, of one of which the annexed illustration is a reproduction; and along with them the following account of the results of his mode of culture: "Wall fruit this summer has proved to be a complete failure in this part of South Wales. I think it my duty, therefore, to strongly recommend orchard houses and pot trees. We have now had nearly three years of failure out-of-doors with the wall fruits, and they have not paid for the labour bestowed on them. Owing to our situation being low, we get dreadful fogs and white frosts. My idea is that walls would pay better furnished with Plums and Pears. I have two orchard houses filled with trees in pots, and trees on the back wall in my lean-to house, which is slightly heated, but my span-roofed one is a cool house. In both houses I always get a good crop. The trees have only 3 ft. of ground each on which to stand, and yet the Peach and Nectarine trees this year in both houses averaged five dozen fruit each, large and small. On Plums and Cherries there were a great many more. Half-a-hundred trees can be grown in a medium-sized house. As the fruit from one tree is gathered, I place it out-of-doors and give the others a little more room. I have a Plum tree in a 15-in. pot which ripened 154 fine fruit. I have Pitmaston Duchess Pears weighing 1½ lb. each. Three Cherry trees carried seventy-six dozen. Pot trees in orchard houses are very profitable, and when in bloom they are a grand sight. The Peach called Prince of Wales has borne 89 very fine fruit, and is now in a 15-in. pot. The tree is twelve years old. Souvenir du Congrès, though a small tree, bore twenty Pears; it is in a 12-in pot; Durondeau,

Souvenir du Congrès Pear.

in a 13-in. pot, twenty-four Pears. Coe's Golden Drop Plum, in a 13-in. pot, has borne seven dozen very large fruit. These are not the only ones I have had like this; I have had more than half-a-hundred quite as good.

Potting Orchard House Trees in Pots.—Mr. Rivers says the soil about the roots should be "regularly pounded with a heavy pestle," and he attributes failure in most cases to loose potting. In potting such trees, if the soil be at all light or friable, it is certainly difficult to ram it so hard as to cripple their root action more than is desirable. All stone fruits at least exhibit marvellous power in penetrating hard soils. If the soil be healthy, the nearer it approaches the consistency of a soft burnt brick, the better they seem to like it. When the soil is rammed so very hard, however, in pot culture it is particularly needful to attend to watering, as the hardened mass of soil soon dries. In orchard house culture, firm potting, plunging, and liberal watering are points of more importance than anything else.—C.

Raspberry Arches.—I am glad to see that some one has tried with success what is the almost universal method of training Raspberries in the north. When four plants, forming the corners of a square, are tied two and two, so as to cross each other in the centre of the square, one set of canes always acts as a sort of buttress, and prevents the canes from being blown about with the wind most effectually. I have grown them in that fashion this year with most successful results. I unfortunately neglected to loosen the tyings before the buds began to shoot, so that the berries on the upper part of the canes were small, but every bud on the lower part of the canes started into growth, and produced a shoot from 18 in. to 2 ft. long laden with fruit; and the new canes are ripening so well, that one or two from each stool have already blossomed, and some are laden with berries which, in a green state, are already above the average size of ripe fruit.—J. D.

SOWING ANNUALS, PERENNIALS, &c.

Autumn-sown annuals should be sown in the open ground and, generally speaking, where they are to remain, the object being to get larger plants and a better display of bloom, as well as earlier flowering. The plan is usually adopted with spring-flowering annuals which are sufficiently hardy to stand the winter, and can so be brought into bloom and cleared away to make room for bedding plants. The best sorts for the purpose are—Virginian Stock, Nemophila insignis and its congeners, Silene pendula and its varieties, Collinsias, and Candytufts. No advantage would accrue from sowing these in the greenhouse now. There are several biennials and perennials, however, as well as many showy annuals, which could be grown with advantage with the help of a greenhouse, which could be slightly heated in the event of severe weather. Given the power of keeping the house at a temperature of about 50° in all weathers, the following would be a good procedure:—

Procure and sow now in pots or pans of light rich soil mixed with leaf-mould Campanula medium calycanthema, C. pyramidalis and C. pyramidalis alba, Aquilegia vulgaris (single and double), Delphiniums (mixed) and Delphinium nudicaule, Digitalis gloxinoides, Pansies (exhibition and Belgian), Primula cortusoides amœna, and perpetual Carnations and Picotees. None of these plants present any difficulties to the beginner. They must have plenty of air to prevent them getting drawn and weakly and moderate watering. As soon as the plants are large enough to handle they should be pricked off into separate pots. Those named before Pansies are large plants and will require large pots. The Campanulas and Aquilegias make good pot plants, and may serve to teach a beginner how to manage those. The Pansies will bloom before spring, and the best only need be kept. The Carnations and Picotees may either be retained as greenhouse plants or planted in the open ground. In the last week of February sow a pot of Hunt's newest Sweet Williams, Calandrinia umbellata, and Anagallis grandiflora in variety. In March sow Indian Pinks and Dianthus diadematus fl.-pl. After February, every day on which the outside temperature in the shade is over 40° all the air possible should be given, and all the plants except Calandrinia and Anagallis gradually accustomed to the outside air by the beginning of April; unless the weather is very cold and inclement, all the plants, except these two, should be in their blooming places in the open ground. In the middle of March sow Phlox Drummondi and Stocks, and Antirrhinums if desirable. Plant out the Stocks after hardening off as soon as large enough. In the last week of April or thereabouts, according to season, all the remaining seedlings may be hardened off and planted out. The heat may now be raised to 60°, and a good lot of Asters, Zinnia elegans (double), and Balsams sown; these require to be grown quickly in a steady temperature and planted out the instant the outside temperature is fully established at something like the same pitch. A selection of these will help to decorate the greenhouse as well, and many permanent greenhouse plants can be raised from seed during the first summer. Some experience of hardy plants should be gained before florists' flowers are attempted. Many of these have been nursed and coddled so long, that they have acquired a delicate consti-

tution, which unfits them for amateurs' culture. Calceolarias, Cinerarias, Chinese Primulas, and Cyclamens are easy to manage, however, and so are border and Alpine Auriculas, Primroses, and Polyanthuses; but these latter and their allies require more attention in the seed-pans than amateurs can usually give them, and can now be purchased as strong seedling plants, generally of better strains than the seeds can be bought of at a cheap rate. Bedding plants, properly so-called, such as Geraniums, Iresines, Alternantheras, &c., are not suitable for greenhouse culture in winter and open ground culture in summer; that class of plants require a house specially constructed for them, so that they can be kept as near the glass as they would be in an ordinary frame. Echeverias, however, can be kept anywhere if safe from frost and kept very dry. I kept some in an unheated greenhouse through a long winter by never giving them a drop of water except when the temperature was considerably above freezing point. By bedding-out time only about four leaves in the centre of each plant were alive, but they recovered and became strong plants in a fortnight when planted out. The silvery-leaved Centaureas are also very manageable if kept dry and airy. Amaranthus melancholicus ruber can be sown in heat in spring; it is an annual. Golden Pyrethrum can be treated in the same way; it is nearly hardy. The bedding Lobelias can also be raised from seed, but as that does not come very true it is better to buy plants. J. D.

Godetia Whitneyi.—This is, without doubt, one of the best annuals in cultivation. I have tried it now in nearly all kinds of soil that can be found in the neighbourhood of London, and cannot see any variation in its habit or behaviour. It only requires to be sown where it will get at least half the day's sunshine, and thinned out to 18 in. apart when it has made four leaves or so, and it will claim the admiration of every one who sees it in its flowering season.—J. D.

Sweet Williams.—I quite agree with "A. D.'s" remarks in GARDENING about the character of the Sweet William, and its suitability as a border plant When once a flower has been improved to the point reached in Hunt's strain, with smooth-edged petals, circular pips, and spherical trusses, it is a pity it should be allowed to run back to unimproved forms, for the culture of these by anyone tends to prevent seed of improved varieties being saved in any neighbouring gardens. Many years ago Mr. Glenny recommended the Sweet William as a likely subject for improvement into a florist's flower, and indicated scarlet and black as the combination of colour to be aimed at; but the perfection attained with light flowers in Hunt's and similar strains would seem to indicate improvement to be most likely to be obtained in the lighter colours at present. There should not be much difficulty in getting good strains from seed, as the bees seem to avoid the flower. It is not too late to sow seed to flower in spring if the plants are not moved, but only thinned out. The characters to aim at are a circular flower, with no indentation where the petals meet, thick in petal, and all the petals marked alike, the colours meeting each other in clearly defined lines without any feathering or flushing into each other. The truss of flowers should be a ball, and all the flowers forming it should remain in perfection until the whole are opened. All flowers having the feathered edge of the natural flower should be destroyed. A batch of seedlings raised last year have behaved in a way which would seem to indicate the following culture as a good one to insure the rapid multiplication of any particular variety:—Sow in pots, and allow the seedlings to become a little drawn and lanky before planting out. Plant out in light loam, dressed only with a little leaf-mould or loam from rotted turves, planting the seedlings so that a few of the lower joints are under the surface of the soil. When the blooming stems are well above the foliage prick in a dressing of guano all round the plants, give plenty of water in dry weather, and a further slight dressing of guano just before the flowers begin to open. The effect of this treatment has been a vigorous lot of strong stocky shoots from the buried joints of the plant, all rooted and ready to plant out as soon as the bloom is over. Another lot of seedlings from the same pot, which were planted in the same way, but in a rich turfy loam, show no signs of blooming. The main stems which should rise for bloom creep along the ground, throwing up shoots suitable for cuttings from every joint, and a little sheaf of them from the tips of the main stems, so that each plant would now furnish over a hundred cuttings. If the planted out shoots taken off after the first bloom could be induced to behave in that way, six hundred or more plants of one variety could be bloomed the fourth year after sowing the seed.—J. D.

Snowy Phlox (P. nivalis).—Amongst the Phloxes are several distinct types which differ in habit and time of blooming, but they retain in a well-marked manner the general structural characters upon which the genus was established. Thus we have a group of dwarf, trailing plants, all essentially early spring bloomers and admirably adapted for the rock garden, and we have the tall autumn Phloxes which constitute one of the most effective types of plants belonging to the herbaceous border, and which have received such attention at the hands of hybridisers that in point of variation their name is legion. To the first of these groups the plant here illustrated belongs: it is called the Snowy Phlox (P. nivalis). It possesses procumbent habit of growth; the flowers are of snow-white purity. Its specific title has therefore a double significance, being alike expressive of the appearance which its flowers present, and of the locality which it affects—near the snow-line of the Rocky Mountains. Drained

Snowy Mountain Phlox (P. nivalis).

ordinary garden soil, with a good sunny exposure, constitute the necessary elements of success. Though perfectly hardy and unaffected by even extreme frosts, they cannot endure the damp atmosphere of mild winters, the result being large patches of decay, if not absolute death of the plants. None of these species seed freely, and their increase must be by means of cuttings or layers; the former require very careful manipulation, as they are liable to break off just above the node or joint to which the leaves are attached, thus completely neutralising the chances of success. A sharp knife and a careful hand will soon remove the two or three pairs of leaves with their included buds without damaging either the slender stem or joint; and these, if taken off in July, when the branches are just commencing to harden, and inserted in sandy soil in a frame where they can be shaded from full sunshine, and given the benefit of midnight dews by the removal of the lights, will soon root and become good flowering plants the following season. Where large patches are growing, the readiest mode of increase is sprinkling sandy soil over the entire plant and working the same gently amongst the branches with the hand. If this be done during the summer or early in autumn, the trailing branches will be found to have formed roots, and may be readily removed and planted elsewhere the following season. By this means well-established plants are formed at once; but where numbers are required, increase by means of cuttings is preferable.—J. C. N.

Stock Mauve Beauty.—This lovely Stock is very fine indeed this year, the double-flowered plants forming massive pyramids of bloom, and rich in perfume. It is one of the sweetest scented, as well as the most pleasing of all summer Stocks; 250 plants gave sixty singles only, all the rest being doubles. Seed was sown under glass in March, and the plants dibbled out into the open ground at the end of May.—A. D.

Œnothera Fraseri.—If any one were seeking a hardy summer-blooming plant to form a bed, I should certainly commend this Œnothera as the best and most continuous. The flowers are of a soft and pleasing yellow, and are freely produced for a very long time; in fact, nearly all through the summer. The growth is somewhat prostrate, and the shoots are drawn upwards by the sun and the blooms exposed freely. Now that the earlier growths are getting over a mass of shoots are coming up from the base of the plants, and all full of bloom. It would make an effective plant to margin a bed of shrubs, or a raised basket bed, or, indeed, would look well in any suitable spot.—A. D.

Two New Clarkias.—These two new varieties of Clarkia, named Hardy's Purple King and Salmon Queen, are now very showy with me. Purple King is of a rich purple colour with red anthers; Salmon Queen is of a fine glowing salmon-pink, deepening to magenta-rose before the flowers fade. Both varieties produce a large proportion of double flowers. They have only got one fault, which is that they do not carry their flowers in clusters at the tips of the shoots, but on short stalks at the axils of the leaves in the manner of Balsams. Their growth seems very much affected by the nature of the soil they are grown in. I have some growing in light sandy soil which are nice stocky plants 18 in. high, with flowers just touching each other, while others which are growing in a bed of turfy loam are 4 ft. high and 3 ft. across, with the leaves and flowers far apart. Their habit of growth and flowering makes them peculiarly suitable for the tops of sloping banks and other positions where they would be seen from a lower level than the plants are growing at, and also for pot plants for windows. The habit of the plant is exactly like that of Solanum capsicastrum (the Winter Cherry). The flowers are rather over 1¼ in. across.—J. D.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

Aug. 23.—Sowing Radishes in frames to keep them from birds; potting Stocks, Phloxes, Tropæolums, Nemophila, and Lobelia; potting up the Neapolitan Violets, taking them up with large balls; putting in cuttings of Hollyhocks and Achillea Clavenæ; layering White Chrysanthemums; planting Strawberry plants, viz., Keen's Seedling, Garibaldi, President, Eclipse, Dr. Hogg, Oscar, Sir J. Paxton, Elton Pine, and Hautbois; staking Mignonette; tying pot Calceolarias; tying up Lettuces; shifting Poinsettia cuttings into 4-in. pots; putting several Lilium lancifolium roseum under cover; putting Asters in pots under walls in shade; repotting a few Sikkim Rhododendrons and Azaleas; earthing-up and watering latest-planted Cauliflowers; digging land for August-sown Lettuces; clearing Pea land for young Strawberry plants; giving all Celery a little earth to keep down suckers; cleaning last August-sown Cabbage stumps to make sprouts for winter; giving Lilies a top-dressing of manure; getting in some of each sort of herb for drying.

Aug. 24.—Sowing Bath Cos and Stanstead Lettuces; potting Cyclamens, also double Tree Violets; putting seedling Cinerarias into flowering pots; put in cuttings of Coleus, Heliotrope, and Ageratum; laying Cerastium in Box edging for planting in spring; planting Cucumbers in pit to crop well in October; filling up the Cabbage and Endive where eaten off by grubs; shaking out and repotting Pelargoniums; putting autumn-sown Onions in the sun to dry; finishing nailing summer wood on all wall trees; tying up and earthing some Endive; taking up for seed Ashleaf Kidney Potatoes.

Aug. 25.—Putting in Carnation cuttings; planting Stocks on warm border; finishing nailing Peach trees and exposing the fruit to the sun; taking up Plaintains on lawns; washing Azaleas with Tobacco-water for thrips; getting up all Potatoes; putting manure in span-pit for winter Cucumber plants; clearing land for Strawberry plantation; making a Mushroom bed; picking off dead flowers in flower garden; tidying up flower beds.

Aug. 26.—Sowing Mustard and Cress, also Cucumbers, for fruiting in February; potting Iris, large-flowered sorts; cutting down double Pelargoniums and remaining Lilacs; putting in cuttings of Centaureas in single pots in cold frame; digging land for and planting August-sown Incomparable and Imperial Cabbage; tying up Yew trees; parting some Aralias; putting the Solanums under glass; getting all stand plants set thinner on ashes; putting last year's pot bulbs in baskets to dry; thinning autumn Carrots.

Aug. 27.—Potting Schizanthus; staking Heliotropes in pots; getting all Chrysanthemums tied as quickly as possible; shifting spring-struck Tree Carnations into 5-in. pots for flowering; putting Centaurea and also Lobelia

seedlings into open pit; putting the Strawberry plants in pots a little thinner; shifting late Cucumbers into 10-in. pots; gathering Keswick and Hawthornden Apples; getting autumn-sown Onions stored away; pulling the whole of the spring-sown Onions; finishing cutting Laurels.

Aug. 28.—Potting Guernsey and Belladonna Lilies, also Hollyhocks, Brompton Stocks, Pinks, and Carnations; putting in cuttings of Oxalis; planting a few Walcheran Cauliflowers, some July-sown Cabbage, and 1st of August-sown Bath Cos Lettuce; tying up Asters; repotting latest-sown Balsams; watering French Beans under wall; taking off young Strawberry plants; thinning last-sown Mignonette; cutting off straggling shoots from Briers and Roses.

Flower Garden.

Pansies.—Cuttings of these may be put in whenever it is convenient. The old plants will make a fine autumn display if the very old spent stems are cut out. All small, weak stems should also be pinched out and used for cuttings. Place a rich dressing of rotten manure and loam in equal portions evenly over the beds between the plants; then peg down the medium growths over the compost, and if the soil is rather dry give a good watering. The small, hair-like roots run into the dressing in a mass, causing the plants to make a corresponding growth above ground.

Chrysanthemums.—After the roots have got fairly hold of the soil in their flowering pots they should receive strong manure water every other time they are watered. They will bear it as strong as any plant in cultivation. The Mushroom-shaped style of training is the most in favour with those who grow them for exhibition, but it is unnatural and useless for general decorative purposes. Plants of the larger varieties, confined to from five shoots each, neatly tied to a stick, the head of the plant brought out to about twice or thrice the diameter of the pots they occupy, will be found the most useful, and this will give them ample room for the development of their foliage, which if they are well grown will be of the darkest green. As the shoots of the large kinds branch out in growth, they should be thinned to the number of flowers the plants are intended to carry, leaving one flower to each shoot. The plants will carry from six to eighteen, according to their strength. To those who have not tried this thinning process it may appear a great sacrifice in quantity; but either for cutting or for decoration on the plant, one good flower is worth three inferior ones, and flowers so treated will last fresh on the plant fully a third longer than others that have been insufficiently thinned. The Pompones also require thinning, but not so much as the large varieties, neither in the reduction of the number of shoots nor in the number of flowers each shoot will carry; these may be left from three to half-a-dozen to each terminal shoot.

Budded Roses.—Those that were budded the first should now be looked over and the ties slackened, otherwise, through the thickening of the shoots, the bark will be all but cut through so far that the shoots are liable to be broken off by the wind, in which case the labour bestowed will be lost, as well as the season's growth. Where the buds inserted have started into growth the shoots beyond the junction may be considerably shortened, so as to direct the current of growth to the development of the bud-shoot, yet too much of the stock shoots should not be cut away, or the operation will have a corresponding influence in checking the roots, a circumstance that by no means should occur. In the spring when the Roses are receiving the most attention, the suckers are usually removed, but it is quite as necessary to take them off now as it is earlier in the season, otherwise they will seriously interfere with the strength which the present season's growth should attain.

Soot Water for Roses.—It may be well to again allude to the necessity for the frequent use of this to Roses in pots. Worms have a particular liking for the soil in pots where rich manures are used; on this account there are no plants grown that suffer more from their attacks than Roses. The fact of their bearing strong stimulants admits of the soot water being applied somewhat stronger than would be safe to use for many plants. Before giving it it is well to let the plants get as dry as can be safely done without the foliage being injured; then give a thorough soaking, the effect of which is that generally in a few minutes the worms, especially the large red ones, make their appearance above the surface, when they can be removed.

Glasshouses.

Gloxinias and Achimenes. — The earliest-flowered will now want to go to rest. Beginners in the cultivation of these plants are frequently led to attach little importance to the gradual maturation of the bulbs when the flowering is over and the leaves begin to look shabby, allowing them to die off too quickly; it is through this cause more than any other that the roots are so often found decayed in spring, in place of being plump and ready to start into growth. When they show signs of wanting to go to rest, they should still be kept in a warm house, fully exposed to the sun and light, just giving as much water as will keep the leaves from flagging to any great extent. This treatment with plenty of air will induce rest. When the leaves and stems have thus gradually died down, the roots will be in good condition, and no difficulty will be experienced in preserving them through the winter if they are kept dry, and not allowed to get too cool.

Coleuses.—These may be grown up so quickly that it is never worth while wintering any but very small plants or cuttings of them, which should now be put in for that purpose. They will strike readily in any shady place in the greenhouse under bell-glasses or hand-lights, put on to keep the air from them for a few days, when they can either be potted off singly, or kept in their cutting pots on a light shelf till the turn of the year.

Bilbergias.—As flowering plants nothing can exceed the beauty of some of these, especially the variety called B. Moreliana, a kind which produces its blooms in the freest manner possible during March and April, a time when such brilliant colours are exceedingly valuable. Unlike most of the Bilbergias, the flower-spikes of B. Moreliana, instead of being very erect, droop gracefully over, hanging clear from the centre of the sucker producing them from 1 ft. to 1½ ft. in length, so that when the plant is elevated by being set on a bracket or inverted pot, or suspended in a basket, it produces a striking effect, as do also the long spikes of bloom when cut and placed in tall vases, so as to depend over their sides. Those who are not already in possession of this Bilbergia should not fail to add it to their collections, as it is a plant that is sure to give satisfaction. If obtained now the plants will most likely be in a fit state to receive a shift into a size larger pot, well drain the pots, and use rough lumpy peat and loam for the purpose, with just sufficient sand to keep it open and porous. None of the above-named plants care for much pot room; fresh sweet-oil and plenty of drainage being of more importance than a large quantity, which is more apt to become stagnant and sour, conditions under which they soon lose their roots, and, of course, get into bad health. When potted they must be grown freely on by keeping them in a moist atmosphere where they can have plenty of heat.

Caladiums.—The earliest started plants of these should now be permitted to go gradually to rest by only giving them water occasionally at the roots. It is the practice with some to keep these slightly growing through the winter, but it is not to be recommended, as they never start in the vigorous way which they do when dried off and allowed to go completely to rest.

Balsams.—Push on the last batch of these by closing early, after giving them a good syringing; and, in order to keep them dwarf and stocky, they should be kept thin and well up to the glass, so as to admit plenty of light amongst them. Such sportive plants as Balsams are sure to show great variety both in the colour, size, and quality of the flowers; and to keep up a high standard of excellence with these, it is necessary to make selections of the best and most distinct to be set away from the others for the purpose of bearing seed. If the flowers be so double as not to produce seed freely, remove a few of the inner petals, and fertilise the stigmas by hand, using a camel's-hair brush for the purpose.

Fruit.

Vines.—It cannot be too often reiterated that all Grapes intended to keep well throughout the winter should be fully ripe before the close of next month. Lady Downes, Gros Colman, Alicante, Mrs. Pince, and Muscats require a full two months from the date of beginning to colour to become fully ripe, and owing to the season being so backward, more than the usual amount of forcing will be necessary to attain this end by the time named. Whenever there is sunshine the houses should be closed up by 2 p.m., and night ventilation should be put on about 7 p.m., accompanied by artificial heat, in order to maintain a minimum temperature of 65°, or, if very late, 70°. If the borders are inside give them a thorough watering when the Grapes just begin to colour, and repeat the operation if necessary any time before the fruit is fully ripe. The rainfall has been excessive, and therefore in some soils and localities outside borders will need coverings to throw off the rain, but on light soils and naturally drained borders, such coverings need not be resorted to till the Grapes approach maturity, when they are necessary. In order to colour Gros Colman well, we find it requisite to let the lateral growths extend as much as possible, and to tie aside the foliage to admit full sunlight to the bunches. Grapes that are ripe should be kept as cool as possible, but apply fire-heat in cold damp weather in order to keep the atmosphere buoyant, or the condensed moisture settling on the berries will cause them to decay. Early Vines may now be partially pruned, *i.e.*, all the laterals may be cut off, and the longest side shoots shortened back, but the old foliage should be left intact and kept free from red spider by frequent syringings. If necessary the borders should now be renovated and surface-rooting encouraged by the addition of fresh material. Outside borders like those of late houses may now require protection from further supplies of moisture.

Melons.—The last batch of plants should now be well established, and to be certain of satisfactory fruiting not less than 75° as a minimum bottom-heat must be maintained, and top-heat according to the weather. On bright, sunny days the temperature may run up to 85° or even 90°, provided the walls and floors are kept sprinkled; in other respects treat them as recommended for early crops. Plants that are swelling off heavy crops water thoroughly with tepid manure water. Generally too little water is given at this stage, and consequently the foliage perishes and the fruit is flavourless. It is a mistake to suppose that starvation, by withholding water, adds flavour to the fruit. Sun, and lacking this, fire-heat and air, are the flavour-producers.

Newly-planted Strawberries must be attended to with water if the weather be dry, or they will suffer to an extent that will greatly interfere with their bearing capabilities the ensuing season. The same applies to Strawberries in pots. Those who cultivate Strawberries in pots may rest assured that a good deal of their success depends on the plants being plentifully supplied with water so long as they are making any growth. Place them in the full sun on slates or boards in a square as close as the pots will stand. By this means they will protect each other from the full force of the sun, which, coming in contact with their sides while at all powerful, is injurious to the roots of any plant grown in pots.

Vegetables.

Potatoes attacked by the disease should be forthwith dug up, and all that are in the least affected picked out, and the others, before being finally stored, should be spread out in a dry, airy shed for a few days, and again looked over, picking out any bad ones. The remainder should then be pitted, and kept as free as possible from atmospheric influences. Spring-sown Onions, Shallots, and Garlic will all of them now be ready to harvest. The bulbs should be pulled up and left on the ground for a few days to dry, and then moved to the store-room to be finally cleaned and stored in bad weather. The ground which they have occupied will be in good heart for the main crop of Cabbages for early spring use. It need not be dug, but simply cleared free of weeds. Drills should be drawn 2 ft. apart, and the plants dibbled in 1 ft. apart, to admit of alternate plants being drawn out for use whilst young, and before they injure each other. The planting of all other kinds of winter Greens should now be finished, with the exception of Coleworts, which may be planted all the year round. A last sowing of Turnips, Winter Spinach, and Lettuces should now be made, for even though the supply may seem

ample, it frequently happens that these last sowings stand the winter best, and certainly in the case of Spinach there is not that liability to run to seed that the earlier sowings possess. Thin out crops of these that were previously sown as soon as the seedlings can be handled, and keep the ground well stirred, particularly after dashing rains. The first-planted Celery will now require earthing up, but previously remove all suckers and small outside leaves, and tie up with bast in order to prevent the soil from getting into the centres of the plants. The general stock should not yet be earthed up, for when once earthing is begun growth is checked, so that, as a rule, it is best to allow the plants to get fully grown before earthing takes place, *i.e.*, if blanched Celery be not required at an early date, at least a month should be allowed for blanching. Where dry herbs are required for winter use, this is a good time for them ; Thyme, Sage, Marjoram, Mint, Basil, and Balm should all be tied in small bunches, and if hung up in any dry room or shed they will maintain their natural colour. If dried in the full sun the leaves go black, and fall off when removed to their winter quarters. Even where dry herbs are not in request the plants will be all the better if shortened back and freed from flower and seed stems. Keep the stems of Tomato plants thin, and the foliage that overshadows the fruit picked off. Ridge Cucumbers also require to be well trained out, and surplus fruit constantly picked off, and if the present sunny weather continues, a fresh mulching of soil will be necessary in order to keep them in full fruit. Vegetable Marrows also require to have the fruit removed as soon as it becomes usable, in order to prevent impoverishment of the plants, and this, coupled with a bountiful supply of water, is about all the attention which they will require. Peas, Broad Beans, and all other crops should be cleared away as soon as they have become exhausted, both for the sake of neatness and to prevent any unnecessary exhaustion of ground.

Cucumbers in frames should be stopped at every joint where they show fruit, a practice which tends to prevent their getting so much crowded with superabundant shoots, as they otherwise would be ; but even under this treatment they will get too full of growth unless the knife is freely used from time to time in removing all that is not required. Where Cucumbers are wanted as late in the season as they can be had, and where there are no means of growing them, except in ordinary garden frames, they should be assisted with manure water regularly after they have been some time in bearing, and, above all, continually syringed, getting to every part of the leaf-surface, so as to keep them free from insects, without which all other attention will be unavailing. Where there are houses or pits in which to grow Melons and Cucumbers, the above directions are equally applicable.

Improving Lawns.—It would be a great boon to the possessors of small gardens if seedsmen would make up small separate packets of seed of the finer lawn Grasses and Clovers. The lawns of suburban houses are too often laid by jobbing gardeners with turf of one or two years' growth cut from the neighbouring building land, and composed almost wholly of weeds and coarse Grasses unsuitable for the purpose. It requires years of constant attention and cutting before such turf can become anything but an apology for a lawn. If small separate packets of Lolium perenne tenue, Poa nemoralis, and Trifolium repens were readily obtainable, Daisies, Buttercups, Dandelions, and tufts of coarse Grass could be pulled up, and a few seeds of these substituted, and the lawn gradually improved. At present there is nothing for it but cutting and rolling, and occasional top sprinkling of earth and guano mixed. A very thin sprinkling of the dust of old mortar and plaster will also do good. The benefit of rolling may be seen in country lanes, where plenty of seeds of weeds and coarse Grasses are always flying about, yet little patches of turf may be found in front of cottages, round walls, by the sides of footpaths and roads, and anywhere it is liable to be frequently trodden on, consisting wholly of the very finest Grasses and Clover, without a sign of a weed or coarse Grass. I know many such patches, on which the seeds of coarse Grasses are at present raining continually, yet they never seem to spring up. Turf cut from crude clay is the worst of all. I remember a lawn laid with such turf which remained as bad six years after it was laid as it was the first day ; 2 in. or so of the clay had been unavoidably laid with the roots of the turf, and although the soil was light and dry underneath, the clay became caked and puddled amongst the roots of the Grass with the rolling, so that no fresh seeds could be made to germinate, and nothing but coarse Grasses, Buttercups, and Dandelions, which had strength enough to push through the hard surface, would grow.—J. D.

GLASSHOUSES & FRAMES.

Conservatories and their Contents.—The heat that has prevailed of late has necessitated an increased quantity of air being given to keep down the temperature of these structures to as low a limit as possible, and the effect of this is, that the borders in which creepers and other plants are growing have been robbed of their moisture. This may not be apparent if only an examination of the surface be made, as that frequently misleads from the constant damping which it undergoes in order to keep the air of the house sufficiently humid. It should be borne in mind that the demand made on the roots of plants at such a time is at least twice as great as it is when the weather is still and cool, or the sky dull and overcast. With the air in constant motion, as it necessarily is when all the means of ventilation possible have to be made use of, evaporation goes on at an extremely rapid rate through the pores of the leaves, and the whole of this, as a matter of course, is taken out of the borders, but much deeper than can again be made good by mere surface-waterings ; they should have a thorough soaking by going over them two or three times, leaving an interval of a day or so between each application, by which means the dry soil beneath will have time to swell and fill up the interstices, thus intercepting the water in its rapid passage through to the drainage without wetting the whole, an occurrence that frequently takes place when borders get into a dry, shrunken state. Among choice climbers Lapagerias, both red and white, are fast coming into bloom, and will be most attractive for some two or three months to come. They delight in having plenty of moisture at the roots and a rough porous peaty soil to grow in. With this resting on a well-drained bottom, water may now be given them at least once a week till they have completed their growth and ceased flowering, when less frequent applications will suffice. Where an increase of stock is desired, layering is the most expeditious way of obtaining it, an operation that may be carried out as successfully now as at any other season. Select a strong healthy shoot for this purpose, and remove the soil to a depth of 3 in. or 4 in., so as to form a channel in which to lay and peg down the branch, after which just bury it with sand and then cover up with rough lumps of peat and loam. If this be kept constantly moist, roots will be emitted within a year or so, when the layer may be severed and removed. Passifloras, Cobœas, Tacsonias, and other quick-growing climbers of a similar character should be kept regularly thinned out, so as to admit plenty of light and air to the plants beneath them. Most of the Tacsonias are subject to white scale, which, if not kept down now, will soon spread over the leaves and entail much future labour in clearing the plants from it. It first makes its appearance on the main stems and branches, from which it is easily dislodged by using any of the insecticides, which should be put on with a tolerably stiff brush. The utmost watchfulness must now be exercised in regard to Camellias, in order to see that they do not at any time suffer from want of water at the root, as when that happens the buds receive such a check as to cause them to fall off in the autumn just at the time when they should begin their final swelling. Weak liquid manure may now be given occasionally, especially to such as are confined to small pots, or have but a limited quantity of soil in which to grow. Clarified soot-water is perhaps the safest and best of all stimulants for Camellias ; it imparts a rich dark hue to their foliage. Those that make a satisfactory growth invariably show more flower-buds than they are capable of carrying, and these should therefore now be thinned out, leaving such as are largest and best separated. As a rule, one to a shoot is sufficient ; but this greatly depends on the condition the plants are in, the extent of feeding ground allotted to them, and other circumstances of a similar character. Choice stove plants that have been made use of to render conservatories gay should not be allowed to remain out of heat too long, or to stand in a draught, as when that is the case they are sure to suffer injury, although they may not show it at once. Allamandas, Stephanotis, Clerodendron, Balfourianum, Bougainvilleas, and Dracænas may be allowed to remain for some time to come, as a conservatory temperature just suits them at this season, and enables them to remain in bloom much longer than they would do in the close, moist heat of a stove.—J. S.

Everlastings for Winter.—Rhodanthe Manglesi is one of the prettiest of all annuals for decorative purposes indoors, and forms charming, neat little groups for small stands or vases, where, when laden with lovely pink, satiny-looking flowers, it is highly effective. The variety, named Prince Bismarck, is very desirable, being more double and having the merit of lasting longer in bloom. To get them to bloom early in spring, at which time they are most valued, seed should be sown in August, and the plants wintered on light, airy shelves near the glass in a warm house where the temperature does not fall much below 50°. Rhodanthes delight in rich vegetable soil, and should be potted in a mixture of at least half leaf-mould or peat and loam in well-drained pots. Any cold frame, where they can be shut up early, will suit them at this season if not kept far from the glass.

Flowers for the Greenhouse in Winter. — Schizanthus papilionaceus and retusus form beautiful pot plants that bloom profusely and are highly ornamental, especially the first-named, the flowers of which bear a close resemblance to butterflies, so rich are their markings. Both varieties are very bushy in their habit, and range from 1 ft. to 2 ft. high, so that they are well adapted for small houses and for window decoration, where, from their gay colours, they are sure to be highly appreciated. Sown in autumn, they are easily wintered in an ordinary greenhouse, and then come in at a time when flowers are scarce. To have fine specimens they should be grown three in a pot, and if of mixed colours, as they are almost sure to be, they will be all the more interesting and make a better display. Schizanthuses are plants of very easy culture, and will do well in almost any kind of soil that is open and free.

Fuchsia Rose of Castile.—Permit me to add my testimony to that of other correspondents in Gardening as to the value of this fine old variety of Fuchsia. It is not only well adapted, as your correspondents point out, for large or small specimens in pots, but likewise for bedding-out in sheltered beds or borders. Its peculiar combination of violet and white renders it most attractive and pleasing. Like many other varieties, it has far more colour in the open air than under glass ; it is also, if possible, even more floriferous, being almost all flower. When planted out the habit is compact and dwarf, and it is equally adapted for dwarf masses or lines. This Fuchsia is seldom seen to more advantage under glass than in 6-in. pots trained in the form of dwarf pyramids, with the lower branchlets drooping over the sides of the pots. It also looks magnificent grown in 12-in. or larger pots in huge pyramids from 6 ft. to 9 ft. high, and 3 ft. to 5 ft. through at the base, and literally clothed with blossom from head to foot. There is no Fuchsia in existence that has a better habit or is more admirably adapted for working up into huge specimens than the Rose of Castile. We flower most of our finest specimens twice a year, first in May or June. As soon as they begin to lose their freshness the whole of the flowering shoots are pinched back, each seed picked off, and the plants set out-of-doors till the middle of August. Placed under glass and liberally treated with manure water, they flower again from September to Christmas in greater beauty than before. This grand old Fuchsia is also

admirably adapted for forming standards, throwing up a young single shoot straight to a height of from 3 ft. to 6 ft. or any intermediate height. Stop the leader at the desired height, and allow three, five, seven, or any required number of shoots to break and be trained as near as may be at right angles with the stem as flatly as possible, and to 3 ft. or more in length. It is important to keep the crowns as level as may be. When the top breaks next season the shoots may be allowed to rise to a height of 1 ft. or more, and then droop gracefully over the sides. Treated thus, they form splendid tops smothered with bloom, and have a very handsome appearance. The simplest way of keeping the crowns in position is to train them across an iron hoop, which becomes entirely hidden beneath the foliage, branchlets, and flowers. At the risk of being written down as of antiquated taste, I would still recommend Souvenir de Chiswick as the best companion Fuchsia for Rose of Castile, and one of the finest in cultivation. It is not only admirably adapted for all purposes here suggested for Rose of Castile, but also for the furnishing of baskets and rafters, for which purposes these and other Fuchsias are so admirably adapted. Those who remember the baskets of Fuchsias suspended from the rafters of the Crystal Palace in its early days must often have marvelled that they are not more frequently employed for roof furnishing. — D. T.

A graceful Cyperus (Kyllingia monocephala).

A GRACEFUL CYPERUS.

(KYLLINGIA MONOCEPHALA.)

This plant is not generally known in gardens, although a few examples of it may have been seen in the Palm stove at Kew for ten or twelve years, and it has elsewhere been cultivated as a graceful and distinct decorative plant. Within the last few years it has been brought into notice by Messrs. E. G. Henderson & Son, who exhibited specimens of it at South Kensington, where it was much admired, and where the accompanying sketch was taken. The plant produces a tuft of drooping or arched Grass-like leaves, from which spring slender, triquetrous stems, bearing cone-shaped, silky heads (as shown in the annexed engraving), from the base of which two or three slender drooping bracts are produced, and which, in their fresh leaf-like greenness, contrast well with the silvery-tinted down-like inflorescence. The plant succeeds well in a warm greenhouse temperature, and grown in small, say 4-in. pots, forms pretty little specimens 1 ft. in height, admirably adapted for decorative purposes. Almost any light and porous compost seems suitable to its growth if placed on a well-drained bottom, and, like nearly all other Cyperads, a copious supply of water is requisite while the plant is growing. There are said to be upwards of fifty species of Kyllingia, the greater portion of which are natives of Brazil and South Africa, and a few belong to Australia.

B.

Gladiolus Colvillei albus.—Everyone who desires large supplies of cut flowers for bouquets or the drawing-room should grow this chaste Gladiolus in quantity. At the present time we have this and G. byzantinus, a rich purple, in full flower, and find them invaluable for dressing small or medium-sized vases. Moreover, they travel well, and the unexpanded blooms open after the stems are placed in water. They are extremely cheap. Their culture is simple, and, like all the bulbous tribe, they increase in quantity under good management. On the warm sand at Cheltenham, last year, I saw a dense row that had stood for three years without protection; but on our cold calcareous loam, where we suffer more from wet than frost, I lift and dry the bulbs, and store them safely away from frost. In January I place eight or ten bulbs in 6-in. pots, filled with light, rich soil, and bury them in leaf mould in a cold pit, where they remain undisturbed until March. They are then uncovered, watered for the first time, hardened off, and planted out in April. Although the autumn-flowering varieties are well known, and such varieties as Colvillei, cardinalis, and insignis (known as Cornflags) were found in large masses in every herbaceous garden years ago, the modern bedding raid has driven them out of cultivation, and many of the rising generation of gardeners are not even aware of their existence; but the return to hardy plants will soon bring them back to our gardens, as they are plentiful enough on the Continent, and every enterprising nurseryman will henceforward give them a prominent place in his autumn bulb catalogue.—W. C.

Insects in Greenhouses.—Being a reader of Gardening, I find that many are in the same dilemma that I was in some time ago when managing some greenhouses for a friend of mine. We had green fly, red spider, thrip, &c.; we boiled some Quassia chips and Tobacco together for them; this was not perfect. One day being very much annoyed at the sight of these pests, I, unknown to the proprietor of the greenhouse, bought 1 oz. of Castile soap, shaved it fine into a bucket, poured some boiling water upon it, and with a few bent sticks in the shape of a whisk I beat it up to a lather. I must certainly say it was very strong for the trial, and I found was instant death to the insects. I afterwards syringed some Roses in full bloom with similar results, killing the green grubs that were in the ends of the young Rose shoots; we had over 1000 Roses out-of-doors and a quantity in the houses. I afterwards dipped Cinerarias, Pelargoniums, Fuchsias, &c., and in short I syringed every thing in the houses and out that was affected with insects. It does not injure the bloom of any flower; I have used it on almost all delicate flowers in bloom for experiment, and I find it only kills the pests, and makes the plants clean and vigorous. With what is spared you can water the plants; it will do them good, and kill any insect in the soil in the pot. Where the red spider is wash the house with a brush and cloth as a woman would the floor; it will lather freely and clean anything. It will keep good no longer than soap-suds—in about a week it it will begin to smell offensive, but it is then good for manure. It is only 1d. per oz., and you can make the wash of any strength you like. All the gentlemen's gardeners about my neighbourhood use it, but do not make it known. The way to dip the plants is, get a vessel deep enough, and place something over the top of the pot, and turn it upside down, and then the fly is seen. Some thin wood or card-board will make a cover for the pot to keep the soil in.—J. W.

ROSES.

TREATMENT OF TEA ROSES.

All Tea Roses should be grown on their own roots, and for several reasons. The point of union of the bud and the stock is mostly the weakest, that is, the most tender part of the entire plant. It is just there that most of them perish. Plants on their own roots have no such weakness, and of course are so far more likely to escape destruction; besides, such plants are much more easily protected. It is somewhat difficult to protect standards of any height, but dwarfs are readily sheltered, nor is it needful to protect the whole plant. If from 6 in. to 12 in. above the collar are preserved intact, there will always be a sufficiency of breaks below that point to furnish a good supply of wood and bloom, or if not the safety of the plants will at least be insured. This would prove exceedingly comforting to many this year who are sorely discouraged by the number of blanks on their Rose beds, borders, or walls. There is also another obvious means of protecting Tea Roses, and that is by wintering them under glass. It is astonishing how many Tea or other Roses may be kept in a small area of glass in small pots, and how well and how freely such plants grow and flower if planted out in good soil after the severities of the weather are over. Of course this plan of treating Tea Roses assumes that many of the old plants may be lost. But this need not be so. The spring planting of Tea Roses may proceed abreast with their protection in winter. Should both plans succeed, the result would only be the highly gratifying one of a double supply of Tea Roses; should either plan fail, our gardens would still be fairly furnished with Teas.

There is also but little difficulty in keeping up a supply of Tea Roses, as no Roses strike more readily just after the first flush of flowering than Teas. Moderately strong shoots taken off with heels and inserted in a bottom-heat of 60° or so, kept close and shaded from bright sunshine, will soon root in sandy soil. As soon as rooted pot off singly in 4-in. pots, drain with ½ in. crushed bones, and the soil can hardly be

too rich. One half of rotten manure to a half of good loam, and freely mixed with sharp sand, is a good compost. Keep them pretty close until rooted in their new pots, then give all light and air possible. See that the plants never flag for lack of water. Remove all flowers as they appear, and if any shoots run up weakly let them be stopped, so as to force the production of from three to five shoots, if possible, of uniform strength. Gradually inure them to the open air, and ripen the growth made as far as possible before the end of the season. Winter them in cold frames or houses in order that the plants may be kept from frost. They must also be kept very cool in spring, so that the buds do not break till after the plants are put out and the roots are at work in the new soil. Tea Roses treated thus mostly grow and flower with a luxuriance and a beauty unknown to many people who have Tea Roses in the open air, and who have had to battle with the severities of the winter.

Easy Way of Propagating Roses from Cuttings.—About six weeks ago I took two cuttings of Maréchal Niel Rose, ripened wood slipped from the main stem, about 6 in. long, and put them in a wide-necked bottle full of water, setting them near the glass in the greenhouse; they have now made good shoots and thrown out roots, and I have planted them in small pots, in which I shall keep them till next spring, when I shall turn them into the ground by a wall. I have a good sized Tea Rose bush which I raised thus some years ago. They would do equally well in a window in a room, and require no attention beyond keeping the bottles full of water. If a few pieces of charcoal be placed in the water they will keep it from smelling offensively.—S. M. M.

Sawdust in Gardens.—My experience on the above subject is very different from that of "Solicitor's Clerk." I have found sawdust to be very useful in correcting the stiffness of clay; not clayey soil, but actual hard subsoil clay—the parings of a stone quarry which were used to fill up a brick pond, which was formerly where my garden is now. Of course I did not use the sawdust pure and simple. This is how it is. You are aware that in Hull (near which town I live) there is a vast quantity of timber cut up, and the poorer class of horsekeepers have been in the habit of using sawdust to make the horses' beds. The prejudice against sawdust on land causes the manure thus formed to be very cheap, and some of it fell to my share for the carting. I had it thrown down on a piece of vacant land and let it lie to rot. I afterwards scattered it about very freely, as far as I could throw it with a shovel; the other parts of the same land were well manured, and had plenty of riddled ashes, but in taking up the Potatoes planted on the plot I can tell by the beneficial result wherever the sawdust has reached. The Potatoes turn out finer and cleaner, the land is drier and easier to work, and there is an absence of the long thick earthworms so plentiful over the rest of the plot. I do not enter into all the minutiæ of the case, as that would take up too much of your space, but I am satisfied that sawdust properly used is an article of great benefit to stiff, retentive soils. Further, I think "Solicitor's Clerk" ought not to be annoyed because another man's experience is not the same as his own. By your kindness we are allowed to write in your journal for each other's benefit. Let us agree to use the privilege in the spirit in which it is granted.—Roadside Cottager.

THE SHRUBBERY.

Moving Shrubs.—It is not uncommon in amateurs' gardens to see shrubs which at first, when small, were planted close to give immediate effect, with a view to some being thinned out as they got larger, left until they spoil each other. If, in the first instance, the work were done with judgment, those which were intended to remain permanently will have been put in such position as will afford them enough room by simply moving the others of less value, which were only put in to fill up for a time; but it frequently happens that this course has not been followed, and that the planting has been done indiscriminately, in which case when they are grown so as to be too close, a portion has to be taken out, and many required to remain want moving more or less from the position in which they were first planted. Where removal of this kind becomes necessary, it should be carried out before the shrubs have grown into such a crowded state as to injure the whole, as frequently permitted; for, independent of the injury inflicted upon all, the longer moving is deferred, the worse condition they individually get into for removal. There is no time in the year when evergreens can be more successfully transplanted than from the end of August to the beginning of October, but the earlier in September the better; there is no necessity to wait for showery weather, not even if the soil be apparently so dry as to contain little moisture. In fact, the heat that is in it when in this state is one of the first requisites as regards success, on account of its assisting to promote the immediate formation of roots; whereas if removed late in autumn, when the temperature of both the air and earth is reduced by waning sunheat and chilling autumn rains, all this advantage is lost. In planting, however, whilst the soil is in the dry condition above described, it is imperative that every plant should be thoroughly soaked with water when it is replanted. This should not be done by half measures; on the contrary, the whole of the soil that is put in round the roots down to the bottom of the hole should be effectually moistened. Where this is done the formation of new roots, as I have said, commences immediately, and this single thorough watering will generally be found sufficient. If any doubts be entertained as to roots being formed immediately after planting at this season, an inspection, say a month afterwards, will soon dispel them; for those who will take the trouble to look at the point of every root that has been severed will observe a quantity of young feeding fibres which will enable the plant to resist the most severe winter that may ensue, and ready to supply the demands made by spring growth. Each shrub as soon as it is taken up should be immediately re-planted, not allowing the roots to have time to dry; in this there must be no delay; indeed, this early removal is only to be recommended where shrubs can immediately be placed in the new positions assigned to them from one part of the garden or pleasure ground to another. Presuming that the surplus plants thus taken up will be again planted where more space can be found for them, ground for them should be prepared beforehand by sufficiently deep digging or trenching, so as to expedite the work.

The Ash and Holly-leaved Berberries.—The Ash-leaved Berberis (B. nepalensis) is a plant in warm southern districts. Its leaves, which resemble in shape those of the Ash, are of a deep green colour and glaucous on the underside. Its flowers, which are large and yellow, are produced in long racemes. The fruit is oblong and dark purple. Our illustration gives a good idea of what the plant is like; and we have only to add that it should never be planted in cold wet districts, or in clayey soil. The Holly-leaved Berberis (B. aquilifolium), on the other hand, may be planted in almost any position or in any kind of soil with a certainty of its succeeding. In positions exposed to the sun it bears its purple fruit in abundance, which, contrasted with the shining green leaves, renders the plant a handsome object. It is planted largely in woods in some districts as coverts.

Nepaul Ash-leaved Barberry (Berberis nepalensis); a fine shrubbery plant for southern counties.

Golden Yew on Common Yew Hedges.—Grafting the Golden Yew here and there on shoots allowed to grow up from hedges of the common Yew is frequently practised in the great Surrey nurseries The practice deserves adoption in private gardens.—V. E. R.

Balsams in the Open air.—Balsams have made a strong growth in the open ground this summer, and are now blooming splendidly. Those whose notions of Balsams are taken from meagre plants, half-starved in small pots, can have little conception of the size and vigour they exhibit in the open ground; the stems are so large and massive that they resemble miniature trees. Unless the season be more than usually hot and dry the soil in which Balsams are grown need not be too rich. Ordinary garden soil suits them admirably, as if too rich the growth becomes coarse and rank at the expense of bloom. The best effects from the Balsam are got by putting into clumps some half-dozen or so of plants of the same colour, and alternating pale hues with dark or rich coloured ones. Planted in this way they are much more effective than when indiscriminately mixed in a bed. The Balsam is not a gay plant in the same sense that scarlet Pelargoniums or yellow Cal-

ceolarias are, but is modestly pretty and never vulgar. Those who want a blaze of colour will not care for the Balsam, but all who like a pretty and quiet display of flowers, such as the most fastidious in garden decoration may look upon with pleasure, will find the Balsam a plant admirably suited to evoke satisfaction. If it be objected that the Balsam needs a carpet of some neutral tint, then patches of green and grey Sedums will give the desired hues at once. I find the plants invariably do best that are dibbled out from the seed-bed when strong; those first potted up make such a profusion of side growth that the plants become a dense bush of leafage, and the bloom comes late and is much hidden. In the other case the plants assume a pyramidal form and show the spikes of bloom to great advantage. The best colours for outdoor planting are self, such as pure white, pink, peach, purple, carmine, scarlet, and crimson, but the flaked and spotted kinds are very pleasing.—A. D.

Notice.—We this week have the pleasure of presenting our readers with a plate of Roses, drawn life-size by Mr. A. Parsons. It was our intention to have presented this plate with GARDENING early in spring, but at that time only 30,000 of the plates were ready, and these not being sufficient for our then issue, we had no alternative but to offer the plate in limited numbers with our index, and wait till a number of plates sufficient for our weekly issue could be got ready. As most of our readers are aware, this plate of Roses forms the frontispiece for the first volume of GARDENING ILLUSTRATED, for which an index is obtainable. Those who already have the plate with the index will probably value the present copy for other purposes.

ANSWERS TO QUERIES.

2628.—**Mildewed Strawberries.**—The cold wet weather is the most likely cause. The plants should be renewed from fresh runners every three years. The best practice is to strike a lot of runners every year in small pots or on pieces of turf, planting these out every autumn in moist, firm, well-manured soil, so that the stock always consists of one, two, and three-year-old plants, one-third of each. The rows should be wide enough apart to allow of plenty of manure being worked in between the rows during the winter without disturbing the roots.

2631.—**Cut Roses in Water.**—Both sal ammoniac and sulphate of ammonia have been recommended to be mixed with the water to prevent cut flowers from flagging quickly. I have tried both, but without any beneficial result. Stopping the cut end of the stem with sealing wax has also been recommended, which has also proved a failure with me. For bouquets the best way is to tie them up as tightly with a piece of string as possible without bruising the stems. When cut Roses flag as described the Roses themselves are generally weakly; when growing vigorously, and cut with a piece of stem attached, they will frequently remain fresh several days. I have cut flowers which lasted three or four days, and others which flagged immediately from the same plants this year.—J. D.

2665.—**Rhododendrons not Flowering.**—Rhododendrons ought to do better near the sea than anywhere else, as a moist atmosphere is favourable to them. The soil must be unsuitable, as the plants are described as starving, if by weak and wiry is meant having long naked branches with only a few leaves at the tips. If the sand is calcareous, which it will be on many coasts, there is no help for it but to prepare a special soil, as lime in most forms is poison to Rhododendrons. If the sand is silicious, it may be too poor, and the very best procedure in that case would be to mix it well with peat broken into small lumps, heath-mould, or the Grassy top-spit of an old common or waste. Rhododendrons require a light sandy soil, which their hair-like roots can easily penetrate, containing plenty of vegetable matter in a state of decay, and a considerable amount of moisture in the air and earth. As a rough and ready method of testing the soil for carbonate of lime, wash some of the sand perfectly clean, procure some hydrochloric acid (spirits of salt) and drop some of the sand into it; if a violent effervescence takes place from the particles the sand is probably carbonate of lime; if it remains unaltered it is most likely silica, which is beneficial. It will not do to test the whole of the soil in that way, as it will most likely contain alumina and other ingredients, which will also effervesce. I cannot remember seeing Lime trees grow to any size very near the sea.

2739&2744.—**Cyclamens not Growing.**—The Persian Cyclamen is a very easy plant to grow and to keep if its requirements are attended to, but resents mismanagement by producing few and mis-shapen blooms, and by dying off. The best time to sow the seed is in spring or early summer in pots or pans of light loam, silver sand, and leaf-mould. The seed is some time in germinating, as a minute bulb is first formed underground. No heat is required unless the seed is sown very early in spring. They do very well in a shady corner of the greenhouse. After the little plants have made one or two leaves, they become dormant and cease growing, and should only have just as much water as will keep the bulbs from drying up. The last week of August they should be lifted from the seed-pans and potted into their blooming pots. This may be done at any time while they are dormant. The compost recommended is equal parts of loam, leaf-mould, and well-rotted manure, with a very little sandy peat. The pots should be placed in the open ground, but not exposed to frost till the leaves are well formed, when they may be placed in the greenhouse until their flowers show. This is the difficult period to manage them in, as they must be kept airy and cool at a time when the weather is cold and inclement. A steady temperature of 60° suits them exactly. They require, particularly in November and December, free air and coolness till the leaves form, then warmth till they flower, and shade, air, and coolness while in flower. When the flowering is over, the water given should diminish in quantity until the dormant period begins, when the leaves die. Seedlings usually produce a few flowers the second year, but it is three years before they flower well. A little fresh compost should be added every year, but otherwise the plants may remain two or three years in the same pots. I found they could not be managed in a sunny, unheated greenhouse, the temperature was too fluctuating; and I should think they could not be grown in a cold frame, as they require a higher temperature than can be got in winter without artificial heat. In watering Cyclamens it is better not to wet the leaves, but float the water on to the earth of the pots from the spout of the watering-can or from a jug.—J. D.

2740.—**Vegetable Marrows.**—Many plants in which the male and female flowers are separate have the two kinds of flowers in varying proportions from all male to all female—there is no help for it. I remember noticing a kind with very large flowers which seemed to be bi-sexual, at least every flower seemed to produce a fruit, but as I only saw them from a distance, I cannot say with certainty if such was the case. They were purchased as plants. Perhaps some other correspondent will say whether there is such a variety and what is its name. The flowers I saw were 6 in. or 7 in. across.

2733.—**Club in Cabbages.**—I have entered this year on possession of a garden in which I was told Cabbages all took the club, so that it was no use trying to grow them. Knowing that undrained land predisposed Cabbages to be attacked in that way, and finding Rushes and other marsh plants growing, I trenched the land three spits deep, and dug a ditch 4 ft. deep along one side of the vegetable plots. I mixed a puddle of clay, soot, and Gishurst's compound, and dipped my own seedlings in that up to the first pair of leaves, allowing it to become nearly dry before planting. Some purchased plants were planted without that treatment; both are doing well and hearting nicely, and I have seen no sign of club yet, which in the same ground formerly attacked the plants in a seedling state. My purchased plants, were purposely planted on ground on which the previous crop had been Cabbages. Last summer the ground was unoccupied. The club is the grub of an insect which attacks the roots of the Cabbage family, forming a species of gallnut, and preventing the further growth of the plant by devouring its juices. The dressing I used is said to protect the young plants; it should be mixed as thick as practicable. Messrs. Sutton, of Reading, recommend rotation of crops and deep cultivation as a remedy; of course that would mean never planting any of the Cabbage family two years running on the same ground, and if three or four years intervened between each crop so much the better.

2737.—**Propagating Roses.**—The best way of propagating Roses of all sorts is by layering from dwarf plants exactly as Carnations are layered. The shoots should be nearly ripe to be suitable. August and September are the best months for the purpose. For more difficult modes of procedure, with the advantages and disadvantages of each process, procure "The Amateurs' Rose Book," Groombridge & Sons, which contains full practical details of all methods of propagation.—J. D.

2719.—**Rose Eaten by Insects.**—There are several moths whose larvæ feed on the Rose, such as the Bergmannian Tortrix (Crœsia Bergmanniana) and the Brown Cloak (Spilonota roborana). These belong to the family of the Tortrices, all of which are very small insects. S. roborana eats into the buds as well as the leaves. Perhaps one of these may be the insect spoken of by "H. B.," which eats half through the shoots.—R. T. N.

2722.—**Rusty Water.**—Iron in moderation is not injurious, being frequently prescribed as a medicine. What are called chalybeate springs, such as Tunbridge and Cheltenham waters, owe their curative power mainly to containing iron. Water even considerably discoloured by iron rust is not nearly so dangerous to drink as water carried in lead pipes; 300 yards of them would render the water poisonous. The only remedy would be to have the pipes coated inside with a silicate paint; common paint would not do, as that is nearly all lead. Iron pipes tinned inside would also be safe, as would glass tubing cased in iron. Suitable pipes are almost certain to be obtainable; consult the building papers.—J. D.

2693.—**Mushrooms on Lawns.**—The pretty little Champignons, or Fairy Ring Mushrooms, would do well on a lawn in a country district, besides adding a kind of interest by the fresh green rings they produce on the turf.—J. D.

2663.—**Vegetable Marrows Dying Off.**—Vegetable Marrows often behave in that way in a cool, wet summer like the present. It will not mend matters to remove the false blooms, as they are the male ones, and the more of them in a wet season the better, as the pollen is liable to be drenched and made useless.—J. D.

2681.—**Strawberries in Heaps.**—I can inform query 2681 that rats are the "invisible agency" by which his Strawberries were piled up, as I have seen it done by those animals.—HESPER.

2809.—**Laburnum Flowering Late.**—*Enquirer.*—It is not at all unusual for the Laburnum to throw out a few flowers in late summer and autumn.

2810.—**Pruning Espalier Apple Trees.**—*W. C.*—Cut back all the long shoots not required for extending the height or breadth of the trees within two eyes of their base.

2811.—**Cutting Leaves off Peaches.**—*M.*—It is not very good practice to cut leaves off Peach trees to any great extent, even to expose the fruit, but it is sometimes necessary to cut some of the leaves in half in order to fully expose the fruit to the sun, and it does little or no harm if done discriminately.

2812.—**When to Dig up Potatoes.**—*Subscriber.*—Lift a root, and if the skin is firm on the Potatoes and not easily rubbed off with the thumb, then they are ripe, and may be dug up, left on the ground to dry for a few hours, and then be housed.

2813.—**American Cowslips** (Dodecatheons).—*M. P.*—These are perfectly hardy in well drained soils and slightly sheltered situations. We do not recommend tradesmen.

2814.—**Roses in Pots.**—I have some Hybrid Perpetual and Tea Roses which were bought some last autumn, the rest last spring. They were in a greenhouse and bloomed well. Then they were put out, and now are plunged—still in their pots—and well mulched with good manure. They have not been potted or pruned since I got them, and have all made good growth. I intend layering some of them. Can I layer into pots plunged alongside? and when should they be repotted and pruned? They will be indoors next winter in a cool greenhouse.—HESPER. [Yes, you can plunge pots by the side of them, and layer them, or make a bed of sandy soil on each side of the plants. They should have been repotted after flowering. We would advise you to take off some of the surface soil, and top-dress them with fresh rich material. Prune slightly when you take them indoors].

2815.—**Carnations with White Petals.**—*M. A. W.*—Self-coloured Carnations often produce

flowers in which are a few petals of different colours. The whole of the Pink family is very subject to sport in this way.

2816.—**Wild Mullein**.—Can any correspondent inform me where the Mullein (Wild Plant) generally grows, and the height of the plant, and what sort of blossoms it bears?—S. M. A. [There are six species of Mullein or Verbascum indigenous to Britain. They are tall-growing herbs with yellow, brown, or purple flowers. Most of the species are natives of Central Asia and North Africa.]

2817.—**Vine for Greenhouse**.—*J. J. C.*—The best kind you can have is Black Hamburgh. Procure a good, strong, well-ripened cane at any good nursery, and plant in September or October.

2818.—**Clematis after Flowering**.—*St. E.*—We presume the Clematises are planted out, in which case let them alone. You can put a coat of coal ashes over their roots in winter, and in spring cut out weak growths and prune back a few of the strongest shoots, in order to keep them clothed with foliage from the bottom.

2819.—**Storing Seeds**.—I have placed my Potatoes, Peas, and other seeds for next year over a stable. Is it likely that the ammonia which arises from it will affect them in any way?—W. B. D. [We should think not.]

2820.—**Vine Borders**.—What compost would you recommend for a Vine border. Last spring two Vines were killed, apparently by a yellow slug, which I collected in hundreds, and all my Vines more or less suffered. I want to make an entirely new border; will you therefore tell me what compost to use?—T. F. [Use good turfy loam from an old pasture mixed with a little well rotted manure and crushed bones.]

2821.—**Coal Tar**.—Will this hinder sheep from eating the bark off forest trees? and will it injure the trees themselves?—Hortus. [It would probably injure the trees. Better tie brushwood round them till they get beyond being eaten.]

2822.—**Cucumbers and Vegetable Marrows**.—*W. J. A.*—In summer bees and other insects will do all that is needed. In the case of early Cucumbers artificial fertilisation is necessary.

2823.—**Club in Cabbages**.—I have a large plantation of Cauliflowers, Savoys, Brussels Sprouts, &c., the leaves of a large number of which are turning yellow, and on pulling them up I find the roots to be what is locally termed club-rooted; some roots are as large as a full-sized Turnip. What is likely to be the cause?—W. B. D. [It is the work of an insect. Use plenty of wood ashes on the land and in the holes in which the plants are set.]

Eucharis.—*A. K.*—See recent numbers of Gardening. The flowers of Eucharis are not sold in Covent Garden in bunches, but by the dozen blooms.

Morello Cherries.—*A. E. C.*—Send samples to Mr. Webber or any other fruiterer in Covent Garden market, and they will probably tell you what they are worth.

Brondesbury.—Kindly observe our rule and ask your questions separately.

QUERIES.

2824.—**Grape Vines Infested with Red Spider**.—I have a house of Black Hamburgh Grapes which looked well to within the last ten days, and look at present in a fair way of colouring, but I am afraid they will not come to perfection, the wretched little insects are making such skeletons of the leaves. I have syringed the Vines once a day when I closed the house, between 4 p.m. and 5 p.m., until the fruit showed signs of colouring, and I have occasionally since poured water in alleys and syringed the walls. Will some reader inform me how I can get rid of this destructive pest, and insure the present crop?—T. R.

2825.—**Poplar Roots in Lawns**.—Can any one kindly inform me how to destroy the roots of Poplars that have completely undermined a bowling-green? Suckers come up from the roots in bunches at various intervals, and form hard knots when cut down, that injure the mowing machine, and are very unsightly.—Subscriber.

2826.—**Nesida Rose**.—Can any one tell me where I can procure a Nesida Rose, the sweetest climber I know? I have applied for it in many places without success.—A Subscriber.

2827.—**Saving Flower Seeds**.—Will some one afford me a little information as to the saving seeds of plants, more particularly double Stocks?—Tyro.

2828.—**Caterpillars on Geraniums**.—My Geraniums in the open garden are infested with caterpillars; and although I pick off all I can see one morning, there are more the next. Is there anything I can do to keep them from getting on the plants?—W. D.

2829.—**Hibiscus africanus**.—How can I grow this plant? This year I have planted seed bought at two different places, and none has come up.—E. G.

2830.—**Greenhouse Carnations and Pinks**.—Will some one tell me how to grow Clove-scented Carnations, Picotees, and Pinks, in a greenhouse? Also mention a few of the best, and how can I get plants that will flower in the middle of next winter?—Christmas Rose.

2831.—**Sowing Anemone Seed**.—Will some one kindly inform me when and how to sow Anemone seed?—F. E.

2832.—**Dirty Flower-pots**.—What is the best way to remove the green substance from the outside of flower-pots, and what is the cause of it?—F. J. L.

2833.—**Preserving Vegetable Marrows**.—At what age is it advisable to pick the Marrows? Also the mode of proceeding to preserve them as a substitute for preserved ginger. Also, are the Marrows that are intended to be kept for winter cooking best hung by the stem or slung in tapes or cloths?—Amateur, *Cardiff*.

2834.—**Garden Refuse**.—I have a large quantity of garden refuse, such as Cabbage leaves, Turnip-tops, &c. Is there anything that I can apply to facilitate the decomposition without giving rise to any offensive fumes?—Amateur, *Cardiff*.

2835.—**Sowing Flower Seeds**.—Will some one kindly inform me if by sowing now I can raise any of the following in a cool frame? If not, what is the best time for sowing, and what kind of soil should I use for the purpose?—Carnation, Calceolaria, Cockscomb, Lobelia, Pyrethrum, and Pelargonium.—J. T. M.

2836.—**Magnolia not Flowering**.—I have a standard Magnolia which for many years was covered with flowers. Of late it has not had any at all, though apparently still quite healthy. Can any one suggest a likely cause of this?—E. B.

2837.—**Plants for Aquarium**.—I have made a square aquarium, with roof, &c., and have placed in it a piece of rockwork to represent two arches. Over the centre of the middle pillar I have a fountain playing, and over each arch I have made a flat stand for to place a flower-pot on. I am desirous of having a plant of some kind growing over each arch which is bushy, and which will grow down and thus hide the pot. I also require a creeper to plant in the bottom of the aquarium to climb up the rockwork. Will some one kindly give me the names of the plants most suitable for the two respective positions, and that will throw off the most oxygen?—Ferry Hill, *Durham*.

2838.—**Beard's Vineries**.—Mine is a Beard's Patent Vinery, felt and screws being used to secure glass and iron. The felt perishes quickly; can any substitute be recommended in its place?—F. H.

2839.—**Thrips on Orchids**.—Can any reader inform me whether there is any real cure for the yellow thrips [White Scale.—Ed.] which do so much damage in Orchid houses? Fumigation, I find, is powerless to destroy those which are lodged in the crevices of the sheaths and folds of the leaves; and plunging the foliage of the plants in Tobacco water, although effectual in killing the thrips, is, I find, very hazardous. Is there no other solution which will not injure the Orchids, but which will destroy the thrips? Has Quassia solution ever been tried? I find a camel's-hair brush very useful for fetching them out of the crevices where they collect, but I fancy the only effectual remedy would be some liquid in which the foliage could be dipped.—C.

2840.—**Unproductive Potatoes**.—I shall be obliged if some one will explain how it is that some Scotch Champion Potatoes growing in three different parts of my garden show no sign of tubers? Here and there is one the size of a pigeon's egg, and that is all. The haulm is splendid, in some places 4 ft. high. Will they bear a crop, or had I better dig them up?—A. E. C. S.

2841.—**Houseleeks**.—I have a very flat roof, and I have planted on it a plant of the common Houseleek; it has grown well and flowered freely this year. Are there any other sorts of the Houseleek that would do well in such a position? Mine has a large pinkflower with a yellow centre, and the flowers are in clusters. Are there any other coloured flowers of the Houseleek?—Housleek.

2842.—**Cleaning Garden Pots Equal to New**.—Will T. Brown, query 1895, kindly say if the hydrochloric acid is hurtful to the hands or at all dangerous to human beings or animals? also would it answer to put the solution into a galvanised pan? Would it damage the galvanising on the pan?—A Learner.

2843.—**Fruit of Tacsonia mollissima**.—Is this edible either cooked or fresh?—Tacsonia.

2844.—**Creeping Jenny**.—Can any of your readers inform me if it is usual for the above to be attacked by white blight? I have some in pots, and I keep them plentifully supplied with water, which I have always understood they required. Is rich soil necessary?—Marguerite.

2845.—**Mushrooms in Boxes**.—In your impression of Aug. 7 (p. 268), I see a short account headed "Growing Mushrooms," and signed "J. C." I wish he would state what sort of rotted manure he uses, as well as the nature of the compost used, and whether firmly pressed into the box or not, and as to the quantity of spawn, watering, or any other particulars with which he may be pleased to favour me.—J. Hind.

2846.—**Heating Small Greenhouse**.—The size of my greenhouse is 14 ft. by 7 ft. Last year I tried to heat it with a paraffin lamp, but could not obtain sufficient heat. I then tried the inverted flower-pots, as spoken of in Gardening, but with these I also failed through the breaking of the upper pot. This year I am willing to spend a little more money on a good heating apparatus. Will some one recommend one with which they have had experience that will consume refuse?—Pat Rooney.

POULTRY.

Disease in Poultry.—On June 19 I had eighteen strong chickens hatched, and all particularly healthy until the day before yesterday, when almost all showed signs of sickness; two have died, and I fear they will all follow. Is there any epidemic going about amongst chickens? What can be done for them? They stand in a sleepy way with drooping wings, feathers ruffled and puffed-out breasts, and have but little appetite. Any information will be acceptable. I have had a good deal to do with poultry, but never met with a similar case. Is it a delicate time with respect to plumage?—M. J.

Parasites in Chickens.—I should be very glad if some one would kindly recommend a plan for destroying insects in the heads of bantam chickens. I have dusted sulphur into the feathers twice a day, and also rubbed the heads with a strong solution of Tobacco-water, but with no result. The birds are now two months old and extremely choice, for which reason I am particularly anxious to save them. They scarcely eat anything, but are huddled together with wings drooping from morning till night. The first began about a fortnight ago, and the whole brood (ten) are now infested with the vermin, and one of the chickens is already dead. What can have produced them in the first instance? I may add that the chickens are in a roomy and lately white-washed house and have a large Grass run.—W. B. D.

Food for Poultry.—What is the best food (fattening) for ducks? also for laying hens? and how much per week should they cost respectively?—Alpha.

Breeding Ducks.—Will some one kindly give their experience as to the advantage of crossing the Aylesbury Duck with the Rouen Drake? Will the ducklings be white?—R. M. S.

Chickens Laying Early.—Two of my pullets, which were hatched in the second week in March, commenced laying the third week in June, and still continue to lay. One is a pure Houdan, the other a cross between a game and Dorking.—A. H.

BEES.

Fumigating Bees.—Mr. Letchford assumes that the method of rendering the bees in a hive insensible that I recently advised is incorrect. I can assure him that the operation has been done often with a straw skep, and that, too, successfully. The bees have been with a very tiny piece of fungus sent to sleep in a few moments, and all got out of the hive in a few more moments without trouble. It is not fair hastily to assume that because he may have been unable to do this others must have been as unsuccessful. I write now chiefly to note how much the bees are favouring the Mignonette flowers. I can conceive of no garden plant that supplies richer store of both honey and pollen than does this sweet annual. It is also a long season flower, and a mass of it must indeed be a rich feeding ground. Fortunately this plant may be had in abundance in all gardens; this summer it is especially good, growing and blooming most luxuriantly. I notice further that bees, when gathering food, keep to one kind of flower only. No doubt to this important fact do we owe the general absence of intercrossing that might well be looked for. Where bees are active amongst flowers, many come in covered with yellow pollen. These have been exploring the male flowers of the Vegetable Marrows, and perhaps the Cucumber, large breadths of rich Cucumbers being grown near to my bees. Others have a gray pollen; that is no doubt gathered from the Onion blossom, as a large quantity of these bulbs are grown for seed a few fields off. The insects work the heads of flower most pertinaceously. Just now the Runner Bean bloom is furnishing a large quantity of food, as also is the Clover, of which large breadths are now ready to be cut. Watching the flight of bees from the hives, show that by far the larger portion of them take long flights by the height to which they ascend, but a few work close home, and for the sake of these few it is well to sow seed of plants that will in the home garden give as much good food as possible.—A. D.

Bees.—Will you allow me to inform "Novice" that it is not the humane system that he has adopted, but the inhumane one. Like himself I was years now gone by persuaded to do just the same with my poor bees, to my sorrow and their destruction, but I have profited by sad experience, as he hath also done; but let me say to him, don't be discouraged; he will yet succeed, although he has lost a good season as this is for bees, as also a good stock, but he will start next season a wiser man. The "humane system" proper is to super them or to drive them; the first is much the best every way, as he will also prove if he tries it, as he will obtain his honey much sooner and much more pure, and will, if he wishes to sell, obtain double the price. I have been supering my bees for years, and do not think of adopting any other system until I am persuaded that it is a better one. I have this year some good supers—some in straw and some in glass; one of my glass supers took the first prize at a show lately held. The same stock also sent out a strong swarm, so that I have a good stock swarm and super, each of the value at least of 15s., which with the prize of 10s. make the one colony or stock of the value in money of 55s. If the honey was taken from the stock and swarm by driving them out, it would of course increase that sum to nearly £4; therefore bees if rightly managed are very profitable as well as interesting. Being an old bee keeper, I shall be pleased to answer in

quiries in reference to bees for any that may need them.—Apiary.

SNAIL AND SLUG TRAP.

The trap figured below is a very simple one. It consists of a kind of pot provided with a number of holes in the side and a closely-fitting cover, the pot being plunged into the ground so that the holes are just level with the soil. The pot is glazed inside, and the cover is made to fit tightly, so as to keep the bait that is used in a fresh condition. The holes are conical, so that when once the snail enters the pot it has great difficulty in getting out again. The interior, being thus kept cool and dark, has a great attraction for snails, slugs, mole crickets, woodlice, and other plagues which burrow in the earth. As for the bait to be used, that depends in a great measure upon the pest which we wish to destroy. A saucer of strong-smelling stale beer, or beer mixed with vinegar, is an excellent bait for snails, slugs, and woodlice, the olfactory nerves of these destructive pests being particularly sensitive. Stale wine is much used in France as a bait for the mole cricket, and earwigs seem to enjoy fresh bones which have not been too well picked, stale soup, or pot liquor with great gusto. For field mice and other four-footed vermin, flour, meal, corn, or bran may be used. As a rule, the traps should be placed in a shady position, so as to keep them as cool as possible—snails, slugs, and woodlice hating light and warmth. In the case of slugs and snails the greatest harvests ought to be made in damp or wet weather, and approaching showers ought therefore to be the signal for putting fresh bait in the traps. These pots are sold by M. Pelletier, 20, Rue de la Banque, Paris, but they might be easily manufactured by boring a number of holes in a flower pot with an old three-cornered file, the point and edges of which have been well sharpened on a grindstone. If plenty of water, and silver sand be used a hole is very soon made. The cover may be formed of a flower-pot saucer, and should be fastened down with ordinary clay. C. W.

Trap for Snails and Slugs.

Destroying Worms in Pots.—Nothing is more easy than to destroy worms in pots, providing that the operation is properly conducted. It is, however, absolutely necessary that the lime be quite fresh, otherwise the effect is only partial; the worms are merely stupefied for a time, quickly recovering their full vitality. The best way is to procure a peck of lime, in large lumps, if possible, and store it away in an air-tight tub, keeping the same in a perfectly dry place. When lime water is needed, put several large lumps into a pail, and pour just enough water in to cover them. If the lime absorbs the water and still appears somewhat hard, add a little more; cover the pail, and allow the lime to remain untouched for an hour, at the expiration of which time it will be perfectly slaked, and the pail may be filled up with water. Allow the water to become quite clear and transparent before using it, or the surface of the soil will become covered with an unsightly deposit. If a considerable number of plants have to be operated upon, then the better way is to slake a gallon of lime and put it in a large tub, in which a tap should be fixed at about 6 in. from the bottom, so that the water may be drawn off clear. The question is often asked, "How strong should lime water be made?" The answer to this is, that it cannot be made too strong; the water will only hold in solution a certain amount of the properties of the lime; consequently, all that one has to do is to ensure a sufficiency of this latter ingredient, three or four good spoonfuls of which will suffice for twice filling a 36-gallon cask with water. Every pot that is infested should be allowed to thoroughly dry out, and should then receive a complete saturation, enough to cause a free exit of water from the drainage hole. Allow an hour to elapse and then repeat the operation. The little worms will come to the surface and die, and such large ones as do not share that fate will beat a hasty retreat through the bottom of the pot, never more to return. Those who are much troubled by worms entering pot plants would do well to make a practice of watering with lime water. Its constant use cannot in any way prove harmful, for lime, like soot, is rather a strengthening than a stimulating agent, and may be used daily without the slightest fear of ill-effects; on the contrary, plants which may get frequent applications of clear lime water unmistakably show their appreciation of it. For tender-rooted subjects, such as tuberous Tropæolums, Achimenes, Ferns of many kinds, Cyclamens, &c., it is a good and safe manurial agent.—J. C. B.

Plants by Post.—I can strongly recommend the little post hampers made at the workshops for the Industrial Blind, 6, Howard Street, Belfast. They are made in two sizes, at 1s. and at 9d. each, postage 1½d. and 2d. according to size when empty. For cuttings and seedlings, as well as small-rooted plants, they answer admirably, but for cut flowers to go a distance they must be lined to exclude the air. Damp Moss or cotton-wool insures all plants keeping fresh.—Hesper.

Window Ornaments.—I was anxious to make some fronts for my windows of a somewhat rustic nature, in order to prevent the flowers falling off the sills, and to protect the pots from the rays of the sun, so I obtained from a cooper's a shillingsworth of hoops off old vinegar casks (some of the hoops had the bark on and some not). I then cut them into lengths of about 8 in., and pointed them at one end. The frame-work I made from a glass case which cost me 1s. I then fixed the lengths on with French nails, which I clenched at the back. To fasten the whole to the windows I obtained some small brass eyes, some of which I fixed to the framework of the windows, and some to the "fronts," and with some iron skewers I made hooks of the requisite lengths, so that the "points" could be detached when required. I then made a small ornament in the form of a star for the centre, and well varnished the whole. They answer the purpose admirably, and look very well. To the window boxes at the back of my house I made similar fronts to hook on and off, the only difference being that I painted the pieces of hoops at both ends.—A. H. B.

AQUARIA.

I have a rectangular tank, plate glass, holding about 30 gals. Will "W. B." (No. 58) inform me where the Frog-bit, Water Milfoil, Anacharis, and the Vallisneria are to be purchased? There are eighteen carp and five dace in it. It is supplied from a wood tank which is kept filled with river water and conveyed to the aquarium by a length of ⅜-in. pipe, the water falling into the aquarium in a shower of fine spray, whilst the bottom water is worked off by a self-acting syphon—the waste-pipe, and as soon as the water attains its maximum depth the syphon at once works; thus it cannot overflow and the water is also constantly renewed. The fish are splendidly healthy and very lively. They are fed almost daily with a dessert spoonful of vermicelli crushed up and with live flies during the summer, of which they are particularly fond. I have had them two years, and have not lost a fish from ill-health. I am persuaded that the gold fish must be fed, of course judiciously, and also that the plants should be so placed as to enable them to rub themselves; thus they are kept clean and healthy. Our neighbourhood is not rich in aquatic plants, nor can I purchase them here. Can any other of your correspondents confirm "W. B." as to the Virgin Cork being harmless after soaking and drying? If so, I shall introduce it as pots for the plants in preference to planting in the aquarium, as the plants can be more readily removed in pots, and the Cork can be so arranged as to add to the beauty of the interior. My experience is altogether contrary to retaining the water too long, and doubt any one having healthy and lively fish under such conditions. The fish deposit a large quantity of dirt which no amount of plants could possibly absorb, thus making the bottom of the aquarium foul and impure, tainting the whole of the water.

For those who have no self-acting syphon, obtain a piece of india-rubber tubing about 30 in. long; use that as a syphon to draw off the dirt accumulated at the bottom; this will keep the water clean, and you need not remove or touch your fish. Mine are never removed, and I use an india-rubber syphon as well about once a fortnight. As you draw off add more water gently.

West Country.

THE HOUSEHOLD.

To Pickle Walnuts.—Make a brine of salt and water in the proportion of ¼ lb. of salt to 1 quart of water, soak the Walnuts in this for a week. Run a larding or knitting needle through them in half-a-dozen places. Put them into a sauce-pan with some of the brine, and give them a gentle boil for one or two minutes. Drain them in a cullender and lay them on a large dish tray, basket, or on some paper. Put them in the air until they turn black, throwing them about until they are dry and free from moisture. Fill the jars three parts full with Walnuts, and fill up the jar with the following pickle hot:—To each quart of the best vinegar put 1 oz. each of black peppercorns, long pepper ginger, ½ oz. of allspice, ¼ oz. of cloves, a few chilies, and salt to taste. Boil this spice and vinegar five minutes. A clove of garlic put in after the vinegar is boiled is by some thought an improvement. They will be ready in six weeks.—J. W.

Potato Salad.—Can any one give me a good receipt for making Potato salad? [Cut cold boiled Potatoes in rather thin slices; put them into a salad bowl with a teaspoonful of chopped Parsley, half a teaspoonful of Eschalots, cut very fine, two tablespoonsful of oil, two of cream, and two of vinegar; season with a little pepper and salt, and toss all carefully together without breaking the Potatoes.]

How to Pickle Eggs.—Can any one tell me the proper way to pickle Eggs?—W. Brown. [1 lb. quicklime, one handful of salt, 1 gallon boiling water. Pour into a deep jar, stir well, and let it stand till cold. Drop the eggs gently into this mixture, occasionally stirring it up; it will keep them for months.—C. P.]

—— If pickle means to preserve, the following plan I have tried and found successful: Pour boiling water on some fresh unslaked lime and add 1 lb. of common salt; make the solution strong enough to float an egg; stir occasionally, and keep the jar or tub with the eggs in a cool place all summer, and in winter they will be found quite sound and good.—J. B. K. G.

Bottling Gooseberries.—Which is the best method of doing this?—Tyro.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

CAPE JASMINES (GARDENIAS).

In most gardens where warm greenhouses exist Gardenias are found. They are the sweetest of all flowers, and perhaps the most appreciated of any. Their odour is peculiarly rich and satisfying, combining that of the Stephanotis and the Rose. The colour of the more popular sorts is the purest white, which renders them the more valuable for bouquet and other purposes. Gardenias, however, if crushed or when about to fade change colour ; but even when thus discoloured by time or accident they retain their sweetness. On the whole, Fortune's Gardenia (G. Fortunei) is perhaps the best ; the flowers are larger than those of florida, and it also flowers more freely. The habit and constitution of the plant are also all that can be desired. It may, however, be remarked in passing that the variegated variety of florida flowers more freely than the normal type, and produces flowers almost equal in size and sweetness to G. Fortunei. There is a larger flowered variety called G. radicans major which produces flowers nearly as large, though not so finely shaped, as those of G. florida. The variegated variety of G. radicans is almost worth growing as a fine-foliaged plant, and it flowers as freely as the green-leaved or normal type. The Gardenia citriodora figured on page 311 is a plant of a character quite different from either of these, and is comparatively rare in cultivation. It is, however, very fragrant, with a strong suspicion of Orange blossom about the perfume. The flowers are also single. The old G. radicans is also a useful free-flowering variety much prized for bouquet making. G. Stanleyana is different in habit and flower from all the others, but as regards completeness it should hardly be named with them. It is a highly ornamental stove plant, with large trumpet-shaped flowers about 8 in. long and 5 in. across. Its colour is peculiar, the interior being a sort of reddish-brown approaching to crimson and margined with white. The place for this variety is the rafter, wall, or roof of a stove, as it delights in heat and moisture, being a native of Sierra Leone. The other varieties, with the exception of G. citriodora, which comes from Natal, are natives of China and Japan. The whole of them are, however, shade and heat-loving plants when in full growth ; and the best places in which to grow Gardenias in perfection are close pits or houses where an atmosphere bordering on saturation and a top and bottom heat of 65° or so can be maintained while they are making their growth and opening their flowers. Under

WELL-GROWN GARDENIA (G. INTERMEDIA). LIFE SIZE.

such favourable conditions the foliage and flowers will be almost as large again as under drier and cooler treatment.

Potting, &c.—After flowering Gardenias should be shifted into fresh pots if needful, and any pruning or training required should also be attended to. Under good culture, however, Gardenias can hardly be said to need either. Even the flowers should be gathered singly and mounted, as if cut with branches many shoots would be cut off, each of which in the natural course of things would have developed into a flower-bud. Pruning in the same way, by diminishing the number of the shoots, reduces the flowering capacities of the plants, and should be indulged in as little as possible. After the growth is completed and partially ripened, all the hardier varieties, such as florida, Fortunei, and radicans, may be placed for a few months in cold pits, or even in a sheltered position out-of-doors throughout the warmer summer months. The comparatively sudden transition of the plants from cool to warm quarters quickly develops the flower-buds, as Gardenias bear forcing well, and seldom drop their buds, unless exposed in a dry atmosphere as well as to a high temperature. At one time the belief was almost universal that manure heat was necessary to the perfect culture of Gardenias, and doubtless many fine flowers were grown in manure beds by our fathers and by some of us in our younger days. Great merit was attributed to the ammonia, not only in developing the size of the flowers, but also in filling them with fragrance; and, considering the close affinity between ammonia and some of our scents, this idea had a scientific basis to rest upon. But doubtless the chief use of the manure heat was the maintenance of a genial atmosphere around the roots and tops of the plants. Certain it is that Gardenias are now generally grown as well or better without manure heat than ever they were by its aid, and one of the best means of keeping up a constant supply of these sweet flowers is to devote a house to their cultivation and plant them out in borders.

Houses for Gardenias.—Low span-roofed houses, with heated borders on either side of a central path are, perhaps, the most handy for the wholesale culture of Gardenias, but lean-to houses also answer well. In the case of the latter, the whole of the back wall may be covered with the plants with several rows of dwarf plants in front. Houses of this sort will produce an immense quantity of flowers, for Gardenias may be forced into producing two crops in a year. They flower on or near the extremity of the young shoots, and as young shoots are produced and ripened the development of the flowers follows as a matter of course on the application of sufficient heat and moisture. Gardenias planted out also yield a long succession of bloom. The flowers being gathered at different times, the young shoots are also formed at different seasons, and large, well-established plants under liberal treatment thus get into a very useful way of semi-perpetual flowering, which enables the cultivator to gather many a welcome flower at almost any season. But of course Gardenias, by means of changes of temperature and treatment, may also be made to flower but once in a season, as is mostly the case with those cultivated in pots. Whichever mode of culture is adopted, the best soil for Gardenias is equal parts loam, leaf-mould, or thoroughly sweet and well-decomposed manure freely mixed with sharp silver sand. Many prefer peat to manure or leaf-mould, and, no doubt, Gardenias do well in loam and peat, but they do better with the manure or leaf-mould. The drainage should be ample, but not excessive, as the plants love moisture when in full growth. When the pots or borders become full of roots, few plants enjoy manure water or turn it more rapidly to good account than these. Everything, however, approaching to over-feeding or over-saturation must be avoided.

Insects.—The Gardenia has one failing, and that is, it is very attractive to mealy bug, and once this pest gets established it is difficult to eradicate. The surest means of keeping the plants clean is to mark the first bug and touch him with paraffin oil; this oil seems to kill at once. Thrips, aphides, scale, &c., are the result of errors of cultivation mostly, and will not occur under the above treatment. Soap may, and paraffin or a touch of turpentine will, clear them off at a single dressing.

Propagating.—Few plants are more easily propagated than Gardenias. Small pieces of the young ripe wood, inserted in silver sand, either under or without bell-glasses, in a sharp bottom-heat of 80° and a moist atmosphere, root readily. When rooted, pot off singly, and grow in a warm moist temperature, stopping the shoots occasionally to induce the plants to grow bushily.

Gathering the Blooms.—The blooms of the Gardenia are easily damaged by careless gathering or rough handling, and every bruise will show before many hours are over. The flowers should always be mounted with their own leaves; the larger kinds of Myrtles form the next best setting.

Gardenias for Market.—The blooms of few plants are more valued in the market in a cut state than those of the Gardenia, and although they do not now realise such high prices as formerly, on account of the increased competition and the large numbers grown, yet good prices are often made. Mr. Ladds, of Bexley, has a house 200 ft. long and 30 ft. wide entirely devoted to their culture. The plants are permanently planted out on mounds of earth 1 ft. or so higher than the floor of the house, with the view of preventing the roots from becoming sodden through the continual heavy syringings to which the foliage is necessarily subjected in order to keep it in a healthy growing state and free from insects. The bulk of the plants are from 6 ft. to 7 ft. in height, and as much in width; they start into growth early in the year, and, from February, all through the summer, they yield a profusion of large flowers. Previous to commencing to force, the plants receive a thorough dusting overhead with a mixture of soot and guano in order to clear them of mealy bug, a pest to which Gardenias are especially subject. In that state they are allowed to remain for a few days, when the mixture is washed off the foliage by means of a powerful syringe. This treatment eradicates all insects, and, owing to forcible and frequent syringings, they are never again able to gain a footing, until the plants come fully into bloom, and syringing is necessarily discontinued. Indeed, the blooms are generally all gathered before insects of any kind can do any very serious injury to them. The guano and soot, when washed off the foliage, serve to stimulate the roots, and induce a free and healthy growth, and although the leaves are sometimes slightly burnt by the mixture, yet it does not apparently injure the constitution of the plants. Some growers, on the other hand, cultivate them in 10-in. and 12-in. pots. They are allowed to grow from 3 ft. to 4 ft. high, and from 2 ft. to 3 ft. through at the base, and in April large houses full of such plants, well furnished with deep green glossy foliage, and loaded with fragrant, wax-like blossoms and buds, are seen in the best market gardens. Some prefer growing Gardenias in pots on account of their being more easily cleared of insects than when permanently planted out, and, moreover, they can be moved from place to place, or disposed of when it becomes necessary to do so. The plants grown in 6-in. pots for market are struck from cuttings inserted thickly in pots during spring, summer, and autumn; these are plunged in bottom-heat in a warm, moist atmosphere. After the cuttings have taken root they are potted off singly into 4-in. pots, and eventually shifted into 6-in. ones, in which size they are allowed to flower. Plants from which the blooms are gathered are cut back, placed in a moist heat, and in a few weeks they break up from the bottom, and soon afterwards furnish another crop of flowers. Gardenias grown in pots, it is said, produce better formed blooms than those planted out, and, moreover, they can be conveniently removed from place to place as required, and a few can be got into flower at a time, as becomes necessary. Cut blooms of Gardenias fetch from 10s. to 15s. per dozen when perfect in shape and colour. Plants in 6-in. pots, bearing from eight to twelve flowers, fetch from 15s. to 30s. per dozen. The best kind grown by market gardeners is G. intermedia; and G. radicans is is also cultivated to some extent.

The engraving which we publish this week on our front page is from a specimen grown by Messrs. John Standish & Co., of the Royal Nurseries, Ascot, who pay great attention to the cultivation of the Gardenia in their establishment. The flower in question, one of thousands of a similar size, was from a young plant of the variety intermedia, which was not more than nine or twelve months old from the cutting. To ensure flowers of the quality and size, it is absolutely necessary that the plants should be perfectly clean and free from mealy bug from the first formation of the plant. The compost used by Messrs. Standish is the best fibrous peat with a good admixture of silver sand. Clay's Fertiliser is plentifully used in the compost. The plants are grown in a brisk heat of about 65° or 70° at night with a rise of 20° in the daytime (with sun-heat), with abundance of water and moisture, and are placed as close as possible to the glass. When the plants are well established in their flowering pots, which are 10 in. or 12 in. in diameter, they are supplied liberally with guano and soot in the watering.

Wasps, Mice, &c., amongst Ripe Fruit.—In some situations insects, birds, and small animals do a good deal of mishief amongst ripe fruits. Birds, of course, may be kept off by nets, and a covering of hexagon netting will keep off wasps, but the netting is expensive if a large extent of wall has to be covered. Somehow, too, I always think that fruit covered up during the finishing stage of ripening is not so good in flavour or colour as when fully exposed. Where close netting cannot be had for covering choice wall fruits, such as Peaches and Nectarines, to preserve them from wasps at this season, it is a good plan to hang up bottles half filled with some sweet liquid, such as honey and beer. These should be hung up the moment the first wasp makes its appearance, for if delayed, the wasps will attack the fruit, and the probabilities are that they will continue to feast upon it, whilst if the decoy bottles had been at hand, they would have been tempted to enter, and so have found death in the bottle. Scott's wasp destroyer is also a capital remedy for them. Where mice are numerous they are often exceedingly troublesome in Vineries in which ripe Grapes are hanging. They run up the Vines and nibble the berries mostly at the top of the bunches, and soon do a large amount of mischief. The remarks just made in reference to wasps are applicable in even a greater degree to mice, for, if they once begin upon the Grapes, traps and poison will have to be baited with something tempting before they will look at them; if, however, a trap or two be kept constantly set about the houses and sheds, when a hungry mouse comes in he enters the trap and is caught before a lodgment of any number can be effected. I have at various times had a good deal of trouble with mice, and I find there is no better plan than keeping two or tree traps set in different places about the premises. There is an advantage, too, in having traps of different kinds, for mice have their peculiarities. I

have often found, when they have fought shy of the old brick traps, that by substituting Pullenger's patent or one of the ordinary forms of spring wire traps with a change of bait, that they might be captured. As regards the destruction of wasps, if they are at all troublesome the nest should be hunted up and destroyed. The old-fashioned plan—and it is still as good as any—was to mix some common gunpowder with about a fourth of its bulk of sulphur; moisten it with water so as to form a thick, paste-like putty; form it into small rolls or squibs about 3 in. long by ½ in. in diameter. These, when wrapped in paper, ignited at one end, and dropped into the hole leading to the nest, give off such a thick suffocating smother, as to render the wasps insensible, when the nests should be dug up and the whole destroyed. A little practice will enable any one to destroy wasps effectually in this way, and it is just the kind of work in which boys delight, and for which a little extra pay might be given. Another plan that might be tried in some cases is to pour gas tar down the hole. This blocks up the entrance, and the fumes from the tar smother them. It sometimes, however, fails, through the nest being at some distance from the entrance and the wasps opening another outlet.—H.

VEGETABLES.

The Schoolmaster Potato.—I have just dug up my Schoolmaster Potatoes. From half a peck (7 lb.) I have netted 108 lb., making fifteen and a half fold increase.—J. M.

Showing and Storing Potatoes.—Mr. Peter M'Kinlay, the well-known grower and exhibitor of Potatoes, stores his best samples in a large, airy out-building, lined with tiers of small wooden bins ranged one above the other, but open at the top, each one holding about half a bushel of Potatoes. Covered up with dry sawdust, they remain clean and fresh until required for table. The bins are subsequently used for storing the various sorts for seed.

Potatoes on Refuse Heaps.—Two years ago I cleaned out a pond in which the small stream flowing through it had left a large quantity of alluvial deposit. This was shot into a meadow close at hand, and formed a heap about 14 rods in area. This I planted in spring with Irish Rock Potatoes, 3 ft. apart every way. The crop which we raised last week quite realised my expectations, eight bags (160 lb.) of prime tubers coming to the scale. It is worthy of remark that they were almost entirely free from disease, while Potatoes in the kitchen garden adjacent were much affected by it. Might not many of the waste heaps which we constantly see about the country be thus advantageously utilised?—W. J. F., *Somerset*.

Late-sown Endive.—This is a good time to sow the latest crop of Endive, which should be done on a border with a good slope, so as to ensure drainage. If sown in drills 1 ft. apart and thinned just sufficient to keep the plants clear of each other, they will not get large, but will be more likely to withstand severe weather than large transplanted crops from early sowings. As they keep growing slowly in the winter, they prove serviceable during the earliest months of the year, when materials for mixed salads are in great request; the Green-curled and Batavian stand the winter better than the Moss-curled varieties.

Curled Chervil.—This useful herb is often in request for culinary purposes, and for mixing with salads, &c. It is of very easy culture, and a small bed of it will supply a large household. During the greater part of the year it may be obtained from the open air by sowing a few rows across a border at intervals of a month. To meet the demand, however, in exceptionally severe weather, a few boxes of it should be sown now, and when well established out-of-doors they may be removed to pits or houses for a mid-winter and early spring supply; for, in addition to other uses to which it may be put, it is preferred to Parsley for garnishing.

Pricking out Cauliflowers.—As soon as the young plants are large enough to handle they should be pricked out in cold pits or frames about 3 in. apart each way in good soil. They should be kept as fully exposed as possible during genial weather, but covered during severe frosts, for although hardy enough to stand several degrees, checks to the growth, either from excessive drought or cold, are the conditions most likely to induce premature hearting; therefore avoid all extremes.

Mushroom Beds.—The best season for making up these is now at hand, and when a good supply of fresh stable manure is at command it should be carefully shaken over, and any dry portions thoroughly moistened, adding a good quantity of fresh turfy loam as the work progresses. The loam will moderate the heat and make the bed last longer than it otherwise would do, as the violent heating to which the manure is sometimes exposed drives off the elements most essential for the growth of the Mushrooms, and hastens the decay of the manure, thus necessarily shortening the season of production. Beds made up firmly of this mixture seldom heat too strongly, and they may be spawned almost immediately. As soon as the spawn begins to run a good coating of new loamy soil, of a rather adhesive texture, should be sifted fine and applied as a covering, beating it down as firmly as the back of a spade can make it. Beds made in this manner in situations where a moist intermediate temperature can be commanded have continued to supply abundance of Mushrooms for a long period.—J. M.

New Potatoes in Autumn.—Why should we not have new Potatoes in autumn? I have tried the experiment this season, and am quite satisfied with the results. The variety planted was Myatt's Early Ashleaf. In spring I kept rubbing the buds off a limited number of tubers, which were also retarded as much as possible by being kept in a cool place and laid out singly. The buds were rubbed off them up to within a short time of planting, when they were allowed to grow to from 1 in. to 2 in. in length. The planting was done early in June, on the same border from which the early crop was taken. It was in no way prepared, beyond adding a little leaf-mould on which to lay the seed when the drills were drawn. Potatoes, I have always observed, turn out white and clean when there is a slight layer of leaf mould placed under and above them. The drills were drawn in an oblique direction, as the border is a south one, and thus the side of the drill was fully exposed to the warmth of the sun. The crop is now becoming fit for use, and promises to be in every respect satisfactory. The haulm is of course weak, consequent on the shoots being rubbed away so often, but the tubers are a fair size, well formed, and of excellent quality. They will not be ready for lifting for some time yet, and when they are a portion will be laid in sand, where they will keep clean and fresh for a further period. By making one or two plantings from the beginning of June to July a succession of young Potatoes might be kept up to Christmas.—W. H.

FRUIT.

Figs in the Open Air.—I have lately gathered from open walls some of the finest Figs I ever saw, and from a position, too, where we could not get other fruit trees to succeed. The wall in question looks full south. We dug deep pits within 3 ft. of its base in space which is used as a footpath and gravelled, and consequently the soil over the Fig roots is very hard. Thus circumstanced, the trees make short, well-ripened wood, and the heat reflected from some glass pits built in front of the wall ripens the fruit from three weeks to a month earlier than in more open positions. This wall is never too hot for Figs, and we have some with even more restricted root-room that bear good crops if well soaked with water when the fruit is swelling, for if allowed to suffer from want of moisture, it is apt to drop prematurely. Figs should, therefore, be mulched over the roots, and a few thorough good waterings should be given them when they are in full growth. The pruning and training adopted is of the simplest kind; in short, we only stop those shoots in summer that are getting bare at the base, and remove them entirely in the following spring. Figs must on no account be trained too thickly, as the foliage, which is large, must be fully exposed to light. I allow the current year's growths to grow away from the wall, as by nailing them in closely the embryo Figs are encouraged to swell, an occurrence which must be by all means avoided. As a protection from frost the easiest method is to unnail all the shoots and lay them down by the base of the wall, where they should be covered with Fern, Spruce branches, &c. In spring what pruning they require may be given them and the branches firmly secured by strong ties at the proper distance apart, keeping up an equal distribution of young bearing wood from base to top. Fancy modes of training are not applicable to Fig culture. As regards sorts, the Brown Turkey is both trustworthy and prolific; the White Marseilles is the finest kind, but it is not nearly so prolific. Positions suitable for Figs occur everywhere, for their foliage is as handsome as that of many climbing plants, and the attention which they require is about the least needed by any kind of fruit tree, while the chances of a crop are all in their favour, as they are late in starting into growth, and consequently avoid that greatest of all drawbacks to hardy fruit culture—inclement springs. A hot, dry summer, which is so disastrous to so many other kinds of crops, will give us, with a minimum of labour, an abundance of luscious Figs in autumn.—J. G., *Suffolk*.

Gooseberries and Currants as Espaliers.—I saw a neat and excellent way of growing Gooseberries and Currants the other day. The kitchen garden is divided into the usual compartments, and at the margin of each quarter, running parallel with the walks, are small posts fixed several feet apart and about 3 ft. high; to these are strained three lines of stout iron wire, openings being only left at the corners, sufficiently large to allow a wheelbarrow to pass. The Gooseberries and Currants are planted 18 in. asunder, and three rods are carefully trained up the wires about 6 in. apart. These have reached the top of the trellis long ago, and are pruned on the close-spur system. Thus planted, they form an unbroken line from end to end, and present a very neat appearance, especially when loaded with fruit. Prominent among the Gooseberries were the Warrington and the old-fashioned small Rough Red. Gooseberries and Currants managed in this way occupy no more space than a row of Parsley; the fruit can be gathered without having to step off the walks, and an ordinary length of netting dropped loosely over the top, touching the ground on both sides, acts as a thorough protection from birds. The trees in question have been planted about sixteen years, and judging from appearances they will keep in good condition for many years to come.—H. H.

Pruning Peach Trees.—As soon as the fruit is gathered, all the small shoots should be unnailed, and all the wood which has borne fruit cut back to the point whence the young wood starts; unless there are vacancies to fill up, there is no occasion to wait for the falling of the leaves to do this, as I believe the sooner this is done in autumn the better the young wood will ripen; but shortening of the young wood had better be delayed till February for two reasons: First, because after the buds have swelled a little there will be no difficulty in distinguishing the flower-buds from those that produce wood only, and it is important to cut each shoot back to a wood-bud, as without a leader the fruit, even if it set, will be flavourless; and secondly, leaving the shortening till the buds are pushing, and leaving the tree unnailed till the last moment, has a tendency to retard its flowering, and a few days' delay in the case of severe weather sometimes saves the crop. The young wood should be cut back one-third, one-half, or two-thirds, according to its strength and firmness; always cut back to well-ripened wood.

Rust on Grapes.—Having seen in GARDENING that a correspondent attributes the cause of rust on Grapes to the thinning scissors, I thought it might prove of benefit to the readers of GARDENING to give the experiment I tried on several occasions a few years ago when I was in the Vineries at Welbeck, where Grapes are grown in abundance. My opinion is that rust on Grapes is caused by the hair of the head coming in contact with the berries when thinning. I tried several bunches, and found every bunch I let my hair touch turned rusty, and I do not think there is any other cause. I have since tried the same experiment, and always with the same results.—E. WHITING.

Choice of Apples.—I think any notes on this matter may be interesting to many of your readers, as they are to me, and I hope others will give their experience on the subject. Among twenty or more kinds, the only two which gave me a satisfactory crop this year are Duchess of Oldenburg and Small's Admirable. Keswick Codlin has a great number of Apples, but they are small and almost worthless this year. The Duchess has borne well each year since it came into bearing, and so also has Small's Admirable, but I do not rate its quality so high as some do. Alluvial soil in the east of England.—A. B. G.

AUTUMNAL-FLOWERING STOCKS.

This is a race of Stocks of a very useful character, and it is doubtful if their qualities are so well known as they deserve to be. They are termed autumnal Stocks because they flower later in the summer than the ordinary Ten-week, though like it they are annuals. When looking over Messrs. Sutton's seed grounds at Reading a few days ago I saw there autumnal Stocks growing under several names, such as the Cape, Emperor, Imperial, and East Lothian, besides others. They are particularly valuable, inasmuch as they prolong the blooming season of Stocks, and if the Intermediates are grown in pots for spring flowering they commence the floral season, which, taken up by the Queens and Bromptons, is carried on by the German Ten-week, and finished by the autumn-flowering varieties. By a little judicious management a garden may possess Stocks in bloom from April till November, or, it might be said, nine months in the year.

The autumn Stocks are remarkable for their free branching growth. The plants throw out a large number of side branches, each producing a spike of flowers, and one plant will furnish a large number of spikes. The bloom is put forth successionally, and an individual plant will bear many more flowers than one of the large-flowered kinds. Advantage was taken of the several types of Ten-week Stocks growing together to compare them, and it was difficult to say wherein the Cape Stocks differed from the autumnal and the others named above. They appeared to be all of one type, but with differences as regards precocity or backwardness, or of quality and size in the flowers. But that the type under whatever name it may be known is a very useful one there can be no doubt. In Scotland the East Lothian Intermediate Stocks are now extensively grown. Our English Intermediate Stocks are sown in July and August, and wintered in cold frames to bloom in spring. In Scotland the East Lothian Stocks, which are exactly of the character of the autumn-flowering type, are sown about the end of March in a frame or under hand-glasses, and when large enough are transplanted to the border or beds where they are to bloom. This is done about the middle of May, when the plants are 2 in. or 3 in. high, and transplant well. Throughout August, September, and October they flower freely and very finely if the strain is good, and when the autumn is fine and dry they will continue in flower till November.

The culture of these Stocks can be strongly recommended for cutting purposes. They produce side shoots in such abundance that cutting can be carried on unsparingly. Of the types at Reading preference is given to the East Lothian; and their superiority in the matter of size, brilliancy, and distinctness, as regards colours and the fullness of the flowers, can no doubt be accounted for from the fact that Scotch growers have well selected their strains, and greatly improved them in doing so. Seed of a good Scotch strain is dear, but the grower will be certain to have fine double flowers, and the free branching habit of the plants makes it necessary that they should be planted farther apart than the ordinary Ten-week. One best realises the beauty of Stocks when they are grown in masses. This is what our Scotch friends do to perfection; grouping Stocks is with them an essential part of flower gardening, and they are enabled to work out charming pictures that command admiration from all who see them.

R.

Rice-paper Plant (Aralia papyrifera).—This plant, of which the annexed engraving is an illustration, is one which has of late years been much employed in what is termed subtropical gardening. In northern counties it can only be put out-of-doors from May till October, but in the south it is almost hardy. Anyone having an unheated house might grow it with advantage, for it could be put out during the summer, and would help to decorate the greenhouse during the winter. This Aralia is chiefly propagated by means of its fleshy roots, which are formed at the base of the stem. When the plants are taken up in autumn these roots are taken off and cut into 1-in. lengths, and placed in pans of light soil about ½ in. below the surface. The pans are then placed on the shelf of a greenhouse, or in a frame close to the glass, in a temperature of about 80°. In due time these roots throw out shoots, which are potted on, and when well established they are removed to a cooler temperature, and finally hardened off ready for planting out-of-doors.

Rice-paper Plant (Aralia papyrifera); hardy in the south of England.

Alstrœmerias.—In soils and situations where Alstrœmerias are found to succeed, a more useful or showy class of plants cannot be had, their large, Lily-like heads of bloom being exceedingly useful for cutting, as well as particularly showy and attractive. In order to get them to do well, however, the soil in which they are to be planted should be deeply trenched or stirred, and if at all stiff, or of a wet, retentive nature, it should have plenty of leaf-soil and sand worked into it, the tuberous roots of Alstrœmerias, when lying dormant in winter, being readily injured by stagnant moisture, which soon brings on decay. To prevent this, the best way is to prepare the bed for them at starting by thorough drainage, as it is an operation that pays well for the labour bestowed on it, Alstrœmerias being plants that when once fairly established will last a lifetime without much care or attention. A narrow, south border along the front of a greenhouse or other similar position is the best situation for them, as there they get the protection of the wall, and from the slight warmth maintained inside are not subjected so much to the action of frost as they would be elsewhere. Being naturally deep-rooting plants, the drainage should be placed at least 2 ft. beneath the surface, and have some rough material, such as half-decomposed manure or fresh-cut turf, laid on the top to insure the interstices being kept free and open. This done, the filling in and planting may be carried out either now or at any time between August and May; but the best season is after winter is over, as then there is no risk from frost or wet, and the plants soon start away and become established. A good way in which to manage Alstrœmerias is to sow the seed where they are to remain, as of all herbaceous subjects they are the most difficult to transplant, an operation that can only be successfully performed by trenching the tubers out just as growth commences, and if they are then carefully handled, so as not to bruise or break them, most of the more fleshy portions will be found to grow. In the case of seed sowing, drills of about 1 in. deep should be drawn, in rows 1 ft. or so apart, in which, when the plants come up, they should be allowed the same distance asunder. They will soon furnish the bed or border, and make a grand display. To protect them from frost during severe weather, a slight mulching of some kind is necessary, and nothing answers the purpose better than half-decomposed leaf-soil, which is a capital non-conductor, and as neat-looking as anything that can be used.

The Spotted-leaved Arum (Richardia albo-maculata).—Grown in groups in deep, rich soil, this plant produces a fine effect. It should be planted early in spring, and, if in a light, sunny position, its leaves will become large and finely spotted, and from good roots flowers will be produced freely. After the leaves have died down in autumn the roots should be lifted and stored in sand or dry soil in a shed or cellar. If wanted for pots a few roots may be started when required; they force well and make excellent window plants. Market growers are paying attention to its culture, and it will soon be as plentiful as the green-leaved form.

Triteleia laxa.—I would specially recommend this plant for the herbaceous border. It is a most beautiful plant resembling, when in bloom an African Lily (Agapanthus) in miniature, but with flowers of a deeper richer shade, being of a fine Tyrian purple. The present is a good time to get bulbs of this plant, which should be planted in deep loamy soil, and have some sand scattered on and around them to preserve them from excess of wet while lying dormant during winter.—S.

Prolonging the Blooming of Sweet Peas.—When Sweet Peas are getting rather past their best they should be cut down level with the tops of the sticks, and renewed growth will be the result. From the bottom to the top a new growth will spring up, and there will be an abundance of bloom until the end of October. All seed pods should be kept clipped off unless seed be wanted, and if a good soaking of manure water be given when the plants commence to make fresh growth it will do much good.

How to Raise Verbena venosa.—Since the ordinary varieties of Verbena have almost disappeared from flower gardens the peculiar colour afforded by this sort (a bluish-violet) has been more than ever valuable, not only for furnishing whole beds with that particular shade, but more especially from the good effect produced by it in mixed beds, as, for instance, associated with variegated-leaved Pelargoniums, such as P. Manglesi, &c. Its wiry, upright habit of growth, not exceeding 18 in. in height, renders it a suitable plant for many combinations. It will survive the winter out-of-doors in dry, warm soils, and if lifted and placed in a warm house or frame abundance of cuttings may be procured in spring that will strike freely. If, however, a large quantity of good, hardy, bushy plants be required, the best plan is to procure seed of it and sow it in shallow boxes in autumn, and by keeping the seedlings in a cool house or pit during winter, dwarf, bushy plants in abundance may be secured by May.—G.

The Cardinal-flower Lobelia (L. fulgens) **in Towns.**—This, as a pot plant, may be well flowered in London. I purchased some plants in May in 2½-in. pots. Instead of transplanting into larger pots, as I had done before when I failed to flower them, I placed the pots in 5-in. ones, and packed the space between with Cocoa-nut fibre. The experiment succeeded well, and every plant so treated has flowered. Many plants do well when treated in the same manner. Little root room, if only the roots can be kept moist and protected from extreme heat and cold, seems to be favourable to the formation of flowers.—L. B.

Bouquet or Pompone Dahlias.—During these last few years this section of the Dahlia family has become very popular; the blooms being small and compact, resembling a Ranunculus more than those of a Dahlia, makes them much more serviceable in cut-flower decoration than those of ordinary border Dahlias. I have also found them most effective as a background in mixed borders or for large beds. The roots, left in the open ground all winter, are quite safe if a good coating of coal-ashes be put over them when the tops are cut down. If lifted for purposes of propagation they may be safely stored in any cool shed secure from frost, and if covered with any partially dry material, such as old tan, Cocoa-nut fibre, or leaf-mould, they will start more strongly into growth than if over-dried by exposure to the atmosphere. At this season the flowers are especially useful in floral decorations of a large character, where delicate or fragile blossoms are not nearly so effective; and the Dahlia, moreover, will last in a perfectly fresh condition for some length of time, even without inserting its stalks in water—a great gain where, as in the case of harvest festivals, school treats, &c., the decorations have to be extemporised without having recourse to the best preservatives. I have found the following varieties all that could be desired, viz., Angel of Peace, Bessie, Bijou, Crimson Beauty, Fireball, floribunda, Glowworm, Golden Canary, Jubilee, Little Bobby, Little Darling, Little Dear, Little Helen, Little Nigger, Little Snowball, Pearl of Lilliputs, Prince of Wales, Pure Love, Sacramento, Sappho, Seraph, Sunshine, Tomtit, and Voltaire.—G. R.

Chrysanthemum Burridgeanum.—This beautiful hardy annual, which is now in full flower in some gardens, bas been some years in cultivation. It was raised from seeds of C. tricolor by Mr. Burridge, a seed grower in Suffolk, after whom it has been named. The parent species or type, C. tricolor, or C. carinatum, as it is often called, is a native of Barbary, whence it was introduced about 1796, and has since been grown as a distinct and effective autumn-flowering plant. The improved variety, as shown by our illustration, is a compact and bushy-habited plant, and bears large golden-yellow flowers, each having a dark purplish-brown zone and a purple eye or disc, the colours being very bright and well defined. It is best propagated from seeds sown towards the end of May in open beds or borders where the plants are to flower, or they may be sown earlier in pans or boxes of light, rich earth, in a pit or frame, from which they can be transplanted after all danger from frost is over. Planted singly in rich soil in an open and sunny position, it forms one of the most beautiful of all composite-flowered annuals, and well deserves culture. It generally blooms in August, and lasts fully three months in beauty, or until cut down by frost.—B.

Antirrhinums as Annuals.—Many who treat the Antirrhinum as a biennial have had to deplore the loss, through the severity of last winter, of many a promising plantation, hopelessly killed root and branch. This calamity has occurred two years in succession; hard frosts following a wet autumn appear to be most destructive to Antirrhinums. I saw in a nursery a few days ago some large beds in full bloom of very fine Antirrhinums, all of which had been raised from seed sown in heat in January and February last; the young plants had been grown on into size as fast as possible and then planted out in the open ground. This is not a new, though it is an uncommon, practice, and the great advantage derived from it is, that it makes one independent of the severity of the winter. The plants in bloom were of large size, and were producing large spikes of very fine flowers, some of the striped varieties being of great beauty. The Tom Thumb varieties, also sown at the same time, are very attractive, and well suited for small gardens.—D.

Echeveria secunda glauca.—This pretty little succulent, so highly valued on account of its neat, compact habit and the glaucous hue of its foliage for bedding-out purposes, is equally valuable as a flowering plant. Those who carefully pick off each flower-stem as it appears are probably little aware that by so doing they are depriving themselves of half the pleasure that this plant is capable of affording. A well-developed plant will throw up half-a-dozen flower-stems, which, being of a bright coral-red, and bearing a profusion of orange-red wax-like flowers, offer a pleasing contrast to the glaucous tint of the foliage. The blooming period is a long one, lasting from the middle of May to the end of August, the flowers, owing to their great substance, possessing the ability of withstanding any amount of wet weather.—C. B.

ROSES.

Pruning Marechal Niel Rose.—Considerable diversity of opinion has been expressed from time to time as to the best method of growing this Rose, some asserting that it does best on its own roots, others being equally sanguine that it succeeds most satisfactorily on the seedling Brier or some other stock. Leaving these differences out of the question for the present, permit me to allude to another peculiarity in the cultivation of Maréchal Niel, and that is the time at which it should be pruned, and also how that operation ought to be performed. When in a semi-dormant state this Rose dislikes much knife work. Several examples of it planted out here two years ago, and which were unusually strong (one having made a main rod from 25 ft. to 30 ft. long last year) got infested with green fly, and in fumigating it some of the more tender leaves got injured through the Tobacco smoke. This was when the buds were about half developed last spring, and, of course, wherever the leaves were most injured the flowers suffered in proportion. After flowering, I decided on heading back some of the plants with a view to strengthening them when they began to push. I find, however, that the rods that are strongest at the base are the weakest in pushing, and one or two of the plants are so weak that they will have to be replaced; other plants of moderate growth have pushed vigorous shoots from their base. It is hard to get over facts like these, which point directly to the Rose doing best on its own roots. Had our plants been worked on the Brier or any other stock, the probability is that most of them would have died, whereas every succeeding shoot that is produced from the base is a degree stronger than its predecessor, and tends to increase and invigorate the roots. I would recommend, therefore, that all pruning, or rather thinning out, necessary in the case of this Rose should be done when the plants are in full growth, and not before they start after flowering. The strongest shoots should be selected, and the weaker ones rubbed off with the fingers at an early stage of their growth, and if further thinning be necessary it should be done before the season of growth is very far advanced. It is so easy to propagate a few fresh plants every season that those who desire to cultivate this Rose by the simplest method should be prepared for the loss of an old plant from time to time by having young ones ready to take its place.—W., *Liverpool.*

Tricolor-flowered Chrysanthemum (C. Burridgeanum).

Rose Souvenir de la Malmaison.—Few Roses are more effective just now than this, all the strong shoots of which are crowned with lovely bunches of the most delicate flesh-coloured blossoms. Beds of this kind, in which Tritomas and other autumn flowers have been planted, have a fine effect at this season of the year.—J.

House and Window Gardening.

HINTS ON WINDOW PLANTS.

Pots 6 in. in diameter are large enough for most window plants, and some would require pots of less size. For various reasons it is a bad practice to use pots a second time till they have been well cleaned out. All potting should as far as possible be done by the end of August. It gives time for the plant to get well established before the short days of winter. If the importance of this were more generally recognised, there would be fewer deaths among window plants in winter. Late potting, accompanied, perhaps, by a too free use of the watering pot, causes soft, sappy growth at a time when maturation should be the first consideration. As a rule, when the days shorten less water will be required, but even then, whenever it is necessary to water at all, enough should be given to moisten all the soil, only it will be required much less frequently. These strictures upon late potting do not refer to bulbs. September is time enough for Hyacinths, Tulips, Crocuses, &c., as their natural period of growth is in the winter. Plant culture in rooms requires constant watchfulness; cleanliness is as important for the health of plants as for human beings. If the leaves be coated with dust, or the young growths infested with green fly, it is a sure sign of neglect on the part of the cultivator; the sponge should be used as often as convenient to remove dust from the leaves, and advantage should be taken of every warm shower to place the plants outside for a few hours.

If a strict watch be kept, the green fly, when it makes its appearance, may be easily kept down by picking them off without resorting to other remedial measures, which are all more or less troublesome to apply. The object should be to keep the plants clean and healthy, and by giving plenty of ventilation on all favourable occasions to make the growth hardy and strong. The ventilation of rooms where plants are growing is well worth some study, especially as I believe the more perfectly that is done the better will be not only the health of the plants, but also of the human occupants. In cold weather ventilate, if at all, only at the top of the window. Never allow a cold, keen blast from the east or north to blow through them, chilling their sap and almost shrivelling up their foliage. Be particular to open the windows early in the morning when the weather is favourable; and on warm sunny days, especially in early spring, a free ventilation will be beneficial to give colour and strength to the young growth.

In spite of all the care taken to insure strong, healthy growth, should insects attack them in large numbers, they must be destroyed, or they will ruin all hopes of obtaining good blooms. This may be effected either by fumigation or by washing with an insecticide. A friend of mine, whose windows were the admiration of all who saw them, made a wire frame and covered it with oiled calico; and whenever he saw any flies on his plants he moved them to the back kitchen table, placed his calico cover

over them, and introduced a small iron plate on which a red-hot coal or two had been placed, with sufficient Tobacco placed on the coals to fill the calico cover full of smoke, which very effectually destroyed the insects; the Tobacco, however, must never be allowed to flare or blaze, or the tender foliage of some plants will suffer. A very useful dip may be made by dissolving 2 oz. of soft soap in a gallon of soft water; then place 1 oz. of Tobacco in a basin or other vessel, and pour over it 1 quart of boiling water; when the strength has been extracted from the Tobacco, the liquid may be passed through a strainer and mixed with the soap and water. The plants should be taken one at a time and their heads dipped in the mixture, taking care that none of it gets into the pots. After dipping lay them on their sides for a few minutes, and before the solution dries on them rinse them in clean water. Either of these methods will effectually destroy the insects without injuring the plants; but, as I have previously stated, never allow the plants to suffer from want of water; pay special attention to ventilation, taking advantage of warm showers to place them outside for an hour or two, and keep a watchful eye for the appearance of the first fly, and destroy it before there is time to found a colony of them. H. E.

A Pretty Table Ornament.—Few persons know what a simple and truly exquisite ornament for the centre of the table can be had by those who are fortunate enough to procure some common white Water Lilies, which are, I think, the greatest gems of our wild flowers. Get a large full-blown flower and put it in a shallow dish or soup plate filled with water, and arrange some of the dark green leaves all round the plate; then put the Lily in the middle; with a few more leaves and place one or two half-open buds here and there, and you have your centrepiece complete, and one which everyone will admire. The natural growth of the Water Lily makes it a useful and valuable subject for arrangement, as suggested, because when thus settled we see it as it is found in its native home, and therefore has no artificial look about it.—W. A. G.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

August 30.—Sowing Radishes, also Lobelias in pots for winter blooming; potting off and plunging in bottom-heat Neapolitan Violets; shifting the few remaining spring-struck scented-leaved Pelargoniums into 6-in. pots; potting up cuttings of double Wallflowers; potting off Hollyhocks, also Brompton Stocks for planting in spring, and young Callas; shifting Primulas into their flowering pots; shifting some seedling Cinerarias into their flowering pots; putting in cuttings of Gazanias, also of Alyssum, Oxalis, Centaurea, Petunia, Tropæolum, and Agathea; planting Endive beneath hedges, also more July sown Coleworts; getting off all Strawberry runners in pots, and placing them ready for planting; putting stakes to tree Mignonette; tying Chrysanthemums; washing Orange trees for scale; digging land for Cabbage Lettuce; beginning to stub up useless fruit trees, and prepare ground for others; going over trees again in order to remove breastwood; thinning latest Turnips; hoeing and thinning winter Spinach.

August 31.—Potting off autumn-struck Coleus, Pelargoniums, and latest-sown Cinerarias; planting some young Cucumbers in large pots; beginning to plant Strawberry runners; tying up Endive to blanch; washing Camellias; cutting Lavender; pulling up Marjoram for drying, also spring-sown Onions; getting land dug for August-sown Lettuce; stopping growing shoots on Vines.

Sept. 1.—Arranging conservatory, and introducing to it Celosias, Maize, late Fuchsias, Pelargoniums, Coleus Verschaffelti and Duchess of Edinburgh, Cannas, Caladiums, Centaureas, Wigandias, and Palms; putting in cuttings of Heliotropes, Verbenas, and Antennaria tomentosa; pricking out young Pinks; staking and tying various hard-wooded plants; manuring Pea land for Strawberry plantation.

Sept. 2.—Sowing Mignonette in pots, Radishes, and Mustard and Cress regularly; shifting Gesneras into their flowering-pots; shaking out Pelargoniums and repotting them in smaller pots; shifting the latest-sown Balsams, also the latest-struck Fuchsias and latest-sown Primulas into their flowering-pots; putting in some Hydrangea cuttings; planting All-the-year-round Lettuce; gathering orchard Apples, also some Beurré Benoit and autumn Bergamot Pears; budding the last of the Briers; top-dressing Roses with horse manure and loam.

Sept. 3.—Sowing a little more Spinach to come in useful in spring; potting layered Anne Boleyn Pinks; shifting hardy Rhododendrons into larger pots; putting Salvia and Ageratum cuttings out-of-doors; putting Daturas where they could receive full sun to ripen their wood; planting Violets in frame; syringing out-door Peaches every evening to keep down spider; salting walks to keep down weeds.

Sept. 4.—Sowing Centaureas and Radishes to come in in October; potting young Czar Violets, and putting Calceolarias into pit; also potting layered Carnations; shifting some Ghent Azaleas into larger pots; putting half the orchard-house trees out-of-doors; inserting cuttings of Coleus and of variegated Sedum; planting Tennis Ball and Bath Cos Lettuce, also Sweet Williams; tying up straggling shoots of Irish Yews, staking Mignonette; bunching up Basil and placing it in a cool, airy place to dry; netting Plums; exposing Tomatoes to direct sunlight; making some beds ready for Winter Lettuce by spreading manure on undug ground, and throwing soil from the alleys over it, a method which answers well; stopping Tomatoes.

Flower Garden.

Walks must be rolled frequently, edgings cut at least once a fortnight, and lawns kept short and trim. This is the season in which to propagate Pelargoniums; but if, for want of cuttings, this cannot be done, provision should be made for wintering the old plants and propagating in the spring. A few store pots of cuttings of each of the following should be got in as soon as possible now: Coleus, Iresines, Alternantheras, Heliotropes, Verbenas, Petunias, Ageratums, Lobelias, and all plants of a similar character. Violas and Calceolarias need not yet be propagated, as they strike well in cold frames if put in any time before the middle of October. In mixed borders the first opportunity should be taken to stake Phloxes, Potentillas, Chrysanthemums, &c., and any vacant spots may be utilised for sowing a few hardy annuals, such as Limnanthes Douglasi, Collinsia bicolor, Saponaria calabrica, Silene pendula, Nemophila atomaria, and Candytufts, all of which are perfectly hardy, and will flower very early in the spring, and at a time when other flowers are scarce.

Salvias.—The kinds intended for autumn flowering, as well as those to succeed them in winter and spring, should by this time have their pots tolerably filled with roots, and from their naturally strong vigorous habit they with difficulty retain their lower leaves, or keep in a healthy green colour, unless they are assisted with liquid manure; but in this it is necessary to proceed with caution and not to apply it so strong or so often as to excite an undue amount of growth, as after this time it is better to treat the plants with a view to maturing the growth which they have already made than encourage its extension further.

Greenhouses.

Where any inside painting has to be done there should be no delay, in order that the houses may be fit for the reception of the plants now placed out-of-doors. Before housing them the glass should also be well washed, and where no painting is required the woodwork also as well as the stages, and any repairs needed should be attended to. Where there are any defects in or insufficiency of piping, it can likewise be best set to rights at this season.

Camellias.—Any of the latest flowered plants which have been late in making their growth will be now about setting their buds, and in the case of those that want more root room, they should at once be placed in either larger pots or tubs, as by being moved now their flowering during the coming spring will be little affected, and through the autumn they will have time to root into the new soil, which will evidently place them in a much better position for making growth next year than if the potting were deferred until after they had bloomed in the spring, when their roots are in the tenderest condition. Those who have not potted these plants in this stage of their growth will, if they give it a trial, find it the best. Camellias are plants that require little training, and should not be submitted to the twisting and interlacing sometimes practised, and when they have got into a thin straggling state heading down is often the best remedy. But yet with plants in such a condition any strong branches may with advantage be tied in to a moderate extent when the work is done, so as not to give them a formal appearance; but branches so treated should not be bent down too much, or they generally cease to make further growth from the points, simply pushing out young shoots where bent.

Oranges.—Where these are turned out-of-doors in the summer after their growth is made, it is doubtful whether they are ever benefited by such exposure, especially if the plants are deficient of roots proportionate to the size of the pots or tubs they occupy. Specimens in the best of health should at once be got under cover, for although they often bear a good deal of indifferent treatment and seldom die suddenly, it is a very common occurrence to see them in a dwindling state. They come from latitudes too warm to be benefited by exposure to the fluctuations of our climate. Previous to taking them in, it is well to give them a thorough cleaning, especially where affected with scale, as at this time when such as have been thus out-of-doors will have made early growth, and had their wood and leaves hardened up, they are much less likely to have their foliage injured by the sponging and brushing necessary to remove the insects. The removal of the dirt deposited on the leaves by brown scale is essential to keeping them in a healthy condition.

Fruit.

Gathering fruit as it ripens is now an important point, and requires great attention. Fruits must not be gathered when wet, nor during hot sunny weather, and they must be handled very gently. In the case of early Pears it is not well to leave them on the trees until they are quite ripe; and as a rule they should be gathered a day or two before they are in that condition, otherwise they are apt to become dry and rotten at the core. The choicest wall fruits should be protected from wasps, birds, and flies with hexagon netting or other material of that kind. Remove all unnecessary lateral growths, and expose the fruits as freely as possible. Morello Cherries should now all be gathered, the trees thoroughly cleared of vermin, and the new shoots of the current year nailed or tied in. Established Strawberry plantations should have all the runners cut off, and the ground between the rows "pointed" over, and afterwards thickly mulched with good manure. Newly-planted plots should also have the runners persistently pinched off. The plantation made with the earliest forced plants may be expected to fruit freely this autumn, and for these a layer of clean straw to keep the fruit clean should now be applied. The ligatures of grafts ought now to be removed, and the shoots produced by the stocks should be kept rubbed off. In some instances, such as where the union has not been properly established, a temporary tie may be requisite, in order to prevent injury from windwaving.

Vines.—Now is the best time to cover outside borders attached to Vineries in which Grapes are intended to hang during the greater part of the winter; when delayed until further on in the season the soil often gets thoroughly wet, and the benefit which should result from covering is never realised. Where the border is thatched or covered with litter clear it away, and lightly fork over the soil before putting on the covering. Thin deal shutters, in breadths of 6 ft. by 12 ft., make the best protectors. One end should be placed close against the front of the house on two bricks, one above the other, and a shutter 12 ft. from this is generally sufficient protection. The lower or bottom end should rest on one brick; thus sufficient incline is given to throw off the water, and space is left between the boards and the soil to allow a free circulation of air. Glass sashes do just as well as wooden shutters, but during autumn and winter these are generally needed for other purposes. Tarpaulin may be used where neither of these protectors can be had, but it is inferior to both of them.

Vegetables.

Sow American Red Stone, White Stone, and Strap-leaved Turnips on Potato ground, and hoe and thin previous sowings, always using the most advanced roots first. Sow Radishes according to the demand in a warm position; the early autumn sowings generally yield first-rate produce. Sow some Spinach for spring use, and also some Early Horn Carrots on a warm border for the same purpose. Earth up Leeks as they grow. Clear away exhausted crops of French Beans. Potatoes, when lifted, should be stored in a dry place, and not laid more than 1 ft. or so in thickness. Under such conditions, they can be turned over three or four times at intervals of ten days or so, each time picking out any that show signs of decay. Those that remain sound after that will be likely to keep. Potatoes should always (but more especially when disease is prevalent) be stored in a cool and thoroughly dry shed, where air can get to them, except in frosty weather. As a matter of course, they must be kept in the dark, or they will become more or less green, which impairs their value as food.

GLASSHOUSES AND FRAMES.

HYACINTHS IN POTS.

Now the various bulb catalogues are daily reaching us it reminds us to say a few words on the culture of the Hyacinth. The first thing is to have fine, heavy bulbs to start with, although there are exceptions to this rule. Many varieties never make large roots, but form, notwithstanding, magnificent spikes. Do not, therefore, be disappointed if you buy a few small bulbs; but the great average should consist of large roots, which should, as said before, be weighty and plump, not light and loose or advanced in growth. The better the bulbs, the better the flowers assuredly are. Much also depends on securing the bulbs early. Orders should be given early, for the first-comer is the first served, and carries off the cream of the bulbs. Again, early potting secures early rooting, and early rooting strength and health. No Hyacinth will force satisfactorily unless it is made first to root well; and without this is attended to, the finest bulb will do badly, and only prove a mortification to the grower and be an utter failure.

The soil for the Hyacinth should be rich, light, and porous, and rather loose. It is one of those bulbs that does not like firm potting, and cannot endure cramming in; above and around the bulb the soil should be but slightly pressed; the latter should be a sandy loam, but mixed with old decayed cow manure; drain liberally, and fill a 6-in. pot up to rather above one-half, put a thin layer of clean, sharp, silver sand at the base of the bulb, place the bulb upon it, cover the crown, but do not bury it; let the soil be in a fair state as to moisture, for the bulbs will not receive water for some time. The next step is to choose the right place and treatment for the development of the roots; it is obvious that if the pots were placed in full light that the tops would come forth in advance of the roots. This is the one thing to be guarded against at this stage; we must first have roots in strength and number; place the pots in a cool, well-drained, dry situation in the garden—best in an old frame with the lights off—and place a 3-in. pot over each bulb; this will keep it clean and from rotting; cover the drain-hole of the pot with a small stone or potsherd, and place about 6 in. to 9 in. or 1 ft. thick of clean ashes over them, taking care that the sides of the frame are also well covered with this material. The darkness and seclusion encourage root growth, and in about six weeks the pots will be quite full of roots, and the tops will start with strength and vigour.

Practically after four weeks the ashes should be removed, and a more moist substitute, such as Cocoa-nut fibre or spent tan, should replace them. Now the pots should be moved into a low, well-lighted house, and be placed close under and near the glass—not on a shelf, however—this does not suit them, but on a moist substance or ashes; the small pots should be left over the bulbs for a while, so that the young growth may get steadily used to the light; many growers leave a 4-in. pot over the bulbs for some time. The flowers will grow towards the light, that is, towards the opening in the top of the pot, and the leaves will keep down. This is a very essential point, and one to which much attention should be given. The leaves should stand well under, never above, and never covering the spike; and keeping the pot over the bulb will be the first step towards obtaining fine dwarf leaves. If quick forcing be wanted, the pots should be placed on a bottom-heat of 60° or 65°; the flowers will start with extraordinary rapidity, but greater strength will be obtained in a temperature 5° lower. In adopting this mode of forcing, great care must be taken in applying an excess of heat; the roots must also be thoroughly watered once or twice a day; do not let the material on which the pots stand get dry, but keep it very moist. A Hyacinth once dry enough to flag is half killed. With pots well drained it is next to impossible to over-water.

Doubtless Hyacinths flower best forced slowly into blossom, and we should advise a top temperature of 55°. Strongly grown and richly nourished with manure water, they will need the support of wires or sticks; the succulency of their stems and the strength of their flowers prevent them from standing alone with safety. Almost all nurserymen sell wire supports of the most improved forms at a very low rate. Early white Roman Hyacinths should be potted in August or September. Planted in a pot and forced, they flower quickly, and are very handy for cutting before Christmas. They are useful for bouquets and decorative purposes. F. S.

Sowing Auricula Seed.—A 6-in. pot is well adapted for Auricula seed. The pots should be nearly one-third filled with crocks, and over these a little coarse soil should be laid before the fine soil is added. A good seed soil is made up of finely-sifted loam, leaf-mould, and some finely-powdered charcoal. This should be put into the pots till within ½ in. of the rim, then press down gently till level, and the seed thinly spread over it; then the seed should be pressed into the soil, a piece of glass placed over each pot, and then put away in a cool shady part of a house or frame, shading from the sun as requisite. If the soil be used a little moist, no water will be required for a few days, but it is best to keep the soil in the seed pots fairly damp. If it gets dry, it is a good plan to place the pots in water up to the level of the soil, and allow it to rise in the soil, and gradually moisten the whole. There is a great amount of interest attaching to the raising of seedling Auriculas, especially when the seed is saved from choice flowers, but there are cases in which fine varieties have originated as chance seedlings.—D.

Souvenir de Malmaison Carnation.—This deserves a place in every garden where cut flowers or choice decorative plants are in request. The blooms are extremely large, and of a very delicate flesh colour. Young plants are preferable for pot culture; those struck in May from soft side growths in a brisk bottom heat flower within twelve months. They should be potted off into 3-in. pots in a compost of fibry turf and dry cow manure, and as soon as they are well rooted transferred to cold frames, in which they are set on coal ashes, the lights being drawn off entirely on all favourable occasions. In August they should be shifted into 5-in. and 6-in. pots, great care being exercised in watering, as if at all soddened or the drainage imperfect the plants are liable to die off. Green fly must be guarded against by fumigation or the use of Tobacco water. During winter they should be kept in a light, well-ventilated house with intermediate temperature. Such plants, if successfully handled throughout, develop splendid heads of bloom.

Plumbago capensis in Small Pots.—This, when grown in pots, is usually trained over a balloon-shaped trellis, and little is thought of it until it attains an exhibition size. When planted out it drapes a wall or rafter with excellent effect, but it is seldom one sees well-flowered plants of it in 5-in. or 6-in. pots. A week ago, however, we saw some twenty or thirty plants of this description, remarkably showy. They were in 6-in. pots, and each plant was furnished with from two to four shoots, each of which bears in succession or otherwise from three to five handsome clusters of blossom, the colour of which no other plant in cultivation can supply. These plants were not more than from 12 in. to 18 in. high, pot included, and for vases or mixing with other plants in small conservatories, and similar purposes, they are admirable. After flowering the plants should be rested and the wood well ripened, and if dwarf plants are required they should be cut down to within a few inches of the base, when they will send out shoots in spring, and yield abundance of flowers during summer and autumn. If large specimens are required, there is no reason why they could not be grown into a bush as well as other plants, and in this way they would be much more effective than formal trellis-trained plants.—S.

A Good White Pelargonium.—White flowers amongst zonal Pelargoniums are always valuable for bouquet making, and they may be had, with little trouble, every month in the year. The greatest difficulty, however, has hitherto been to obtain a kind which would flower freely, as most white Pelargoniums of the Madame Vaucher type are strong growers and shy bloomers, especially in a young state. Jean d'Arc and White Vesuvius will supply this want. In habit and leaf the former closely resembles the well-known pink Christine, whilst its flowers, which are produced in great profusion, are large, well-formed, and of the purest white. During winter this Pelargonium would be especially valuable, and any one having good plants of it, the wood of which is well ripened, would have no difficulty in obtaining a good supply of bloom during the dullest months of the year. White Vesuvius is exactly the counterpart of the Scarlet Vesuvius as regards habit and freedom of bloom.

TREES AND SHRUBS.

Pruning Conifers.—I noticed the other day a fine plant of Pinus Pinsapo, the lower branches of which had a few years ago become rather straggling and bare, and which were therefore pruned back in order to get them to make fresh growth. This plan has resulted satisfactorily, for the branches at the bottom are now as dense as at the top, and equally green and healthy. No one need, therefore, fear to prune Pinus Pinsapo should such an operation become necessary.—S.

Jasminum nudiflorum aureo-variegatum.—This is one of the best golden-foliaged wall climbers at this season of the year that we possess. It is a vigorous-growing plant, and one which ought to be cultivated by every one who values a contrast of colour on open walls, and it is as hardy as the type.—J. G.

Aspidistra lurida variegata.—This is one of the best plants that can be grown either in windows or greenhouses, being of easy culture and rapid growth, and making fine, healthy foliage, which, when well matured, will continue in good health in ordinary dwelling-rooms for a lengthened period; being of a smooth, shining character, too, it is readily divested of dust by sponging or syringing. This Aspidistra will withstand a wide range of temperature, but it retains its foliage best in an intermediate greenhouse.—J. G.

Ivy on Rockeries and Rootwork.—The small-leaved variegated kinds of Ivy have a pretty effect when introduced here and there amongst rock and rootwork. Being of comparatively slow growth and of smaller dimensions than the green kinds, they are easily kept in bounds, and do not encroach upon the other occupants of such places. If trained along the lower part of rockwork they form a neat and pretty edging, affording a charming contrast to Ferns and other dark-foliaged plants. I have remarked that in a north or shady aspect the variegation is much purer and better defined than when they grow in full sunshine.—J. C.

Myrtles on Walls.—The Myrtle is scarcely hardy enough to withstand our severest winters as an exposed bush, but on walls it does well in most parts of the kingdom, and is most effective. Its sweet-scented, evergreen leaves are welcome at all seasons for mixing with cut flowers, and at this time of the year it will in most places be beautifully in blossom. Beyond firmly nailing the strongest shoots to the wall, no training is necessary, as it looks best growing freely with its spray-like growth loose and unfettered.—G.

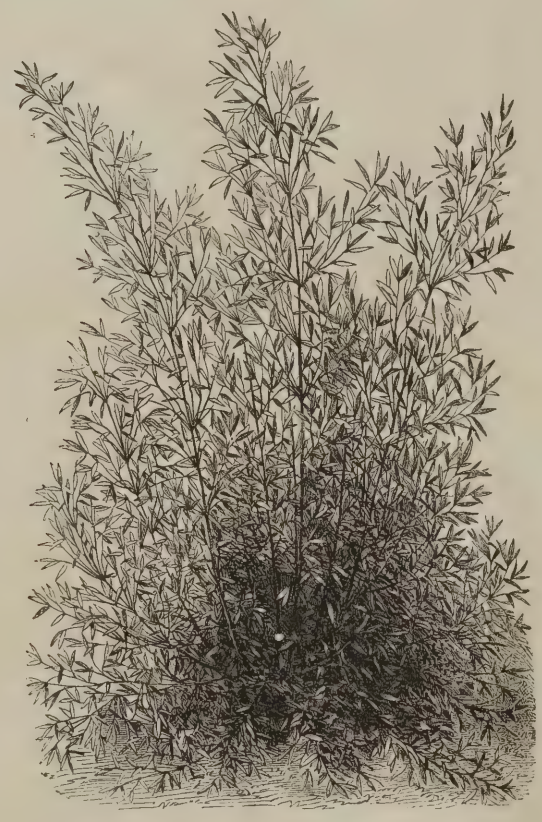
Salt-water Resisting Plants.—The Tamarisk and Sea Buckthorn will grow where washed by salt water, and the first is a very beautiful evergreen, having branches that hang over in graceful sprays, and in colour and form quite equal in appearance to many Fern fronds, and as useful as most of them for cutting to dress with flowers during the winter. The evergreen Oak succeeds uncommonly well quite close to the sea, and appears to enjoy the saline matter in the air; but whether it would grow in soils occasionally soaked with salt water, I know not, although I think it quite likely it would, if kept from them till they got their roots well down and became thoroughly established. If the ground can be thrown up into large mounds before planting, so as to get it above the general level, then Pinus Laricio and P. austriaca, with other hardy Coniferæ and other trees, might be made to succeed and form quite a feature in the landscape. The Spindle trees (Euonymuses) also succeed well near the sea.—S. D.

The Golden-stemmed Bamboo (Bambusa aurea).—This not very common Bamboo is one of the best for growing in unheated green-

houses. It is hardy only in southern counties, but given a little shelter under glass it thrives vigorously, and supplies abundance of lance-shaped, light green leaves, with wiry stalks for mixing with cut flowers. Under good culture the plant attains a height of 10 ft., but grown in pots or tubs 6 ft. probably would be the greatest height it would attain. Its stems are of a pale golden colour when matured. Moist, sandy soil suits the plant best.

ANSWERS TO QUERIES.

2749.—**Annual Perennials, &c., to be Sown Now.**—Having a greenhouse, there is no reason why it should not be utilised to the fullest possible extent by sowing annuals and perennials; but even under glass it is late to sow many such things in the hope that they will bloom next year. However, Hollyhocks, Pansies, Polyanthus, Myosotis dissitiflora and sylvatica; Aquilegias or Columbines, such as cœrulea and chrysantha; pot Marigolds, Lobelias, Pentstemons, Wallflowers, Antirrhinums, Sweet Williams, Canterbury Bells; and of greenhouse plants, Cinerarias, Primulas, and Calceolarias; of annuals, Candytufts in colours, especially the new carmine, Nemophila, Silenes, Saponaria, Chrysanthemums, Stocks (Ten-week and Intermediate), Mignonette, Bartonia aurea, Eschscholtsias, and indeed almost any hardy annual, of course, if sown so early, it will be difficult to keep these things from getting much drawn in a greenhouse. Iresine and Amarantus you could not winter in an ordinary greenhouse. Get cuttings of the first and sow seed of the other in spring. Echeverias will keep very well. Get cuttings of Pelargoniums and Fuchsias and strike them at once.—A.



The Golden-stemmed Bamboo (Bambusa aurea).

2750.—**Inferior Pelargonium Blooms.**—You doubtless allude to the ordinary forms of zonal Pelargoniums, and as no plants, as a rule, flower more freely or abundantly at this time of the year, we can but assume that your plants are either kept too dry at the roots, or are starved, or are in soil which the roots do not like. If you have plenty of light and air it would be useless to advise the giving of more, but if the plants are grown in a room, there may be some other conditions in the atmosphere not known that may cause the trusses of flower to die off. But for what you say we should have at the first advised more air and plenty of it, although no flowering plants are, as a rule, more free to bloom anywhere in pots, boxes, vases, windows, houses, or in the open air, than zonal Pelargoniums.—D.

2743.—**Wintering Plants.**—As long as frost does not exceed from 8° to 10°, a turf pit may do very well for the housing of certain kinds of plants, but when that is exceeded, then it is only by covering all over and around the sides with litter that frost can be excluded, but at what cost! You say the bottom of the pit is dry; perhaps it is now; but how will it be in the winter when the earth is full of moisture? Then if the pit is covered up close for a few days even you will be surprised to find how prevalent damp and mould is amongst your plants, and you will wonder where the moisture came from. When all the soil outside is locked up in frost, the thermal moisture will be only too pleased to find means of escape into the air through the bottom of your pit, and it will cause your plants to damp off fearfully because there is no room for its escape. It would be worse than folly to advise the wintering of plants that are tender in a mere cold pit or frame of any kind. An oil lamp may help to exclude some frost and absorb some of the damp air, but these things always break down just when most needed, that is, in very severe weather. It will be far better to keep the plants in rooms and windows where the frost can be excluded; but to make sure that such is the case, a small thermometer should be hung just inside the window, and if this showed a low, dangerous temperature within at night, then the plants should be removed to a safe distance from the window. Of course all kinds of hardy or some half-hardy plants may do in a cold frame all the winter, but if the weather necessitated the keeping it covered up for several days or weeks at a time, the things you name would inevitably only escape the frost to be killed by damp. Your Primulas, &c., may do in the frame very well until the end of even November, but not later.—A. D.

2780.—**Onion Maggot.**—Soot is one of the best remedies for Onion maggot. Its tendency is to prevent the fly that produces the maggot from depositing its eggs. Dress the land heavily before sowing the seeds, and give lighter dressings in spring. Salt also is beneficial, especially in dry seasons, by inciting the plants to rapid growth. Nitrate of soda may be beneficially used with a like object. Heavy dressings of charcoal-dust, or the bottoms of fire-heaps where rubbish has been burnt, are useful.—E. H.

2742.—**Storing Potatoes and Cropping a Garden.**—When taking up the Potatoes select the handsomest-shaped, medium-sized tubers for seed, and lay them thinly in a cool shed for the skins to harden. Afterwards pack them away in single layers, if possible in some light frost-proof place. As regards cropping his garden, "Alphonso" must read and study Gardening weekly; to go into details as to the cropping of ½ an acre of land for the season will require more space than the editor can give to it now, even supposing I had the time to write, which I have not. March is the fittest month for general spring sowing and planting. In that month, selecting a time when the land works well and cleanly, Potatoes should be planted. Peas, Beans, Onions, Parsnips, Carrots, Lettuces, Cabbages, Radishes, Brussels Sprouts, Spinach, Parsley, Celery, Leeks, Asparagus, and other things should be sown. The work for April is a continuation of March, with certain additions, such as sowing Broccoli, Cauliflowers, Vegetable Marrows, Beet, and at the latter end Scarlet Runners, and more Peas at fortnightly intervals up till the middle of June. In May and June successional sowings of various things will be necessary, and the planting of those things that require it from the seed-bed, such as Winter Greens, must be done promptly. Salading plants, such as Mustard and Cress, Radishes, and Lettuces, must be sown at frequent intervals all the summer. Celery will require pricking out. A slight hot-bed should be used for the sowing of this if possible, and plant into the trenches in June and July. At the end of the latter month or beginning of August the main crop of Cabbages should be sown; also Winter Onions and Spinach.—E. H.

2714.—**Clematis Dying at the Point.**—The points of the shoots of Clematis plants may have been injured by winds or possibly affected by electricity if growing upon galvanised wirework. The feature complained of is quite unusual, as the kinds named are very hardy and invariably do well. If neither of the probabilities above mentioned seem suitable to the case, then perhaps the roots have got into some sour soil, and would be the better to be replanted; but as the plants were planted so recently this seems hardly probable. The roots of the Clematis will feed freely on the surface if fed there with a mulching of manure and plenty of water given in hot dry weather. Fork the soil round the roots lightly, then add a mulching of long manure, and follow with a good soaking of water. This may induce renewed robust growth.—A. D.

2730.—**Uses of Ash Berries.**—It is possible to make jelly from the berries of the Mountain Ash, but not very profitably. Deduct skin and pips, and what is there left after the material has gone through the jelly bag? We once made jelly from the berries of the Berberis aquifolia, which are far more juicy than are those of the Mountain Ash; but the result was rather costly and the article not worth all the trouble. Apples, Plums, or Vegetable Marrows would make a preserve ten times more acceptable; and needing less sugar, the product would also be far more wholesome. As to the employment of the berries for Christmas decoration, that would chiefly depend upon the forbearance of the birds, who are rather partial to the fruit; and if gathered the berries would soon spoil and discolour. They are pretty on the trees; but there their merits are likely to end.—A. D.

2727.—**Edging Plants.**—Is it good taste to put a yellow edging to your borders? Does it not really border upon the vulgar? and would not the border look much better without this kind of decoration? To say the least, it is a tawdry style of gardening. If you prefer some such edging, we should suggest the silvery woolly-leaved Stachys lanata as better than the Golden Feather, and it is perennial; or you might have a line of the pretty silvery Sedum glaucum. This latter would be better than anything else for an edging. Nice clumps here and

there of Daisies, Pansies, Primroses, dwarf Campanulas, Saxifrages, and other dwarf hardy plants would be much more pleasing than any straight lines of edgings of any kind.—A.

2721.—**Cucumbers Dying.**—I remember being bothered with the same disease years ago in a house of winter Cucumbers, and I got rid of it by planting in stiffer soil and growing the plants in a lower temperature. I don't think there is any cure for it. When the canker attacks the roots nothing will save them; and the plants, even those that look healthy, won't stand a gleam of sunshine.

2806.—**Blooms Dropping from Scarlet Runners.**—The blossoms have not been fertilised, so they failed to set. The absence of insects might in some sense be looked upon as a disadvantage, as they are commonly fructified by bees and other insects. They will probably set better now the weather has become dryer, as the pollen will be in a more active condition.—E. H.

2789.—**Uses of Sewage in Gardens.**—The best way of using sewage is to pour it over the roots of plants requiring nourishment, such as Cauliflowers, Lettuces, Globe Artichokes, Peas, old fruit trees, Asparagus beds, &c. If too strong, dilute it with pond water. A mulching will be useful on the shallow soil over chalk, after the sewage has been given, to prevent too rapid evaporation. If it is not convenient to mulch, use the hoe freely.

2795.—**Greenhouse on East Aspect.**—Peaches may be grown in a house facing east, so also may Roses and flowers; but do not aim at too much at first. Plant the Peaches out along the front of the greenhouse, and train them on a trellis fixed about 16 in. from the roof inside. Plant the Roses against the ends, which they may be permitted to cover, or grow them in pots. The other flowers may also be grown in pots. Camellias, Heliotropes, and other plants for the supply of cut flowers may be planted near the back wall, and be trained to its face.—E. H.

2733.—**Club in Cabbages.**—Club in the Brassica family is caused by an insect. Plant on fresh ground if possible. If it cannot be had in any other way, trench it up from below, using heavy dressings of lime and soot. Frequent transplantings are useful, dipping the roots in a puddle composed of soot and manure water just previous to planting, trimming off all warty substances from the stems at the same time.

2794.—**My Failures.**—The Raspberry canes are probably too thick; thin them out now to let in sun and air to ripen them. Do not shorten them at all, but train them the full length by arching them over from stool to stool, tying their ends together. Give the Red Currants a good dressing of manure now, and fork it in lightly, just covering it. The Onions have been attacked by a fungus. In future dress the Onion bed heavily with soot in autumn before sowing, and again in spring.—E. H.

2734.—**Cinerarias Dying off.**—Are there any wireworms or other destructive insects in the soil? Examine it and see. Perhaps the drainage is defective or the soil not suitable. Good turfy loam with about a third of old mellow hotbed manure or decayed leaf-mould will do, adding some sand to insure the necessary porosity. Water carefully and ventilate freely.—E. H.

2735.—**Cucumbers Dying off.**—The soil is probably too light, and the plants lack stamina. Top-dress with some good sound loam with a little good manure mixed with it; press it down firmly. When the plants require water give them weak liquid manure, allowing it to stand in the sun a few hours before using it to take the chill off. A peck of soot tied up in a coarse cloth, sunk in a barrel of water, and allowed to stand a day or two, stirring it occasionally, will be suitable.

2799.—**To Keep Rain-water Pure.**—Keep it in an underground cistern and as little exposed to the air as possible. Make your cistern circular if small, oblong if large; have the bottom and sides carefully built of brick bedded in cement, and the top arched over. Cement the surface of the bottom and sides, and insert in the bottom, if necessary, a pipe to carry the water in, a waste pipe to carry off the overflow, a stone slab with a circular hole, covered with an iron plate for a man-hole, and a pipe for pump if required. If a small affair the water may be reached through the man-hole.—A. B. G.

2805.—**Dandelions on Lawns.**—The best and cheapest plan to adopt with the lawn in question would be to dig it over with a steel fork, picking out every Dandelion root or particle of root. Then make the surface fine and firm and sow a good mixture of fine Lawn Grass seeds. The beginning of next month would be a good time to sow the seeds.—E. H.

—— When these are in such force, as described by "Constant Reader," the best and most satisfactory way of proceeding is to dig the ground all over, and take out all rubbish and sow the lawn again, for which the present time is well suited. If, however, digging is objected to, they might be spudded out as deeply as possible, grass seed sown, and the lawn covered with a good compost. When the grass is all well up constant mowing and rolling shou'd be attended to. But these two latter operations cannot be depended upon to effect a cure by themselves.—James Carter & Co.

Orange-scented Gardenia (G. citriodora).

2793.—**Stove and Greenhouse Plants.** Gardenia Fortunei, G. radicans, Glonera jasminoides (a most free and continuous flowerer), Pentas carnea, Eucharis amazonica, Thyrsacanthus nutilans, any of the winter-flowering Begonias, such as Ingrami, Digswelliana, Dregei, manicata, and sanguinea, and Jasminum Sambac fl.-pl. In a temperate house, with an average temperature of 55° by day and 50° by night, Cyclamens would flower well if placed in a light position. Tropæolum Lobbi should be grown strong in the open air to be trained to the roof at the commencement of winter; Epiphyllums of various kinds best grown in baskets near the roof, Libonia floribunda, Fuchsia Dominiana, Heliotropes of kinds, Agathea cœlestis, Erica persoluta alba (the only kind that likes constant warmth), and Linum trigynum. You will succeed best by keeping them in pots, as they may then be treated according to their several requirements. Planting out for winter flowering in a glass house only answers when but one or two kinds of plants are grown.—J. C. B.

2755.—**Fruit Trees on Houses.**—On a south-east wall, therefore, with sun till noon, we have had for years a Green Gage ripening its fruit, as a rule, about the first week in August; a portion trained on to a north-east wall ripens its fruit some ten days later; they are equally good in flavour. Large Moorpark Apricots are at present ripening on the same wall. For fifteen or sixteen years a Peach tree flourished and yielded us delicious fruit; Nectarines have likewise done well. We have young trees coming forward of Coe's Golden Drop Plum and the Royal George Peach, and have no doubt the fruiting will succeed well. For a north aspect, if surface is of sufficient extent no fruit tree I know does better than the Syston Plum. Where a large space is to be covered by one tree, a means of utilising the empty wall rapidly is to put in stout cuttings of Red Currant 8 in. apart, and train them in upright cordons; these soon cover a space, and as the large fruit tree spreads, one by one can be dug up without sacrificing much room.—Midland County.

2786.—**Planting Bulbs.**—The month of

November is the best time in which to plant all kinds of border bulbs, or in pots or boxes if wanted for window or house decoration. Where bulbs are lifted from the borders in the summer that should be done as soon as the leaves are quite decayed, and the bulbs stored in paper bags in a dry cool place, or in very dry sand. Crocuses are the better not to be lifted, as are all similar bulbs that always keep best in the soil; but if in boxes the soil should not be permitted to become parched, but should be kept just as moist as the open ground would be. As far as pots are concerned, perhaps the bulbs are best out of them when ripe, as they are apt to get baked dry in the hot weather.—D.

2732.—**Cypripedium insignis.**—This Orchid belongs to the so-called cool section, requiring a night temperature of 45° to 50°, and 50° to 55° by day, to be increased if possible in spring to 60° by day and 55° by night. Like all the Cypripediums, it requires plenty of water at the root during its growing period, and should be placed in a light position in the structure, shading from hot sun. The greatest care must be taken to ensure perfect drainage, filling the pot half full of crocks, the compost to consist of fibrous peat of the best description, mixing with the same some chopped Sphagnum and small pieces of charcoal. During the winter season and when coming into flower, this plant may be kept in a warm room, and will expand its blooms perfectly therein. In fact, this Orchid makes an excellent window plant, and with careful attention in the way of sponging the leaves twice a week, might remain in the dwelling the whole year through. Those who desire a change in the way of subjects for their windows should try this plant. It is by no means difficult to grow, and charms by its novelty.—J. C. B.

2779.—**Culture of Coleus.**—The Coleus requires to be wintered in a temperature of 50° by night and 50° to 55° by day. Unless this amount of warmth can be accorded it, there is but little chance of bringing it through the winter. Cuttings struck now in a close frame, putting about six in a 4½-in. pot, and thus cared for, if potted off in March, will make fine plants by July. Or old plants may be wintered, keeping them on the side of dryness, taking off the young free shoots as early as possible. The Coleus likes a moist, warm atmosphere during the spring and early summer months, requiring a light situation, at the same time thriving best if screened from the hot sun. The soil should be free and rich—a good compost consisting of two-thirds leaf-mould and one-third loam and well-rotted dung in equal parts, adding thereto a good portion of coarse silver sand. The cuttings, however, strike best in sandy peat; and when they are potted off into small pots a little of this material added to the above-mentioned compost will be of service. Do not pot hard, and water carefully until the plants are well established. By the middle of July they will have developed into good-sized plants, and may then receive their final shift and be placed in a cool greenhouse.—B.

2797.—**Araucaria imbricata Failing.**—The roots have probably penetrated into a damp, sour subsoil. If that position of the garden where the tree stands is not well drained we would run a drain through it at a distance of some 30 ft. to 40 ft. from the stem, taking care to ensure a proper outlet for the surplus water. At the same time we would apply a top-dressing some 6 in. in thickness of good sound loam, which will have the effect of encouraging the formation of surface feeders. In this manner decay will probably be arrested.—J. C. B.

2718.—**Ferns for Shady Corner.**—Presuming that frost is to be excluded, any of the ordinary greenhouse Ferns would succeed in the position named. A suitable selection would be found in Pteris serrulata and its crested varieties, P. cretica albo-lineata, P. scaberula, Onychium japonicum, Adiantum Capillus-veneris, A. cuneatum, Asplenium bulbiferum, A. funcatum, A. lucidum, Platyloma rotundifolia, Davallia dissecta, D. bullata, Nephrodium molle, Lastrea glabella, Niphobolus Lingua, and Doodia caudata. With these may be grown such pretty Mosses as Selaginella Kraussiana and its variegated variety S. Martensi, S. Wildenowi; also Tradescantia zebrina, Panicum variegatum, and Nertera depressa, which forms a neat verdant cushion of foliage, studded in winter with scarlet berries. If a bare piece of wall exists plant Ficus repens, which will quickly cover it, and Lapageria rosea may be planted out (in peat) to cover the roof. The Ferns might be grouped around a nice Palm, such as Chamærops excelsa, Rhapis flabelliformis or Corypha australis, carpeting the soil between with Selaginella, a nice hanging basket or two completing the arrangement. Good subjects for the latter purpose are to be found in Platycerium alcicorne and Woodwardia radicans. Lygodium scandens and Selaginella cæsia arborea are climbing species both pretty and effective.—J. Cornhill.

2731.—**Spots on Rose Leaves.**—The plant in question is probably attacked by the larvæ of a small moth, which eats away the under surface of the leaves. They are exactly the colour of the leaf, are very small, and consequently not easily perceived. Hand-picking is the most effectual remedy.—C. B.

2808.—**Freesia refracta alba.**—Pot the bulbs about the middle of September in a tolerably light soil, consisting of two parts leaf-mould and one part turfy loam. Plunge the pots quite to the rims in a cold frame, keeping the soil just moist. Thus treated, they should start freely into growth.—C.

2723.—**Plants for Walls.**—You will find the following plants to do well in your house: Habrothamnus elegans, Jasmines of sorts, Lapageria rosea, L. alba, Plumbago capensis, Passiflora, of which there is some fine sorts.—E. L.

2751.—**Geraniums Turning Yellow.**—*A Learner.*—The cause of your Geraniums turning yellow must be the gas. The best way to do with the plant now is to cut it down, so as to leave a few eyes. It then will soon begin to "break" and make you a nice plant.—E. L.

2791.—**Columbines.**—All they want is shade. They do best in an east or north aspect, and require water in dry weather.—A.

—— If "H." had stated what the soil of his garden was, it would have been more possible to surmise the cause of his failure with Columbines. On the soil in my garden (upper oolite just below the chalk, of a light, sandy nature, and plenty of lime in it) Columbines do well, even the hybrid varieties, including glandulosa, which is a shy flowerer. The common kinds seed themselves freely in the border.—H. C.

—— The ordinary varieties of the Columbine are not fastidious with respect to soil. In a general way they reproduce themselves like weeds, needing but little or no care on the part of the grower. This family of plants, however, prefers a rather light, well-drained soil, some of the more tender species being apt to die off in wet winters in cold retentive soils. If your soil is naturally heavy add to it some leaf-mould or river sand, or light mould of any description. Sow in May and success will follow.—B.

2787.—**Pansies Rotting off.**—Woodlice are evidently at your Pansies, and there is no remedy but trying to trap them in flower-pots with some Moss in them, and in the morning scalding them in hot water.—A.

2720.—**Thistles in Meadows.**—Much patient labour will be required to get rid of the Thistles. Keep a man going over them with a scythe. If not permitted to make growth the roots will in time die from exhaustion.—E. H.

2757.—**Cactus not Flowering.**—Your Cactus not flowering is probably from your not using lime in the soil. I use half lime and sandy loam with good drainage of cinders, and unless the plants flag from October till March they get no water, and I have splendid flowers in June, but mine are red.—E. G. T.

2675.—**Climber for Scotland.**—Might I be allowed to suggest Tropæolum speciosum, as seen as a climber on Drummond Castle and all the houses and cottages for miles round?—J. M.

2783.—**Gooseberry Caterpillars.**—Most of the Gooseberry trees in this neighbourhood have been completely cleared of leaves by the caterpillar of the Saw Fly (Nematus Ribesi). The caterpillar of the V-moth (Halia wavaria) is also very destructive to the Gooseberry. I presume the trees of "Ruby" must have been attacked by the former.—W. J.

2751.—**Geraniums Turning Yellow.**—The roots from some cause or other have suffered injury. Allow it to get quite dry, then shake away all the old soil, cutting off the decayed points of the roots and repot in the same sized pot in a nice free soil. Place in a light position and water only when dry. In watering every second day you committed an error; plants must only be watered when the soil is dry, giving enough to thoroughly saturate it.—C.

2799.—**Sowing Everlastings.**—Helichrysums may be sown in the autumn to bloom early in the summer, but they must be kept in a frost-proof frame or greenhouse. Keep them in the open air until about the second week in October, and then place them under glass.—J. C. B.

2721.—**Cactus Turning Brown.**—This often occurs in the case of old specimens, and is generally a sign that the drainage has gone wrong. Turn the plant gently out of the pot, give fresh drainage if needful, and dust the old ball of earth with white sand, replacing in the same sized pot.—C. B.

2629.—**Vallota purpurea Turning Yellow.**—One cause of the leaves turning yellow is having the bulbs covered too deeply; half covered is quite enough; and in winter water seldom. Just when the leaves feel a little soft give a thorough soaking, but do not leave water in the saucer.—E. G. T.

2700.—**Irish Ivy.**—I read in Gardening Illustrated of the 7th that a gentleman signing himself "R. A. M." wishes for plants of Irish Ivy. I should be very happy to send him a bundle of the finest by rail if I knew name and address, and if he thought it worth while. The month of October or November would be the best time.—J. A., *Co. Carlow.*

2738.—**Evergreens for Covering Rustic Work.**—There can be nothing better than Ivies for the purpose, such as algeriensis, the large-clouded white, the small-leaved variegated variety, and the common Irish. There are also Cotoneaster microphylla and the evergreen Roses, which are of quick growth, very hardy, free flowering, and vigorous.—J. C.

2792.—**Honeysuckle Dying.**—It is impossible to give a reason for the plant dying off in the manner described. We can only imagine that it has sustained some injury at the root. The situation is favourable, and the soil is suitable. In early spring cut it back to the healthy part; it will probably grow away freely; if it does not, root it up and plant another.—B.

2725.—**Orange Trees and Jessamines not Blooming.**—As the plants in question are making good healthy growth, there can be only one reason for their not flowering. It is evident that the wood does mature. At this period of the year place them where they get plenty of light and enjoy a free circulation of air. The Orange tree should get no shade from this time.—C.

2795.—**Aspect for Rose and Peach House.**—You could not place a house for Roses or Peaches in a better aspect than east or south-east.—J. F.

2781.—**Leeks not Growing.**—It is not easy to see without more details where the management has been wrong. Have they been planted long enough to become established? Perhaps the soil has been pressed too firmly round the stems. Loosen the soil up deeply between the rows, and keep the surface freely stirred. I have no doubt with such treatment an improvement will be soon visible.—E. H.

2801.—**Grass Going Brown.**—We suggest that the brown appearance and bare places are caused by cutting the Grass too short, and especially in hot, dry weather. The best treatment will be to sow seed on the bare places, give a slight top-dressing of manure over all, and water in the evening in dry weather, keeping all traffic from it until it is green again. Set the knives of the mowing machine as high as they will go.—James Carter & Co.

2785.—**Lily of the Nile not Flowering.**—It is probable that your Calla does not throw up flowers because the bulb has not attained to sufficient size. The getting of flowers is all a question of cultivation the preceding year. The plant now would be better in the open air, and even better still if it had been planted out in the open ground in the spring, and lifted again in the autumn. As it is, the plant should be incited into growth with a little weak manure water, and be kept standing in a saucer in which there is always a little moisture.—D.

2787.—**Pansies Rotting off.**—It is a common complaint of Pansies and Violas thus to suddenly collapse and die off. There is no known remedy for it, nor can the cause be ascertained, but it is more common in hot weather than at any other time. It is a kind of shanking, and is a cause of great annoyance. We have found autumn-planted Pansies to be much less subject to it than spring planted ones are. It may be alleviated if the soil be kept stirred, and a thick top-dressing given of either old pot soil or Cocoa nut fibre refuse.—D.

2726.—**Bedding Violas.**—The best blue Viola for perpetual blooming, though the flowers are rather small, is Bluebell; but the best really blue hybrid Viola or bedding Pansy is Blue Beard—the habit dwarf and the flowers a deep colbat-blue. The best summer yellow Viola is Sovereign, dwarf and very free; but the best spring yellow Viola is Yellow Boy, because so very early. The best white Violas are Vestal, a true Viola of good quality and substance, very free and effective; and Mrs. Pease, having larger flowers, free and telling.—A.

2728.—**Violas for Continuous Blooming.**—To secure a constant supply of bloom from Violas it is best to have a quantity of plants put out in the autumn to flower in the spring, and again a fresh lot planted out in the spring to flower through the summer. To get a good stock of young plants for winter planting, all the bloom should be cut away now to enable the new growth to spring up from the roots; but it is the autumn-planted Violas that should be treated thus, and not those planted in the spring, to furnish a summer display.—D.

2662.—I have never seen any explanation or preventive of Calceolarias behaving as described but one, and that is contained in the two words "plant firm." Press the earth well to the roots in planting, and see that it does not become loose afterwards.—J. D.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them again.

2847.—**Standard Currants**—*E. B.*—We do not know of any nurserymen who keep standards, but it is not at all a difficult or a long task to grow good, strong plants into that form.

2848.—**Distribution of Plants at London Parks.**—*Phlox.*—Public announcements are usually made in regard to this matter.

2849.—**Window Plants Failing.**—*Ignoramus.*—Plants bought from the market seldom last long in windows. The only way to succeed is to begin with young plants and grow them in the window.

2850.—**Watering Musk.**—*Ignoramus.*—This needs plenty of water, but not too much overhead, or too much left in the saucer.

2851.—**Best Time to Sow Flower Seed.**—What is the proper time to sow Lupinus seed, Jacob's Ladder, Sweet Williams, and Sweet Peas?—A. H. C. W. [Autumn or spring.]

2852.—**Phlox Drummondi.**—*Phlox.*—This is not a hardy annual, and should be sown in February in a frame and planted out in May, or sown in March in the open air.

2853.—**Carrot Basket.**—*Butterfly.*—Cut a piece off the top of the Carrot, scoop it out and fill it with water,

letting the crown of course be downwards. Suspend it with thread or fine wire. When it grows train the green tops up the wires.

2854.—**Ivy-leaved Geranium for Bedding.**—Would the Ivy-leaved Geranium named Kœnig Albert answer as a bedding-out plant? The flower is lilac and double. It succeeds well in our cool greenhouse.—M. W. [Yes, if pegged down.]

2855.—**Old Myrtles.**—I have several fine Myrtles in pots, two of the same being more than twenty years old. Previous to last winter they were in a flourishing condition; since that time, however, they appear to be declining. Can any one recommend any particular treatment to be applied to them?—L. B. [Place them out-of-doors for a month or so, putting them in an open, but not too sunny a position. In spring they may be pruned back, and if placed in a warm house or frame and kept syringed, will make bushy plants again.]

2856.—**Climbers in the Open Air.**—Will Bignonia radicans, Clematis lanuginosa, and Passiflora cœrulea grow in the open air on a 5-ft. wall facing S.W.? The situation is on a hill in the suburbs of Bristol; the soil is of a clayey nature, but has been dug several times; and what is the right time to plant?—C. H. B. [All will grow, no doubt, fairly well if you add plenty of well-rotted manure to the soil, and a lot of road sand or Grass cuttings from the edges of roads or walks; also give good drainage. Plant now or in spring. Cover the roots with ashes in winter.]

2857.—**Currants for Show.**—*Ignoramus.*—Black—Black Naples, Lee's Prolific, Goodall's Seedling. Red—Raby Castle, Red Versaillaise, Red Cherry. White—White Dutch, White Cut-leaved, Victoria.

2858.—**Hardy Plants.**—*William Hirst.*—All the plants you name are perfectly hardy in well-drained soil. If you wish to move any of them the present is a good time for the operation. A coating of good rotten stable manure would do them no harm.

2859.—**Cropping Vines the First Year.**—*Roseville.*—If the canes are very strong when planted they might be allowed to carry one bunch of Grapes each next year, but if weak it would be better to sacrifice the fruit for at least one season, and crop only lightly the next.

2860.—**Roses for Walls.**—*J. G. C.*—Gloire de Dijon is one of the best light Roses, and General Jacqueminot is a capital red kind.

2861.—**Propagating Araucarias.**—How are Araucarias propagated?—A RUMMUN. [From seed imported from the native habitat (Southern Chili) of the Araucaria.]

2862.—**Fuchsia fulgens for Pillars.**—Is this Fuchsia capable of being trained against a wall to any height as a pillar Fuchsia?—WARWICK. [Yes; it is one of the best for the purpose.]

2863.—**Fruit Eaten by Wasps.**—My Plums in North Wales are all being eaten before they get ripe by thousands of wasps. What must I do to destroy them—SUBSCRIBER. [Take their nests when possible and use Scott's Wasp Destroyer, which can be obtained at any good seed shop. Of course we presume the trees are too large to be covered with tiffany or muslin.]

2864.—**Mildew on Roses.**—*Scotus.*—This is very prevalent at this season of the year. Well syringe the trees with water in which has been dissolved some flour of sulphur, or dust the leaves with sulphur from a pepper box. Also give plenty of water at the roots, and put a coat of rotten manure on the surface of the soil, to be forked in next spring.

2865.—**Violets for Windows.**—*W. H.*—If you lift some roots in September with a good ball of earth adhering to them, and drop them into well-drained pots just large enough to hold them conveniently, and place them in a shady situation for a week or so, then expose them fully to the sun and air, and house them when cold weather sets in, you will doubtless get them to flower early in spring.

2866.—**Soil for Vines.**—I am informed that red clay, ground, and lime mixed are good for Vines; is this correct?—P. N., *Jersey.* [Yes; when plenty of good turfy loam is added and a few bushels of inch bones.]

2867.—**Slow Combustion Stoves.**—There are now so many stoves for heating greenhouses (many of which are excellent in their way), that we cannot undertake to recommend any particular one. Consult our advertisement columns from time to time. There were some very good stoves advertised in Vol. I.

2868.—**Geraniums in Windows Turning Yellow.**—*Amateur.*—Place them outside and wash the leaves occasionally, and give them a little clear soot water once or twice a week. It can easily be made by putting a handful of soot into a bit of canvas, and sinking it in a can of water for a few hours.

2869.—**Sowing Geranium Seed.**—Should Geranium seed be shaded after being sown in August?—E. W. B. [Yes; till it germinates.]

2870.—**Pruning Black Currant Trees.**—*J. E., Dunstable.*—Do not prune now. In winter cut out a few of the oldest and barest branches. The Black Currant bears its fruit on the young wood.

2871.—**Green Caterpillars on Window Plants.**—*Amateur.*—Caterpillars are very prevalent this year. We know of no effectual remedy but that of picking them off morning and evening and killing them.

2872.—**Tuberous Begonias from Leaves.**—*Heath End.*—This would be a troublesome process if it succeeded, and as plants can be raised from seed in a few weeks it is not worth the trouble, we should say. If you try it, take off matured leaves, stalk attached, and, if possible, a bud at the base of the stalk. Insert in sandy soil in a hotbed, and cover with a bell-glass.

2873.—**Oleander Covered with White Scale.**—*N. C. L.*—Well sponge the leaves with strong Tobacco water, after which well wash them with soap and warm water, using a tooth or nail brush for the purpose. In a week's time repeat the operation, and do all you can to encourage the plant to make free growth.

2874.—**Seedling Solanums.**—*M. S. B.*—Pot them in any good sandy well-drained soil, and place them in a frame close to the glass, keeping them rather close and moist, and stopping the shoots occasionally to make them grow bushily.

2875.—**Rhynchospermum and Hoya in Cool House.**—Will Hoya carnosa and Rhynchospermum jasminoides grow on wall of cool greenhouse where it is difficult in winter to exclude frost?—ERIN. The Rhynchospermum would probably succeed, but the Hoya wants more heat.]

2876.—**Storing and Cooking Salsify and Scorzonera.**—*Erin.*—In October or November when the tops have withered, and before severe frost sets in, dig up the roots, taking care not to break them; wring off the tops with the hand and store the roots in a cool shed or cellar, packing them in layers one on the other, with plenty of dry sifted soil or sand, and use as wanted. As regards cooking, scrape off the outside skin, and put them in cold water. Cut them in pieces about 3 in. or 4 in. long, and put them in boiling water. Boil them from forty to sixty minutes, or till tender; then drain, and serve them with white sauce, rich brown gravy, or melted butter; or, when boiled, dip them in stiff batter, or in bran tea boiled to a strong jelly, and fry them; then serve with brown sauce, &c. When boiled, mashed, formed into cakes, and fried in butter, they are said to have the flavour of oyster patties, or of smelts.

Cuttings of Begonias.—*Amy.*—Pot them on; it is not too late to strike more cuttings.

Ferns.—*T. M. M.*—Apply to some Fern dealer. See our advertisement columns.

Book on Roses in Pots.—*W. W. C.*—Paul's "Roses in Pots," price 2s. 4d., post free from our office.

Primulas Showing Flower.—*W. B. W.*—Pinch out the flower-buds as soon as they can be seen.

Disease in Melons.—*T. G. B.*—It appears to be a fungus, but we can suggest no cause for its appearance. Rub a little quicklime into the affected parts.

Heating Greenhouses.—*P. C. Stanmore.*—If you get a medium-sized tubular boiler it will heat three houses of the size you name with ease, and will need but little attention. Consult some horticultural builder.

Currants for Dessert.—*J. G. C.*—The best White dessert Currant is the White Dutch, and the best Red is the Red Versaillaise.

Large White Convolvulus.—*A. E. T.*—We suppose it is a variety of the common Cornbind (Convolvulus arvensis).

Planting Strawberries.—*G. B.*—We have lately given several exhaustive articles on this subject.

Number of Pots to a Cast.—*Inquirer.*—There should be seventy two thumb pots to the cast.

Book on Amateur Gardening.—*R. B.*—You cannot have a better book than the first volume of GARDENING ILLUSTRATED. It contains more information for the amateur than any book you can get.

Book on Small Kitchen Gardens.—*E. W. B.*—Hobday's "Cottage Gardening," price 1s. 9d., post free from our office.

Book on Gardening.—Which is the best and cheapest book on gardening? [GARDENING ILLUSTRATED.]

Books on Roses.—*R. G. H.*—"The Rose Garden," by Wm. Paul, 10s. 6d., coloured 21s; Hole's "Book about Roses," 7s. 6d.; Rivers' "Rose Amateur's Guide," 4s. 6d. All post free from our office, 6d. extra.

Book on Mushroom Culture in Orchard Houses.—*Kincora.*—The best book on the subject is "Mushroom Culture in England and France," by Wm. Robinson, price 1s. 9d., post free from our office.

W. R.—We do not understand your query.

Names of Plants.—*Pat.*—Omphalodes linifolia.——*A. P. H.*—Dictamnus Fraxinella alba, Melittis Melinophyllum.——*M. S. B.*—Macleaya cordata, commonly known as Bocconia cordata.——*Alpha.*—It looks like a Sedum of some kind. Send better specimens.——*Scotus.*—Echeveria of some kind. Lift in October and place in a dry cool house or pit. Very little water is needed during winter; damp is worse than frost.——*Mrs. H.*—1, Bartonia aurea; 2, Silene pendula alba; 3, Viscaria agrostemma probably.——*Const. Sub.*—Desfontainea spinosa.——*Sposa felice.*—Crassula (Kalosanthes) coccinea.——*Richmond.*—Begonia Rex. The leaf is very thin; give the plant more air and light.——*W. R. T.*—1, Achillea ptarmica; 2, Origanum vulgare.——*M. C. R.*—Spiræa callosa.——*A. Millard.*—Annual Spiderwort (Commelina pilosa).——*Newt.*—Siebold's Stonecrop (Sedum Sieboldi).——*R. P.*—Apparently Catalpa bignonioides. 1, Verbascum nigrum; 2, Potentilla atro-sanguinea; 3, Centranthus ruber.——*Rev. St. A.*—Heuchera ribifolia. Fern not recognisable.——*E. J. R. R.*—1, Adiantum cuneatum; 2, A. formosum; 3, Pteris serrulata; 4, P. cretica albo-lineata.——*G. A., Kent.*—Eccremocarpus scaber.——*C. H.*—Eupatorium cannabinum.——*P. S.*—Silene viscosa.——*H. C.*—1, Campanula fragilis; 2, C. muralis; 3, Veronica austriaca.——*Jellalabad.*—Euphorbia Lathyrus.——*F. A. S.*—Sedum album, Campanula rotundifolia.——*A. B. C.*—Adiantum Capillus-veneris.——*C. J. H. S.* Lysimachia punctata ——*J. R.*—Devil in a Bush (Nigella damascena).——*Anon.*—1, probably a Pyrus, but cannot say without flowers or fruit; 2, White Poplar (Populus alba); 4, Tulip Tree (Liriodendron tulipifera).

QUERIES.

2877.—**Making a Garden.**—I have a piece of land, which I intend to convert into a garden; it is of a clayey nature. So far I have merely dug it up roughly. Would any kind reader advise me how to proceed?—A. O. A.

2878.—**Cocoa-nut for Ornament.**—Can any one inform me if the Cocoa-nut can be grown in an ordinary greenhouse? If so, what treatment does it require?—C. W.

2879.—**Striking Rose Cuttings.**—What is the treatment of Rose cuttings from the moment of cutting till the cutting is rooted?—F. J. L.

2880.—**Propagating Azaleas.**—How and when are hardy Ghent Azaleas propagated?—A. RUMMUN.

2881.—**Saving Stock Seed.**—Can any reader inform me of the proper way to collect and preserve the seeds from German Stocks? Mine this year have made remarkable bloom, and I should like to preserve seeds from the best of them.—AMATEUR.

2882.—**Soil and Treatment of Orchids.**—Will anyone give treatment and full description of soil, &c., necessary for the following Orchids: Cypripedium insigne, Odontoglossum Fairfaxianum, Dendrobium nobile, Bletia hyacintha?—ERIN.

2883.—**Trees for Front Garden.**—Will any one inform me what trees are most suitable for the forecourt of a house 5 ft. deep, facing west? I want some which will not spread their roots out far, and grow green and bushy. The centre under the window I wish for flowers or evergreens.—W. J.

2884.—**Vines in Pots.**—I have six seedling Vines, two years old, in 6-in. pots, full of roots, and 18 in. high. Will any one help me with information how I should proceed to grow and fruit them in pots? I have a greenhouse with a flue.—ENQUIRER.

2885.—**Heliotropes and Verbenas.**—Will some reader kindly tell a subscriber of GARDENING ILLUSTRATED the best method of propagating Verbenas and Heliotropes, and the right time? also the soil best suited for them?—P. E. U.

2886.—**Heating Greenhouse.**—I have a greenhouse 18 ft. by 9 ft. Can any one tell me if a paraffin lamp would be sufficient to heat it in winter?—FINCHLEY.

2887.—**Water Lilies in Bouquets.**—I should be glad to know the secret of keeping Water Lilies when cut from closing, so many used for table and other decorations which appear wide open at all times.—M.A.C.

2888.—**Night-scented Petunia.**—I have had a few seeds sent me marked Night scented Petunia. Not having seen or heard of such before, can any reader give me any information respecting it? also the best mode of growing it?—PETUNIA.

2889.—**Early Tomatoes in Greenhouse.**—Can any reader give instructions in the early culture of Tomatoes in a greenhouse (heated)? Is it better to sow the seed now and keep on growing through the winter? or from cuttings, and how to take them, and the best time?—KNOWLEDGE.

2890.—**Plants for Shady Situation.**—What plants will grow in a bed shaded by Beech trees, and with only morning sun?—E. W. B.

2891.—**Pansies in Pots.**—Will some one inform me how to grow Pansies in pots?—R. B.

2892.—**Maréchal Niel not Blooming.**—I have a Maréchal Niel Rose; aspect south and south-east, has the sun from early rise to about noon, has made a large quantity of wood, been planted five years, and yet it has never had a Rose on it. What can I do with it to make it flower?—C. W.

2893.—**Saving Cabbage Seed.**—I have a Cabbage run to seed, but do not know whether the seed will be any good. Will some one tell me the proper way to act with it?—C. F.

2894.—**Plants for Baskets in Winter.**—I want to fill some small circular tins, intended to be fitted into baskets, with any plants that would look nice in November and December; which would be best? What kind of Moss would look fresh and green then? Is there any plant of a neat habit that would flower at that time? and any that could be trained over the handle?—H. H. H.

2895.—**Vallota purpurea in Windows.**—My best thanks to "J. C. B." for his reply to my query, but will he or some other correspondent kindly inform me if I may repot my Vallotas at once, as there are two good-sized bulbs in one small pot, and I find the roots are growing through? also, if they would be better separately? and what is the proper course to pursue with the tiny bulbs or offsets produced on the sides of the larger ones? I have been taking them off and planting round the margin of the pot, and have now about eight of them, and should be glad to know if my treatment of them is right?—A. A. STAFFORD.

2896.—**Best Time to Buy Hay and Grain.**—Will some readers tell me from experience which is the cheapest time for laying in a stock of Oats, Barley, Maize, and Hay? I have a large granary.—CONSTANT READER.

2897.—**Saxifrages Dying off.**—I have lately lost several large plants of Saxifrage, among others S. Wallacei and S. atro-purpureus, each of them forming cushions 15 in. or 18 in. in diameter. They had grown rapidly and flowered freely all the summer. A few weeks since some of the tufts began to wither, and came away with a slight pull. The mischief spread rapidly until the whole plant was gone. They were growing on a raised bed formed of good soil over 1 ft. or more of broken stones and bricks, with the surface thickly covered with large stones partially buried, between which they were planted. Can any one suggest what is the probable cause of their suddenly going in this way, and how to preserve the remainder from a like fate? I lifted one of them and examined the roots, but could not discover anything wrong.—W. D.

2898.—**Storing Potatoes.**—Will some reader kindly enlighten me as to the best mode of saving Potatoes, of which I have a stock sufficient to last me a year? My appliances are (1st) a large attic loft at the top of the house, not frost-proof, (2nd) a cupboard under the stairs, (3rd) a shed in the garden. Ought they to be kept in bags or loose?—CHAMPION.

2899.—**Flowers for Window.**—I have a large bow window which I am about to utilise for flowers; what would be the best flowers to select for blooming through the next six months? I have a cold frame in which to raise seed, but fear it is too late this season.—E. M. H.

2900.—**Law Respecting Greenhouses.**—As the district surveyors have been very busy interfering with the erection of the above in my neighbourhood, I should

be glad if some one would state what really is the law on the subject. I had intended erecting a portable greenhouse, but if they can interfere, of course I shall not do so.—E. M. H.

2901.—**Mezereon Daphne.**—Can any one tell me how to raise this? If from the berries, when should they be gathered and when sown? If from cuttings, when should they be taken? what kind of soil and situation?—TANNEBERG.

2902.—**Eucalyptus in Winter.**—I brought six plants of Eucalyptus globulus about 1 ft. high from the south of France eighteen months ago. Four I planted out in March last year, and they speedily succumbed to a hard frost we had that month. The other two I planted out in June and repotted them in October. They were again planted out last June, and one of them is now about 12 ft. high; the other not more than 6 ft. Can any one inform me if there is any chance of the larger one surviving the coming winter if left out? I am afraid it will have made too large roots for potting, and it would take up more space than I can afford in my greenhouse. Would matting be sufficient protection against an average winter?—W. D.

2903.—**Cropping a Garden.**—How can I best utilise part of a garden which has had a crop of Broad Beans and Peas? The soil is clay, and those mentioned above are the first crops that have been grown; it is near London and is in an open situation. I wish to grow some other vegetables, and wish to know how the ground is to be prepared, and what to grow.—M.

2904.—**Renovating a Garden.**—I have a garden of the following description lately come into my possession: It is surrounded by an 8-ft. wall; one side is shaded to an immense height by the trees of a park; the other side has very high Apple and Pear trees against the wall. The garden itself is studded by large unpruned fruit trees of all descriptions, so that on all sides it is very much shaded. The Gooseberry and Currant bushes have not been pruned for years, so that they are like wild Blackberry bushes. The soil is heavy clay, deep, but evidently pretty well drained. It is an old garden and thick with weeds, wild Convolvulus, Crowfoot, &c. It has not been cultivated for about five years. I want some hints as to how to begin to work at it, how to destroy the weeds, prune the fruit, what manure to use, and the best kind of crops for a shady place?—J. W. R.

2905.—**Geraniums and Fuchsias for Winter.** What Geranium or Fuchsia would flower before or about Christmas if I procured them now and looked well after them in window (south)?—A.

2906.—**Climbers for Trellises.**—Suggestions wanted for hardy creepers for the above. Roses do not seem to prosper; the trellis stands out along a garden walk.—J. L., *Ireland*.

2907.—**Lapageria rosea not Flowering.**—I have a healthy plant of the above; it is four or five years old, is planted in the border in a well-lighted and ventilated conservatory, has sent strong shoots to the roof, but never had a single bloom. Can any one suggest a remedy?—J. L.

2908.—**Slugs in Larders.**—Can any of your readers tell me how to rid a house of slugs? They crawl over the food in the larder, and we cannot trace them to their holes. I have had all the apertures round the floor stopped up and the walls washed with lime, but they appear to increase, and we cannot catch them, as they disappear before daylight.—A SANDY CAT.

2909.—**Maiden-hair Ferns.**—Will some one tell me if in a small Fernery the Maiden-hair refuses to flourish side by side with a common hardy Fern? I find that my Maiden-hair plants do so much better when placed in a pocket alone. Is this usually the case? or is there any other likely reason why some of them have withered during the last month?—J. B.

2910.—**Delphinium nudicaule.**—I should feel greatly obliged for some information on the cultivation and soil for Delphinium nudicaule. I have raised some from seed, and have just lifted one and find it is a minute tap-root or tuber, somewhat of the shape of the little French forcing Carrots. I cannot find any description of the plant or instructions, beyond planting them two or three together, as giving the best effect. I know they are hardy, but do not know whether they would stand the winter in a small state.—J. D.

2911.—**Mushrooms in Asparagus Beds.**—I have heard of Mushrooms growing spontaneously year after year in an Asparagus bed. Would it answer to plant the spawn in such beds? and if so, what would be the proper season?—M. W.

2912.—**Insects in Beans and Cabbages.**—What occasions "clubbing" in Cabbages, French Beans, &c.? and the cause of so many white maggots forming at the roots of the latter? Is there any remedy against these evils?—J. B. C.

2913.—**Wintering Cuttings and Ferns.**—Can any reader tell "A Novice" how to make a 2-light Cucumber frame available for preserving cuttings through the winter? The frame stands on a gravel path; it is too near the house to have a hotbed in it. Would plunging the pots in Cocoa-nut fibre answer? or is some kind of heat indispensable? My aim is simply to preserve the plants from frost. Also, would Ferns in pots live through the winter if plunged in the borders? and how deep must they be?—ALICE GRIMES.

2914.—**Mushrooms Infested with Maggots.**—I have a Mushroom bed made in an unused coach-house. About a month ago they first made their appearance, and I gathered from the bed nearly 3 lb. of very fine Mushrooms. Since then they have not come up so plentifully, and after they have been up a day or two they have fallen to pieces on the bed, and have appeared quite decayed and wet. A few days ago I gathered 2 lb. more, and when breaking them in two I found the top or white part decayed and full of maggots like those we find in cheese. The smell, too, is so unpleasant, that I must throw them all away. They are very large, thick Mushrooms. Can any correspondent tell me the cause of their decay? or what I should do to prevent further waste?—CREEPING JENNY.

2915.—**Incarvillea sinensis and Loasa Herberti.**—Seeing these recommended as greenhouse creepers, will some one give me instructions for raising them and for their general cultivation? also inform me as to their value for that purpose?—PHLOX

2916.—**Keeping Flowers in a Cut State.**—Can any one inform me how to keep cut flowers, such as Dahlias, Gladiolus, and Hollyhocks, fresh? Should the stems be placed in water? and how often should the water be changed? also the best situation for them? Would they do in a dark, moist cupboard, with a little air? or in a light, shady situation with plenty of air?—SEVEN SISTERS.

2917.—**Striking Magnolias.**—Has any one succeeded in striking slips of these in the open ground? If so, under what conditions?—A. COVENTRY.

2918.—**Plants for Small Basin.**—I have a small fountain, and should very much like to grow a few plants in the basin, but they must be in pots. I have two pots of Creeping Jenny; it grows and looks nice and green, but does not flower, and is growing rather weak. I think, perhaps, it is rather too close for it. I have asked several gardeners for Cape Pondweed, but cannot get it What plants would be most suitable? They must be of dwarf habit. The house is heated in winter.—W. H.

2919.—**Rhubarb for Wine Making.**—I have about an acre of land to spare. I am thinking of growing Rhubarb for wine making; what sort would be best for the purpose? and when is the best time for planting?—J. S. L.

2920.—**Verbenas from Seed.**—Which is the best way to raise Verbenas from seed? also what soil, situation, and treatment are required?—AMATEUR.

2921.—**Fuchsias and Zonal Geraniums.**—Will some one kindly name a dozen of each of the above, half the number doubles and the other singles?—STOKE-ON-TRENT.

2922.—**Mimulus cupreus, &c.**—Would Mimulus cupreus (scarlet) be a suitable plant to bed along with Marshall's Musk and Lobelia? if so, would it succeed raised from seed in the spring? or if any more suitable plant (scarlet) please name it and oblige.—G. G.

2923.—**Gardening on Clayey Soil.**—My front garden lies in a sheltered situation facing about south-west, and the soil is rather of a clayey nature. I am told that I should succeed with Roses if I could but obtain the proper varieties. I shall be greatly obliged by hints or instructions. I should like to have a climber up the side of the house, and the John Hopper variety has been mentioned to me as a good sort, but I have no knowledge of its habits or growth. My back garden was (until I became tenant of the premises, seven weeks ago) a waste covered with rough Grass. I have had the sods (beneath which I discovered that there is a few inches below the surface a lot of clay) turned over in the hope that they will rot by next spring. I have planted a few Cauliflowers and Winter Cabbage, Spinach, Peas, Turnips, and Celery (using good manure); they seem to be doing reasonably well, except the Cabbages, which are now being attacked by an insect looking like the green fly, which gets inside the tender leaves and makes them curl and wither. I hope next season to do better with my garden, and have thought that I had better have (a few weeks further on) several loads of soil laid on to make a respectable bed. I have already taken out a small load of clay and thrown it away as worthless. I shall be glad of any advice on the subject.—CROFT.

THE HOUSEHOLD.

How to Pickle Eggs—In answer to W. Brown's inquiry in GARDENING of August 21 (No. 76), I send the following recipe: Boil five or six dozen eggs in a capacious saucepan until they become quite hard; then after removing the shells lay them carefully in large-mouthed jars, and pour over them scalding vinegar well seasoned with whole pepper, allspice, a few races of ginger, and a few cloves of garlic. When cold bung them down closely, and in a month they will be fit for use.—M. E. I.

—— Take 1 quart of strong brown vinegar and simmer in a saucepan over a slow fire for half-an-hour; put in 1 oz. ginger race, 1 oz. whole mustard seed, 1 oz. whole black pepper, 6 cloves of garlic. Have ready forty-eight hard-boiled eggs. As this is the important point please observe that the eggs are put in cold water set on a very brisk fire and kept on for at least fifteen minutes after the water boils; then drop them immediately into the coldest spring water. This separates the shells from the whites, and renders the removal of the inner skin easy. Lay the shelled eggs in circles in large earthenware jars, pour the pickle over them as soon as it has boiled sufficiently, and when quite cold bung down. They will be fit to use in a month, but will keep good six months.—A. B. T.

Preserving Eggs.—A much more satisfactory way of preserving eggs than keeping them in lime water is to rub them when warm from the nest with grease made of white wax and good salad oil. Eggs thus preserved may be used six months after. They should not be packed in bran.—M. C.

—— Take the ashes from the grate and put them through a fine riddle, then cover the bottom of any box you have with them, say 2 in. deep; place the eggs (fresh) therein, large end downwards, as close as you like, but not to touch each other; cover them with more ashes 2 in. deep, and so on till full. If they are put in a dry place they will keep twelve months.

Preserving Vegetable Marrows.—Can any reader tell me how to preserve Vegetable Marrows to imitate preserved ginger.—A. C. T.

Preserving Green Peas.—Can any of your readers inform me of a way to preserve green Peas for winter use? I keep Scarlet Runners by simply putting them in a pan with plenty of salt; when I want to use them I soak them all night in water and cook them as fresh-picked ones.—QUISITANT.

Pot Pourri.—Will any one kindly inform me how to make pot pourri as our great grandmothers used, so that it may be sweet for years?—F. F.

BEES.

The Value of Bees.—A great bee master, the Rev. M. Sauppe, of Lückendorf, makes the following calculation, intended to prove the eminent agricultural and economical importance of the rearing of bees:—Of each of the 17,000 hives to be met with in Saxony, 10,000 bees fly out per diem—equal to 170 millions—each bee four times, equal to 680 millions, or, in 100 days, equal to 680,000 millions. Each bee before flying homeward, visits fifty flowers, therefore the whole assemblage has visited 3,400,000 millions of flowers. If out of the ten only one flower has become fertilised, 340,000 millions of fertilised flowers would be the result. Supposing the reward for the fertilisation of 5000 flowers to be one German pfennig, the united bees of Saxony have obtained per annum a sum of 68 million pfennige—680,000 marks (£34,000 sterling). Each hive represents in this way a value of £2 sterling.

Bee Keeping.—If "W. W." will visit some of the bee shows which are held in various parts of the country, and ask any bee-keeper he meets there to coach him up in hives, and he will get more knowledge in half-an-hour than he can get by reading for days. Let him enter the manipulating tent, and he will see the operation of "driving" bees from straw hives, which will teach him how to force his bees to swarm at his will, instead of having to watch and wait their wills. If he lives in the neighbourhood of London, he cannot do better than visit the shows of the British Bee-keepers' Association, held at the Horticultural Gardens, South Kensington. He will see exhibited there hundreds of hives of all kinds and makes, and all kinds of apiarian appliances, honey, bees of various races, &c., and will be much interested. Let him ask some one to show him an improved Woodbury hive, and let him see the bees from the Holy Land, and from Cyprus, and from Italy.—APIS.

HOME PETS.

Keeping a Tortoise.—I have kept a tortoise twelve years. It buries itself the first week in November, and reappears the first week in March. It will then only eat Dandelion flowers and Buttercups, but its appetite improves, and it has now devoured several large Lettuces, also Sow Thistles. Nothing more is needed, but it is necessary to watch that he does not get out of the garden, which, in the summer, he is always trying to do.—P. S. L.

—— We have had a tortoise many years in perfect health. He requires to be put in a garden where he can have a good supply of short Grass and Clover. In spring he eats Dandelion blossoms and Buttercups, also Lettuces. In summer he is so fond of fruit, such as Strawberries, Currants, or Raspberries, that he will follow us round the garden for it. He goes down about September or October, generally choosing a sheltered spot under a shrub, and remains until March or April.—A. N.

Treatment of Canaries.—Would some experienced reader of GARDENING give a full account of the treatment of canaries?—BIRD FANCIER.

Tortoise Eating Insects.—*Bath.*—We do not believe that a tortoise either eats slugs or woodlice, but lives entirely on fruit and vegetables.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, doz	..	0	3	0	0		
Arum Lilies	..	0	0	0	0		
Bouvardia	..	1	0	3	0		
Carnations, doz bun	..	4	0	9	6		
Carnations (Tree) doz		1	0	3	0		
Cornflower, doz bun	..	3	0	6	0		
Eschscholtzia	..	2	0	6	0		
Eucharis, doz	..	5	0	6	0		
Ferns (various) doz bun		4	0	9	0		
Fuchsia	..	4	0	6	0		
Gardenia, doz	..	3	0	9	0		
Heliotrope, doz bun	..	0	0	6	0		
Mignonette, doz bun	..	2	0	6	0		
Myrtle, doz bun	..	0	0	6	0		
Pelargonium(znl)dz bun		3	0	6	0		
,, (large flower)	..	6	0	12	0		
,, (double)	..	6	0	12	0		
,, (Rose-scented leaf)		3	0	6	0		
Phlox, doz bun	..	6	0	9	0		
Pinks	..	..	4	0	9	0	
Primula (dbl) dz sprays		0	9	0	0		
Roses, doz bun	..	4	0	9	0		
Stephanotis, doz trusses		3	0	6	0		
Sweet Peas, doz bun	..	3	0	6	0		
Sweet Sultan	..	..	4	0	6	0	
Tropæolums	..	..	1	0	3	0	
Tuberoses, doz	..	..	1	0	3	0	

Pot Plants.

Arbor-vitæ (golden), dz		9	0	18	0		
,, (common)		6	0	12	0		
Aralia Sieboldi, doz	..	12	0	30	0		
Begonias, doz	..	6	0	12	0		
,, (fine-foliaged)	..	6	0	12	0		
Berberis	..	..	4	0	9	0	
Bouvardias	..	..	12	0	18	0	
Clematis	..	..	9	0	19	0	
Crotons	..	..	12	0	42	0	
Dracæna (green)	..	12	0	30	0		
,, (variegated)	..	18	0	60	0		
Echeverias	..	..	4	0	6	0	
Euonymus	..	..	6	0	12	0	
Euonymus (variegated)		8	0	18	0		
Ferns	..	..	..	6	0	18	0
Ferns (small) per boz		3	0	5	0		
Ficus elastica, doz	..	18	0	60	0		
Fuchsias	..	..	..	6	0	12	0
Gardenias	..	..	18	0	36	0	
Mignonette	..	..	4	0	6	0	
Nasturtiums	..	..	3	3	6	0	
Palms (large) pair	..	15	0	42	0		
Palms (small) doz	..	18	0	60	0		
Pelargoniums (scarlet)		2	6	9	0		
,, (double)		6	0	13	0		
Selaginella	..	..	3	0	4	0	

Fruit.

Apples (culinary) bush		4	0	5	0		
Grapes (English) lb	..	2	0	5	0		
Lemons, box	..	..	30	0	35	0	
Oranges, 100	..	..	8	0	16	0	
Pears (dessert kinds), dz		2	0	3	0		
Pine-apples (St Michs) ea		5	0	15	0		
,, (English) lb		2	0	4	0		

Vegetables.

Beans (French), lb	..	0	2	0	6		
,, (Runner)	..	½	0	0	2		
Cabbages, tally	..	1	0	2	4		
Carrots, doz bun	..	4	0	5	0		
Cauliflowers	..	..	0	4	0	6	
Celery, bundle	..	..	1	0	2	0	
Corn Salad, half sieve		0	0	2	0		
Cress (plain), doz pun		0	0	2	0		
,, (Watercress) dz bun		0	9	1	0		
Cucumbers, doz	..	2	0	5	0		
Endive	..	..	2	0	3	0	
Garlic, lb	..	..	0	0	0	6	
Horseradish, bun	..	3	0	5	0		
Lettuce, score	..	..	0	4	1	0	0
Leeks, doz bun	..	1	6	3	0		
Mint	..	..	4	0	0	0	
Mushrooms, pottle	..	1	3	1	9		
Potatoes (red kinds), ton				100s. to 200s.			
,, (Kidney), ton				120s. to 180s.			
Parsley, doz bun	..	2	0	4	0		
Radish, doz bun	..	1	6	3	0		
Spinach, bus	..	..	0	0	2	0	
Turnips, doz bun	..	4	0	5	0		

GARDENING
ILLUSTRATED.

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JAPAN ANEMONES.

THE White Anemone (A. japonica alba) which we now illustrate is supposed to have originated from a sport of the better-known rose-flowered A. japonica. It is, however, probable that the white variety is the original and the rose-coloured one the sport, for never have we seen the latter grow with anything like the vigour of the white kind, and it appears, moreover, to be of a weaker constitution altogether. Both are, however, worth culture, but the white kind should always be cultivated both in large and small gardens. It flourishes in any ordinary garden soil, either in the shade or in the sun; even under trees it flowers well, although in such a position the plant becomes more lanky and less attractive in habit.

THE WHITE JAPAN ANEMONE, 3 FT. HIGH.

When well grown in an open situation and in warm sandy soil, it is a really charming plant, its flowers being large, handsome in form, and very effective. Not only is this Anemone valuable in beds and borders, but it is equally desirable for pot culture, and when placed in a cool greenhouse it is safe from winds, and lasts in bloom till a very late period. In order to grow either kind well, they require a deep rich soil and plenty of moisture while renewing their foliage, as otherwise they are subject to the attacks of red spider. The great point is starting them fairly at first, and then leaving them alone ever after, as old-established clumps are always the strongest and best. Most kinds of herbaceous plants are greatly improved by being taken up now and then and divided; but not so these, as their nature is to form large roots low down, and it is from the young feeders on these they draw their supplies. In hot dry weather a mulching placed about them, and a soaking or two of liquid manure is of great assistance to them, as it enables them to push up their flower-spikes freely, and make fresh

White Japan Anemone—showing habit of plant.

crowns around their base. Those who wish to begin with them in pots will, find this a good time to lift any of the young side-shoots that spring up so freely from old plants. If these are dug out of the ground with care, and, after being potted, are kept close for a week or so in a cold moist frame, they will be found to have taken well hold of the soil, and in a condition to bear the air and exposure. Although perfectly hardy, when grown in pots it is always advisable to keep them plunged in a position secure from frost, as it should be borne in mind that a plant having its roots in such a small body of soil is very differently circumstanced to others in the open ground, where, deep-rooted as they there are, they cannot be injured. To obtain fine strong pot specimens requires some years of rich feeding, but so serviceable are they, that they are worth more than the care and attention which their cultivation entails.

For those who do not know this lovely flower we would describe it as being like a very large Wood Anemone, growing from 3 ft. to 4 ft. high, and bearing from a dozen to twenty flowers on each stalk. As regards purity and beauty, it is fit for a bride's bouquet. For room decoration it is also exceedingly useful, either in pots or in the shape of cut blooms. The latter last fully a week in water if cut when freshly opened. The plant is perfectly hardy, needs no skilful cultivation, and is cheap. In mild seasons this Anemone blooms from early in August till the end of October. We may add that there is a supposed robust variety of the White Anemone known by the name of A. Honorine Joubert, but it is no variety at all, it being only Anemone japonica alba well grown. We have seen fine plants of Japanese Anemones growing under the most unfavourable conditions in the smoke of London, proving it to be a good town plant. The flowers from which our illustration was prepared were gathered from strong plants in Messrs. Osborn & Son's nursery at Fulham.

This Anemone is easily increased by means of root cuttings. In November dig up a plant from the open ground, and cut up the roots into pieces 1½ in. long. Well drain some pans about 3 in. deep, and fill them with finely-sifted soil, consisting of loam, leaf-mould, and sand, to within ½ in. of the rims; press all down gently, make the surface level, lay down pieces of root all over it, and cover up to the rim; give a good watering and place them on a shelf in the propagating house. In about three weeks they will push through the soil, and in another fortnight will be ready for potting off. They ought to be kept gently moving till they can be gradually hardened off in a cold frame. Plant them out in March, take them up and pot them in September, and transfer them to the greenhouse as required, *i.e.*, if wanted for indoor decoration.

FRUIT.

Gathering Apples and Pears.—In keeping these sound for the longest period much depends on the care with which they are gathered, and also on each kind being gathered at the right moment. Every one is capable of gathering carefully, but a certain amount of practical experience is indispensable as regards the second requisite. Imagine Williams' Bon Chrétien Pear and a Winter Nelis gathered at the same time! yet such I have known to have been done. It is well known that Apples or Pears gathered before growth is complete shrivel and dry up prematurely, or, if this does not happen, they are "sticky," and never so thoroughly mature as to be usable. More Pears are made bad than are bad naturally through this one cause of premature harvesting; therefore I would recommend grumblers about "sticky" Pears to this season leave them longer on the trees. Unfortunately, no one rule is applicable to every case as to when an Apple or Pear is fit to gather, as soil, position, exposure, and shelter have much to do with the season of fitness to gather. But as a sort of guide to the inexperienced who may be in uncertainty, I would say, if the fruit be very gently moved upwards and part readily, without the slightest pull, from the tree, then it may safely be gathered. Another good test is to cut open a fruit, and if the seeds or pips be quite brown or black, then the crop is fit to gather. Another test, in the case of the earlier ripening kinds more particularly, is when birds or wasps begin to attack them; these depredators are too good judges to make mistakes. Apple gathering in some parts is looked upon as a very ordinary operation, capable of being performed by anybody and anyhow, a plan which might answer if the fruits are to be ground into cider or used forthwith, but if they are to be kept in sound condition for any length of time, too much care cannot be bestowed on gathering them, as the slightest bruise induces decay; and the same remark is applicable to Pears, with the addition that, if possible, even more care should be taken with them. The manner of storing in fruit rooms is also of importance. If space can be spared, the fruit should be put in single layers only, and certainly in no case should it be more than two layers deep. The room ought previously to have been well cleansed and dried, and for the first two or three weeks after the fruit is gathered all the air possible should be given, as when first housed a moisture is given off by the fruit, which, if not driven out by free ventilation, lays the foundation for decay. Specky, bird-pecked, or wasp-eaten fruit should not be put in the same room with that which is sound. If it cannot be used at once, better throw it away than allow the fungus which it engenders to spread to the fruit which is good.—W. H.

Prolific Fig.—This is a name very appropriately given to a Fig now being largely grown in Messrs. Osborn's nursery at Fulham. The plants are grown in 6-in. and 8-in. pots in an ordinary span-roofed greenhouse, and at the present time many of the plants bear from nine to a dozen fine fruits which will ripen in the course of the autumn. The Fig is one of the most delicious of fruits, and any one may grow it. The kind mentioned above is well worthy the attention of those who are fond of Figs, but who have but little space under glass or in the open air in which to grow them.

Selecting Pear Trees for Planting.—One seldom looks over a new plantation of Pears without finding a number of varieties that are in every way thriving and giving promise of good results, while an equal number is by no means satisfactory. As a rule, the aim seems to be to have as many varieties as possible, some of which might succeed on a wall, but in any other way are useless, and others are not suited to the locality. The season for planting being now at hand, I would recommend the selection of varieties that would succeed in the district in which the new plantation is to be made, for what can be more vexatious than spending time and labour on the culture of a given number of trees the produce of one-half of which turns out to be useless? Few fruits, in fact, are more variable than the Pear, or are more capricious under haphazard culture. The best way of converting vigorous, but unfruitful Pear trees, or such as produce fruit of inferior quality, into remunerative ones, is to head them down while the sap is dormant, and to re-graft on all the extremities as soon as it begins to flow in spring with some tried sort from the neighbourhood. The double grafting will be certain to induce fertility, and in a few years the produce will exceed what it is possible to obtain by any less radical measures.—J. G.

Raspberries on Light Soils.—The Raspberry is difficult to manage on light soils, especially where the climate is very changeable; under such circumstances the Raspberry requires a deep moist soil, a shady situation, and plenty of water during the growing season, *i.e.*, while the young fruit-bearing canes are being formed. Where the ground is gravelly or light, it may be improved by removing a portion of the natural soil and adding fresh compost, such as decomposed vegetable matter, mixed with the refuse collected from the potting bench, or other similar material. A crop of Cabbages planted between our rows of Raspberries was removed early last month; the old canes were cut away, and the young ones reduced to from three to four to each stool. The surface of the soil was then loosely forked over and a heavy mulching of horse manure, from the stable yard, was spread over it, and in addition to all this the ground has been thoroughly soaked two or three times since with liquid manure. The result is, the canes are growing apace and thickening, and by the end of the season they will be good for this locality. Too much importance cannot be attached to the position allotted to Raspberries where the soil and climate are naturally unfavourable. I have never seen such Raspberry canes as I once saw in the north of Scotland in a deep light soil in a low-lying district naturally shaded by trees from the fierce rays of the sun. Conditions such as these do not, however, exist in every garden, but they may to some extent be imitated. A cool position, surface mulching, and copious supplies of liquid manure will go far towards counteracting unfavourable con-

ditions both of soil and climate.—W. H., *Liverpool.*

Coe's Late Red Plum.—I find this to be a useful variety when very late Plums for culinary purposes are required, and when grown and ripened on a wall it is even good for dessert. If netted and kept secure from the attacks of insects it will hang very late on the trees.—R. O. O.

VEGETABLES.

GROWING MUSHROOMS.

Mushroom Houses. — It frequently happens that an outbuilding of any description that can be spared for the purpose will answer as well or better for the growth of this vegetable than houses that are built expressly for it. For amateurs to succeed in the cultivation of Mushrooms it is necessary to reflect a little upon the natural conditions of their growth. As every one connected with rural affairs is without doubt aware, Mushrooms grown in the open fields are not equally plentiful every year. In seasons when they are the most abundant it will invariably be found that it is when the earth has been warmed to a considerable extent by a long continuance of hot, dry weather before August, with a copious rainfall during that month; this produces in the heated ground something almost approaching to fermentation, as will easily be ascertained by plunging the hand during a hot season in loose earth a day or two after it has been well moistened by rain. The heat and moisture thus combined start the spawn (which in some land is always present in quantity) into action, and should the atmosphere be still and moist and cloudy weather follow, then there is an abundance of Mushrooms out-of-doors. This at once points to the conditions necessary to be observed when they are to be grown in houses. From the present time to the close of the year they may be produced with the greatest facility and certainty; they can be grown in a very small building, but the larger the internal space, within reasonable limits, the less fluctuations there will be in the temperature, especially in changeable weather—a condition of great importance to success. An empty stable, or any similar place on the ground-floor, will generally be found to answer; if there be an apartment above, all the better, and a thatched roof is much to be preferred to either slate or tile, for the variations in the weather will have less influence upon the internal temperature than if the roof be covered with slates or tiles.

Making the Beds.—Manure in quantity proportionate to the space at command, or the size of the bed to be made, should at once be procured; this may consist of from a few wheelbarrowsful up to an ordinary cart-load or more; let it be fresh, and such as has not been saturated by rain, or has previously fermented to any considerable extent. Shake out all the long litter, leaving nothing but the droppings and short bits of straw; throw it together in a heap, either in an open shed or in the place where the Mushrooms are to be grown; do not allow it to remain so long as to ferment violently—to avoid which turn it over two or three times at intervals of four or five days; by this time it will have discharged the superabundant moisture, and can be at once made up. The bed or beds may be made altogether on the ground-floor or can be constructed in the form of wide wooden shelves, two or three above each other, with spaces between of 3 ft. or 4 ft.; but where there is room I should recommend their being made altogether on the ground-floor. Shake the manure well together, and beat it solid with the fork as the work proceeds to the thickness of about 1 ft., making the whole smooth with the back of the spade.

Spawning.—Insert a thermometer in the middle of the bed, and as soon as the temperature falls a few degrees under 80° put in the spawn, which should previously have been broken into pieces about the size of a small egg, and thrust in just below the surface 8 in. or 10 in. apart. It will be safer not to soil the bed for a few days until the heat appears to be declining; the depth of soil used varies considerably with different cultivators, some using several inches, others being equally successful with only a couple. I have generally found, when the greater depth is laid on, that the beds are longer in coming into bearing, as it takes more time for the spawn to run. The soil (any ordinary loam) must be of a medium moisture, neither too dry, nor so wet as to be adhesive; beat it quite firm, and cover at once with dry hay.

Watering.—In the course of a month the Mushrooms should make their appearance—about which time examine the bed, and if it be too dry, which will be indicated by the buttons not swelling freely, give it a moderate moistening with tepid water applied through a rosed can, after which replace the hay on the surface. When the bed has been in bearing for some weeks and the growth of the crop begins to slacken, soak it moderately with tepid water, which will often have the effect of inducing a further production. Of course I am supposing that the building is not provided with any heating medium. As the autumn months advance other Mushroom beds may be made up, and the warmth given off by the manure for these will keep up the requisite temperature for the growth of the Mushrooms. Towards the close of the year, when the weather becomes cooler, a little more covering may be used to the beds; the door in all cases should be kept shut, and any windows or other apertures through which the external air can get in quite closed.—T. P.

Potato Crop.—I have just finished taking up my second early Potatoes. On the whole, the crop has been a capital one, and generally pretty free from disease, especially Excelsior, Beauty of Hebron, and last, but by no means least, Snowflake. Out of some thirteen of the very best varieties grown in a dry, sandy loam from seed obtained from first-class houses, I find that the last-named of the above trio is, with the exception of International, the heaviest cropper and handsomest tuber of any second early variety in my garden; and, what is of far greater importance to the general grower, its cooking and keeping properties are immeasurably superior to that variety. In fact, with me it is only second in these respects to Magnum Bonum, which up to the present, and for the past three seasons, has entirely escaped the disease, which is more than I can say on behalf of either Woodstock Kidney or Reading Abbey, although grown in the same plot—aye, and in the same row—with Magnum Bonum, and which, moreover, had the extra advantages of soot and wood ashes.—Subscriber, *Towcester.*

Potato Notes.—Alpha (Pringle's) spread thinly on a loft, and lightly covered with straw, not moved all the winter, budded freely—buds some 3 in. long, with green leaves, when the Potatoes were planted, on the 28th April, in a south border. On the 28th June a luxuriant healthy growth, and, when dug, nice Potatoes, of size up to a hen's egg. Beauty of Hebron, planted on 13th February, produced on the 26th May Potatoes as large as hen's eggs. The stalks replanted when dug on the 28th June had a lot of small Potatoes, which would evidently have given a second crop if left in the ground. The old sets of this Potato, after the crop was dug in June, sent out new buds, as if never planted. Large mealy delicious Potatoes were used of this sort on the 25th of June. Extra Early Vermont, planted the 4th of March, were covered with white blossoms and the foliage strong and healthy, with large Potatoes and a heavy crop.—Wm. Johnston, *Ballykilbeg, Co. Down.*

Radishes for Winter.—For autumn and winter use these must be sown at intervals, from the beginning of August till the middle of September. To produce a crop fit for table at Christmas they must be sown in a frame the first week in October—say, a frame that has been used for Cucumbers or Melons—which should be filled within several inches of the glass with light soil; sow the seed not too thickly, protect from birds, and give plenty of air when the weather is mild. Protect from frost by covering and mulching round the frame, and there will be plenty of Radishes for salad on Christmas Day. For sowing in the open ground in summer and autumn I prefer the white Turnip, and Wood's Short-topped and French Breakfast for the frames.—H. O.

THE HARDY CACTUS.
(OPUNTIA RAFFINESQUIANA.)

Where variety is sought for this plant should certainly be grown. It is so entirely distinct from every other kind of hardy plant, as to render its presence in a garden highly desirable. Its perfect hardiness is beyond all question, as I possess a plant which has braved without flinching the rigours of ten successive winters. Excessive cold it does not mind, but stagnant moisture at the root will soon carry it off; therefore, plant it in a high and dry position, where it may catch every ray of sun in the summer, and where superfluous moisture may easily drain away. It is strange that this interesting plant should be so little known in English gardens; it is only within the last few years that growers in this country have taken it in hand. It is by no means a new plant to European gardens, having been for many years in general cultivation in Germany, where I have seen specimens some 6 ft. across, completely carpeting the surface-soil with their curious fleshy stems and producing a quantity of handsome bright yellow flowers. In this stage of development it is very interesting, presenting a remarkably distinct, quaint, and ornamental appearance. Those who possess a rockery will have no difficulty in affording this plant the conditions indispensable to its welfare, as if planted in the sunniest and driest place it will be sure to thrive. Where such a suitable situation does not already exist, it is

Hardy Cactus (Opuntia raffinesquiana).

very easy to form a raised mound of earth and stones on which to plant it. The soil should be free and sandy, mixing with it, in order to insure porosity, some brick rubbish, river sand, or mortar rubbish. Snails and slugs are extremely fond of this plant, and will in the spring, and even in mild winters, completely destroy it if not prevented. A liberal dressing of soot will keep these pests at a distance, and will impart luxuriance to the plants, for although the Cactus family object to manure in the soil, they fully appreciate a top-dressing of some concentrated manure, soot, or guano. The propagation of the hardy Cactus is easily effected. The cutting, consisting of a single joint, is placed in very sandy soil, placing the pot containing it in a sunny, airy situation under glass, and watering very sparingly. In a short time it will form roots, and will then commence to push out several young shoots, which in their turn may be taken off.

J. Cornhill.

The Smaller Scented Water Lily (Nymphæa odorata minor).—This may be grown in any vessel if it be of sufficient depth and width to allow room for the full development of the leaves. The soil, which should be laid at the bottom from 4 in. to 6 in. in depth, should consist of one part fibry loam, half part well decomposed leaf-mould, and half part river sand and gravel. The vessel should be quite filled, and should be made to overflow daily by watering with a fine-rosed watering-pot, as this removes all floating green matter. A layer of fine gravel, spar, or similar material should be laid on the surface of the soil, in order to keep it from mixing with the water.—W. G.

Sunflowers.—These are generally regarded as suitable only for cottagers or for gardens to which little attention is given. As ornamental plants they are, however, not to be despised, their robust growth and commanding aspect rendering them suitable for many situations where plants of smaller growth would be quite lost. If placed where protection is afforded from high winds, and allowed sufficient space,

they assume a somewhat dense, branching habit; and when covered with bloom present a very distinct, and by no means unattractive appearance. On no account should more than one plant be put in a place. Crowding Sunflowers destroys their distinctive characteristics. The double Sunflower (Helianthus multiflorus fl.-pl.) is a fine perennial, which is very effective when planted in large masses along with Dahlias, Hollyhocks, Tritomas, or other tall-flowering plants. It looks extremely well, too, in shrubbery borders, or in mixed beds in which bold and striking colours are desired.—G.

Tropæolum Hunteri.—This is a dwarf Tropæolum of the compactum type. It is singularly dwarf in growth, has leaves scarcely larger than a shilling, and bears numbers of small bright scarlet flowers. It is well adapted for small beds and moist districts, as in the wettest weather it does not make a very profuse growth. Like all dwarf bedding Tropæolums, it should be raised from cuttings to keep it true and dwarf, as all the compactum section have a tendency to run out when raised from seed.—D.

Foxgloves and Ferns.—There is no mixture superior to these for effect. The long spikes of brilliant colour resting on verdant Fern fronds, with now and then a fine leaf towering up among the coloured spikes, are inimitable. The two also agree well together if neither be planted so thickly as to predominate over and smother the other.—D. T.

Sweet Peas for Furnishing Cut Bloom.—Blooms of Sweet Peas are universal favourites, and one great advantage in growing Sweet Peas for this purpose is that the oftener the expanded blooms are gathered the longer the plants continue to produce them. By sowing early in November we have had them in full flower in May, and with attention to mulching, watering, and gathering every expanded flower as it is ready, we have had plenty of blossoms the whole season.—G.

Two Useful Annuals.—A gay effect has been produced in the herbaceous borders here by alternate tufts of the richly-coloured Convolvulus minor and the Crimson Flax (Linum grandiflorum). These were sown in the borders early in spring, and thinned out to a few of the strongest plants. Hardy annuals such as these when thus treated produce most beautiful effects not excelled by Pelargoniums and other tender plants that require wintering under glass.—A., *Sussex*.

The Neapolitan Violet.—Winter is fast approaching, and the season for growing winter-flowering plants will soon be over. Neapolitan Violets suffer much from drought and red spider, and they must, therefore, be well looked after till the end of September, especially as regards watering. If the soil and situation chosen for them be suitable and good, crowns selected and planted out in spring will require very little attention beyond watering and keeping them free from weeds and runners; but if extra fine crowns and flowers be required, they will need greater care. The best plan is to confine the plants in spring to a single crown, selecting such as are strongest and best; prepare a border facing the north with some fresh loam and rotten manure, and plant the crowns out on it 9 in. apart. Wireworms and slugs are two of the greatest pests which Violets have. Therefore, in using fresh loam it should be well looked over, so as to pick out all the wireworms; a little soot put in it will tend to keep down slugs. Red spider is also very troublesome to Violets, but a sprinkling twice or thrice a week with water will keep it in check. A mixture of soot and sulphur is also a good remedy for this pest, but it should be syringed off afterwards, well washing the under sides of the leaves. Sometimes this Violet will grow very weakly, and the leaves become yellow, as if attacked by red spider. If a plant in this condition be lifted it will be found that the cause of the disaster is in the soil; the roots will be seen to have turned black, and, at the same time, no sign of blight will be found on the plants. Lime-water applied to such plants will often restore them to health. This disease seldom attacks them, except in wet seasons. This season let the runners be all taken off carefully; pick all the yellow or bad under foliage, so as to keep the plants free from slugs; hoe among them once a fortnight, so as to keep the ground fresh, and allow the rain to penetrate to the roots. Water once a week with soot and cow-manure water, in which a few sheep droppings have been steeped. Mix them in a large tub, putting about 2 quarts to 4 gallons of water; with this water the plants every other day during hot weather; but if rains come they only require a little manure water about once a week till the time of transplanting has arrived. If Violets are required to be in flower early in December, they should be lifted and planted in their winter quarters earlier than if they are to flower in spring.—H. G.

Two Good Carnations.—In a large collection of Tree Carnations grown in pots I noted two which ought to occupy a prominent place in every collection. One named Mons. Baldwin is a tall grower, and bears very large, well-formed, bright crimson flowers, which last on the plants in good condition for two or three weeks. Garibaldi is the name of the other; it is a dwarfer grower, but an equally abundant bloomer, its flowers being 3 in. across, and of a bright scarlet.—S.

Acanthuses in Bloom.—These are beginning to get a well-deserved place in our flower borders, and also occasionally in the sub-tropical garden. It, however, takes some time to get them thoroughly established, and hence we do not as yet often see them at their best. The large dark-leaved one, called A. latifolius, requires considerable time and good deep, rich soil before it attains its full size; it is then very effective. In some heavy cold clay soils these

Spiny Bear's-breech (Acanthus spinosus); showing habit of plant.

do not appear to flower freely. In warm open soils they bloom freely enough, and their flowers have a very distinct appearance from any others, and much quiet beauty. By the way, it is said that the firmly but delicately-chiselled beauty of the flowers and their surroundings led the Greek sculptors to adopt them as the original model of the celebrated Corinthian capital. Acanthus longifolius, A. latifolius, and A. spinosus are all kinds that flower well in good sandy loam, and which are much admired by all who see them. Where plants for indoors have to be largely provided, the Acanthus latifolius and mollis will also be found to be most useful, not only on account of their beautiful green foliage fitting them so well for large vases, but from the fact that they retain their health and vigour, and continue to produce fresh foliage in positions so imperfectly lighted and ventilated, that scarcely any other plant would exist for any length of time.—J. G.

Tyerman's Groundsel (Senecio pulcher).—This fine garden plant now flowers in London nurseries. It is a stately species, the flowers of which are fully 2½ in. in diameter, and of a rich crimson-purple colour with a yellow disc. The plant attains a height of from 15 in. to 18 in., the flower-stem being branched. It is not an annual, as was at one time supposed, and as the seed rarely ripens in this country, the period of blooming being late, it may be useful to know that it is readily increased by means of root-cuttings.—B.

Phlox Drummondi a Continuous Flowerer.—Not the least amongst the many good properties possessed by this beautiful annual is that of its flowering continuously late in autumn; when most of the occupants of the summer flower beds begin to fade this is even more floriferous than in the height of summer.—J.

AUTUMN FLOWERS AND ANNUALS TO BLOOM IN SPRING.

There are plenty of beautiful flowering plants which bloom freely and naturally in autumn but they require to be thoroughly established, and should, therefore, be planted early in spring and carefully tended during the summer months. Let us take, for instance, the herbaceous Phlox, the colours of which are both chaste and brilliant. They should be planted in rich soil in March, and should be mulched and well supplied with water throughout the growing season. The same may be said of the Chrysanthemum, which requires generous treatment. Anemone japonica, of which both the white and red varieties should be grown, is a beautiful autumn-flowering plant, as is also the brilliant Lobelia fulgens. This latter plant should be planted in free light soil; sandy peat is the best material, as in this the roots are not so liable to decay. Then there are Rudbeckia Newmanni, a showy perennial with yellow flowers; Hydrangea paniculata grandiflora, flowers snowy white, lasting far into the autumn; various kinds of Michaelmas Daisies; the Golden Rod, Stokesia cyanea, and last, but not least, the beautiful family of Clematis, which last in beauty up to the close of the autumn. By means of the above-mentioned plants a garden may be made gay and interesting throughout the autumn months. Annuals for spring flowering should be sown at once. They may be sown where they are to bloom, which is the least trouble, but as they need full exposure to sun and air, they should be sown where they are not hemmed in by tall-growing plants. Choose, therefore, a piece of ground in an open, sunny situation, and fork it up, so that it may come into a nice free mellow condition; rake it perfectly level, and then sow in very shallow drills. If the weather is dry water the drills before sowing the seed, and sow thinly. Thin out the seedlings when up to 4 in. apart, so that they get robust, a point of the utmost importance, as they have to endure the vicissitudes of the winter months. By the commencement of October they should be placed in their permanent situations, planting them quite 9 in. apart, for it should be remembered that autumn-sown annuals attain much larger dimensions than those sown in spring, and consequently require much more space. A square foot is none too much for a spreading plant like the Nemophila, the beauty of which cannot be properly estimated unless thus treated. J. C.

What is the Use?—The following sensible note from an American contemporary may be read with profit by many of our readers who ask queries:—If "J. B. H.," of New Holland, Ohio, had signed his full name, he might long ago have had an answer by postal card—telling him that there were probably no Cashmere goats in the country.—There was nothing in the question that "J. B. H." need be ashamed of; even were he candidate for President, no capital could be made against him. What is the use of writing letters and omitting to sign them? The general fate of such is the waste-paper basket. If a letter is not of sufficient importance for the writer to sign it, it is of no sort of importance to us, and three cents may be saved if the writer puts it into his own waste-basket.

New Grass-cutter.—We have lately had the opportunity of seeing a handy little tool for cutting Grass where a machine is inconvenient or too costly. It is patented by Mr. Ridgway, 18, Market Place, Macclesfield, and so far as our experience of it goes it does its work satisfactorily; and if it proves durable, as it appears likely to do, it will doubtless command a large sale. An illustration will be found of it in our advt. columns.

Improving Lawns.—We have read with pleasure "J. D.'s" interesting notes on this subject. As to the varieties named by "J. D.," he is quite right as far as he goes. We find it advisable to add other fine-growing sorts, and such as are naturally inclined to tiller, especially when mown. It is to the careful selection of grasses possessing these desirable qualities that the close and springy nature of the lawns produced at the Paris Exhibition is attributed. With regard to turf, it is, as "J. D." remarks, very often carelessly chosen, and our experience is that so great

is the expense, trouble of after management, and coarse appearance of many lawns produced by turfing, seeding is becoming much more general, and the fact is, that if people would only seed more liberally, a more satisfactory result would be obtained in as short a time as with turfing. It is a very common error to suppose that grass seed will grow well, however sown, and however little attended to. But the fact is, it requires a very finely disintegrated seed-bed, and especially so the fine growing varieties recommended for lawns. The depth to which the seed should be covered is another important point, which is not sufficiently attended to. The looser the texture of the soil, the deeper may the seed be covered with impunity. But we consider the safest plan is to rake the seeds in very lightly, and give a good covering of old hotbed or some similar substance, which protects the seed from birds and sun, at the same time encouraging germination and growth.—Carter & Co.

Cure for Celery Blight.—Having been for some years troubled with Celery blight, the attacks of which are readily recognised by the leaves of the plant looking as if they had been scalded, I determined to seek a remedy which should either kill or cure. I directed my kitchen gardener to fill his 36-gallon water-barrow with sufficient water to dissolve two 1-lb. boxes of Gishurst Compound, mixing with it 1 lb. of Pooley's Tobacco Powder, and filling up the whole with boiling water, stirring all well together. The mixture, after being allowed to stand for some twenty-four hours, was used to water the affected Celery plants, a watering-can with a very fine rose being employed for the purpose. The plants having been well saturated with this mixture were then examined, and the grubs which had burrowed in the leaves were all found to be dead. The crop at the present moment looks most flourishing, the mixture having evidently acted not only as an insecticide, but as a fertiliser. About three weeks after I repeated the same treatment with another crop, with precisely the same results.—J. R.

RE-ISSUE OF PAXTON'S "FLOWER GARDEN."*

The re-issue of this old work, the first number of which is before us, we should say is both an unwise and unprofitable undertaking. It is too expensive and uninstructive to ever become popular, and the coloured plates are anything but good. In the face of the great amount of good work which remains to be done, and may be done by even those who only look at matters from a business point of view, it is not desirable that descriptions of plants which have been banished from our gardens as undesirable should be re-issued in the form of a new gardening work. The first number begins with two new plates, both hard, and poor, and crude in execution and colour as plates can be. The plate of Spiræa palmata is a dirty dull purple, the plant being of a fine bright crimson-red. No doubt succeeding numbers will contain old plants re-issued, and we hope with a better result than the present one. The editing is done by Mr. Baines, who, of course, is well acquainted with the cultural details of many plants, and is well able to describe the conditions under which they are most likely to succeed. The arrangement, however, is as puzzling as it well can be. On the first page we get a short description and some cultural hints on a genera of Orchids; next, we get similar information respecting a Spiræa; then, short botanical descriptions of an Aristolochia and another Orchid, a Cactus, a few words about a hardy plant; then we get to a rare Dracæna. Next, we come to a Berberis, then a few more common greenhouse and half-hardy plants, and a rare Anthurium, a line on a rare terrestrial Orchid, then more Berberries. We turn over leaf, and come to a mixture of hardy, and stove, and greenhouse plants, and another Anthurium, and presently another Spiræa, and another dose of half-hardy annuals, &c.; and, coming to the last page, we have Orchids, with which we started, a couple of Ferns, and finish off with a magnificent Trumpet flower belonging to the Bignoniads. This being the case in the first number, we must leave our readers to judge what the work will be like when completed, or rather finished.

* Re-issue of Paxton's "Flower Garden." London: Cassell, Petter, & Galpin.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 6.—Sowing annuals in 3-in. pots for spring bedding; potting cuttings of Centaurea candidissima and Cauliflower plants for early work; removing plants of Coleus from cutting frame, and putting them where they can have more air; setting Strawberry plants out singly to ripen their crowns; putting pot Vines into an airy situation; shifting late-sown Primulas into 6-in. pots; planting latest sown Endive; also some Endive in Asparagus trenches; planting Violets in frames, the manure in which should not be too hot, or they will not succeed; removing all nets from trees where not wanted; placing boards over some Endive to blanch it, but this is not so good a plan as tying it; syringing Gardenias well with clear water for bug, afterwards with 5 oz. soft soap to a large potful of water; manuring land for August-sown Cabbages; fumigating Orchids for thrips.

Sept. 7.—Sowing the latest Radishes; potting bulbs in loam, manure, and sand, and potting up Pelargoniums from the flower garden; tying up Chrysanthemums and spring-sown tree Mignonette; getting frames on Violet beds; digging land ready for Lettuce; getting manure for a new Mushroom bed; giving a little guano

Flower of the Spiny Bear's-breech (Acanthus spinosus).

to Celery and sloping sides of trenches slightly to let in more light and air.

Sept. 8.—Potting Hollyhocks and putting them into a pit; also Roman Hyacinths (five to a pot) and Roman Narcissi (three to a 4½-in. pot); planting main plantation of Strawberries; gathering Cox's Orange Pippin Apples; all Onions nearly harvested; earthing up latest planted Cauliflowers. Plants ready for house decoration:—Asters, Mignonette, Sedums, scented-leaved and double-flowered Pelargoniums, Fuchsias, Maize, Zinnias, Scutellarias, scented Verbenas, Heliotropes, Amarantus, Petunias, Balsams, Vallota purpurea, Musk, Rhodanthe, Coleus, Lilium lancifolium, L. auratum, Justicia carnea, Nerine, Agapanthus, Hydrangea, Tuberose, Plumbago, and Primula.

Sept. 9.—Sowing Mustard and Cress, some under cover, and some in boxes in heat; re-sowing Spinach where first sowing had failed; potting off Mangles' variegated and Mrs. Pollock Pelargoniums, putting the latter under glass; potting and plunging bulbs in sand; put in cuttings of Cerastium in a frame; planting some more July-sown Cabbage and some more Endive on Onion ground; taking off runners from Strawberry plants in pots; tying up more Endive for autumn supply; gathering Williams' Bon Chrétien and some Louise Bonne Pears; pruning Laurels again, being particular not to injure the foliage, also Cotoneasters on walls; exposing Tomatoes to the sun; Calceolarias, Pelargoniums, Phloxes, and Fuchsias, that were put at the back of a north wall early in June and stopped, and which were about the first week in August put on the south side, and when the flowers began to expand removed under glass, are now in small pots, and in good condition for stands.

Sept. 10.—Potting all outdoor struck variegated Pelargoniums; shifting Primulas from cold frame behind wall to pits in the sun; pricking out Cauliflower and green and red Cabbage; sponging Camellias; syringing young Vines with strong soap-water for thrips; gathering autumn Bergamot Pears and Keswick Codlin Apples; lifting first field Potatoes; putting hand-glasses ready in which to prick out Cauliflowers; cutting from Cabbage quarter any useless heads, in order to induce the stumps to form sprouts; pinching off all runners from Strawberry plants in pots, and clearing old Strawberry plantation.

Sept. 11.—Potting Tom Thumb and other green-leaved bedding Pelargoniums; moving Heliotropes in pots under cover; planting a large piece of August-sown Bath Cos Lettuce, also Cabbage Lettuce, Stanstead Park, Victoria, and Wheeler's Tom Thumb for winter and spring; staking and tying October Mignonette; going over and nailing wall trees; gathering Peaches, Nectarines, Cherries, and Currants, also Apples, Fondante d'Automne and Thompson's Pears, and Capsicums; putting Basil and Marjoram in a box in a dry place; cleaning Asparagus beds, seed beds, and Celery ridges; getting all frames and cases painted, and putting sulphur on pipes to keep down mildew on young Vines.

Glasshouses.

Primulas.—Late-sown Primulas required for flowering in spring should now be shifted into 6-in. pots, which, with the aid of manure water, will be found large enough for fast-growing, soft-wooded plants. Primulas like a compost consisting of good fresh loam, with one-sixth leaf-mould and a little sand. Press the soil firmly in the pots, letting it come well up to the base of the under leaves, so as to keep the plants secure in their places without rocking about, as they do when not potted low enough. Let both these and the earlier sown plants intended to flower through the last months of the year and early portion of the next be for some weeks yet in cold frames exposed to plenty of air, elevated close up to the glass, with the lights off in fine weather, particularly at night, as exposure to the dew is of considerable service to them. A piece of very thin, open netting stretched over the frames during the daytime when the sun is on them will be much better than exposing them to its full influence.

Cinerarias.—Attend well to those which are rapidly filling the pots with roots, as any deficiency in the way of water will so far injure them as to cause the loss of their lower leaves, and when that happens, however well flowered they may be, they lose half their beauty. Let the plants be looked over every ten days in order to see that aphides do not get a lodgment on them, or a like loss of leaf will be the result. If the plants be fumigated to destroy aphides it should be done lightly, or the foliage will be liable to get injured. The safest course is to watch closely, and immediately a plant is affected with either aphides or thrips to dip it in Tobacco water, a supply of which ready for use should always be at hand in every garden, large or small, especially during spring and summer, when these insects come to life so quickly.

Double Petunias.—Cuttings of these should now be put in for flowering next spring and summer, after which the old plants, when done blooming, may be thrown away, as young ones are in all respects better, and occupy less room.

Nierembergias.—These are very suitable to edge vases for summer decoration, where their drooping habit and profusion of flowers are seen to advantage. They are particularly adapted for use in window boxes or for room plants. Cuttings should at once be got in, selecting the softest shoots that have not a disposition to bloom. Put in the points of these 1 in. apart in 5-in. pots in sandy peat surfaced with ½ in. of sand; water them immediately and cover with a bell-glass, putting them in a warm house or frame. When they are struck they should be placed singly in small pots for the winter and kept near the glass. If they can be accommodated with a temperature of 45° in the night it will keep them growing.

Ferns.—In places where Ferns are grown, if the plants stand on any loose material that will hold moisture, such as ashes or sand and fine gravel mixed, kinds like Pteris serrulata, and the varieties of Adiantum, such as A. cuneatum, formusum, and pubescens, will drop their spores and vegetate in quantity without the

trouble of a special preparation in sowing them. The young plants that thus come up in spring will now be large enough for putting singly in small pots; for these do not use them too large, but in all cases let them be proportionate in size to the plants. Peat is the most suitable soil in which to grow them when it can be had good, but where not easily procurable, these and other Ferns will grow in ordinary loam, always taking the precaution of keeping it porous by a liberal admixture of crocks broken to the size of Horse Beans; or coal cinders will do equally well broken small, to which some sand has been added; the proportion of this latter, for these as for all other plants, cannot be exactly determined, being dependent upon the quantity of sand the soil naturally contains. Ferns, unlike many plants, should, as soon as potted, be immediately watered, for if ever the soil be allowed to get so dry after potting, as is needful for subjects that do not require so much water, they will flag, and whenever this occurs to a Fern, especially when its roots have been disturbed, as in the case of potting, it receives serious injury, and generally loses many of the fronds. The cultivation of Ferns is often associated with the idea of a dark, heavily-shaded situation. This produces a disposition of the fronds to damp off in winter, especially if the growth has been made in too close and warm an atmosphere. Ferns so treated generally make very large, deep green fronds, but not enduring; the varieties above named, which are so useful for general purposes, can scarcely be grown with too much light, provided they are shaded slightly from the direct rays of the sun when it is powerful. Older plants of Ferns, such as the above grown for cutting, should be kept in comparatively small pots; by this means any disposition to luxuriant growth is checked, and they will stand in water for several days.

Flower Garden.

Beds and Borders.—The mixed or herbaceous border should now have careful attention, as Phloxes, Pentstemons, and many other late autumnal flowers will now be in full beauty, and should not be in any degree marred or disfigured by being associated with the decaying flowers and foliage of other occupants of the border, nor should such plants be by any means cut down prematurely or in an unripened condition; but, at the same time, all dead and decaying matter may be removed with advantage to them as well as to the general appearance of the garden. As regards annual plants, they should be at once removed as soon as their beauty is over, unless in cases were seed may be required, and this should be carefully picked as it becomes ripe. A border of herbaceous and Alpine plants and bulbs, whether situated upon the margins or belts of flowering and evergreen shrubs or otherwise, should be so arranged as to have the flowers peculiar to the different seasons so distributed throughout the entire length and breadth of the border that no part of it will, at any season of the year, be entirely destitute of flowering plants; and care should also be taken to properly graduate the various species as regards their height, so that dwarf-growing plants may not find themselves partially hid or overshadowed by taller-growing sorts. Beds or clumps of double-flowered Zinnias are now in fine condition, and are most valuable as autumnal-flowering plants, and possess the power of resisting drought to a very considerable extent, especially if a deep, rich, and well-manured soil has been selected for them, and such encouragement they well deserve. Go carefully over the beds now and select a few of the very finest and most distinct blooms as seed-bearers, and mark them by securing to them pieces of coloured worsted or other material, and pick them as soon as they are ripe. By this means the strain will be continually improved, while the reverse will be the case if the seeds are gathered indiscriminately. Let Chrysanthemums, German and other Asters, as well as all other late-flowering plants, be carefully staked to prevent them being blown down or injured by high winds. Order, or get in readiness, the various bulbs which will soon be required for furnishing the flower beds for spring. The cuttings of such plants as the Verbena, Petunia, Coleus, and Alternanthera, which may have been struck in close frames or pits, will now, in most instances, be well rooted, and the store pots or pans containing them should be placed on cinder ashes in the open air, fully exposed to the sun for some time, or as long as it can be done with safety; this will have the effect of rendering them robust and hardy, and it is of the greatest importance to have them in this condition before the approach of winter.

Window Plants.—Remove plants that have done blooming, and always endeavour to have good healthy foliage if flowers are scarce. The Ivy-leaved Pelargoniums are the best of all window plants; display them to advantage, and pick off seeds and decaying leaves from Tropæolums. Balsams and Asters are now very pretty in windows, as are also some plants of Tagetes and African Marigolds. Give plenty of water to plants of Creeping Jenny, and permit the shoots of the Virginian Creeper to droop in graceful festoons. Introduce a few Cockscombs, yellow Calceolarias, Grasses, and any other miscellaneous plants obtainable. Indeed, a very pretty ornamentation in the window is the Japanese Maize grown in pots. Mesembryanthemums, too, are very useful for a dry position, and Gazania splendens for a sunny one. The various small-leaved Ivies, too, should not be forgotten; they are useful for suspended baskets, screens, or for spreading over balconies, and they grow and thrive under even adverse circumstances. Ferns and Selaginellas are also, as everybody knows, excellent for windows, especially those facing the north or east; and for windows facing the brightest sunshine, Acacia lophantha, and other kinds of Acacia, some sorts of Asparagus, Convolvulus mauritanicus, Grasses, and other plants of that sort are suitable.

Fruit.

Vines.—Examine the inside borders of late Vineries, and see that the soil is not too dry before the Grapes become nearly ripe. Where such is the case, lose no time in giving sufficient water to mature the crop, and also to keep the soil moist enough to prevent the fruit from shrivelling during winter. Every favourable opportunity must be taken advantage of to push on very late Grapes this month, for the decrease in the amount of sun-heat, which will be felt in subsequent ones, will be unfavourable to their development. Late Grapes are better flavoured when thoroughly ripe by the end of September than later, and they are not so liable to damp throughout the winter when in this state as when only partially ripe. Gros Colman is in many instances a bad kind to colour, but it often eats well when tinted with green. No anxiety need be felt about the colouring of the Black Alicante; it will do so under all circumstances. The surface of the border under Grapes ripe for autumn use should now be kept very dry, to prevent damping amongst the fruit; and do not rake or stir the loose surface-soil, or a great deal of dust will rise to rest on and disfigure the berries. Keep the ventilators of all Vineries in which the fruit is all cut wide open night and day, so that the fruit may become ripe as soon as possible.

Peaches and Nectarines.—If it is found difficult to get the wood of these fully ripened in orchard houses owing to the growth being more profuse and luxuriant than usual, the only way of aiding maturity will be as soon as the fruit has all been gathered to cut out all useless spray and shoots, tying out the remainder thinly, and then to apply artificial warmth, accompanied by a moderate amount of ventilation, till the wood begins to get brown and hard; the trees may then be gradually inured to bear full exposure. Though the fruit is gathered, inside borders must still receive good supplies of water, and syringing must be resumed to keep down insects, and so preserve the foliage in a healthy condition till the fruit-buds are well developed.

Strawberries.—Plants in pots should now have abundant space, in order that air may play about the foliage. The pots should be occasionally lifted, to prevent any roots entering the ashes or gravel on which they are placed. Keep all runners persistently pinched off, and pull out weeds as soon as perceived, for if left to get large there must necessarily, on their removal, be a certain amount of mutilation of surface rootlets. If after heavy rains any are waterlogged, turn out the plants and rectify the drainage, for there can be no healthy root action whilst the plants continue in such a condition.

Vegetables.

In a well-managed kitchen garden what is termed the busy season extends throughout the year, but if there ever were a slack time it would be during the present month, when, for the most part, all winter crops have been sown or planted, and others, such as Onions, Potatoes, &c., harvested. Any spare time, however, may be devoted to the destruction of weeds. All Potatoes of whatever kind ought now to be lifted. Winter Greens and Broccoli planted between the rows of Potatoes will now require earthing up. Regarding the utility of this practice, there can be no doubt that it is highly beneficial, both as a support against wind and as favouring the production of a large amount of stem rootlets, which are of the greatest service to the plant. Continue to plant all ground as it becomes vacant either with Coleworts, Cabbages, or sprouting Broccoli. If not yet sown in sufficient quantity seeds of the following vegetables should be got in at once, viz.: Chirk Castle Blackstone Turnips, Bath Cos and Hardy Hammersmith Lettuces, Early French Horn Carrots, Turnip-rooted Radishes, and Winter Spinach. Thin out former sowings as early as the seedlings can be handled, and keep the surface soil about them open by hoeing whenever the ground is sufficiently dry to admit of that being done. August-sown Cauliflower plants ought not to be left in the seed bed to become drawn or weakly; a good sturdy plant that will winter well can only be ensured by pricking out early. If the ground be ready for them, those that are intended for wintering under the protection of handlights may be planted in that position at once, and the lights can be put over them any time before there is danger of injury from frost. Box edgings should be clipped, also hedges, and all decaying vegetable refuse should be removed to the manure heap.

Unless where a deficiency of winter vegetables has been put in, and there are good strong plants at hand of Kale or Coleworts, it is not advisable to plant more of the ground that becomes vacant after this, as the time intervening before the growing season is over is not sufficient to admit of these late-planted crops attaining a useful size, and they seriously interfere with the preparation of the ground for another year without making any adequate return. Let all haulm of Peas, French and Broad Beans, or Lettuces that have run to seed, or anything of a similar description, as soon as they have ceased to bear or to be of further use on the ground, be at once removed. It is a mistake to allow anything of this kind to remain, for so long as any growth continues, it is so much extracted from the soil to no purpose. They should, therefore, be conveyed to the refuse heap as soon as possible. Let all ground be well hoed as often as weeds make their appearance. These will not cease to spring for some time yet, growing, as they do, with a lower temperature than most cultivated crops. Where salads are in demand, especially in the spring, it is well now to sow a little Corn Salad and American Cress.

Warm Exposures for Flowers, Fruits, and Vegetables.—From observations made in different parts of the country, I have come to the conclusion that the south, south-west, and west are the only exposures in a garden worth utilising for the culture of early crops of flowers, fruits, or vegetables. A south-east wall gets the full force of the sun when it shines from early morning till about 11 a.m., but it never experiences the intensity of the sun's rays like a west wall, which is always much the warmer of the two; and, besides, the crops on an east border are more liable to suffer from frost, because the sun shines upon the frozen plants before they are thawed; this they are sure to be on a west border before the sun reaches them. For producing early crops of such fruits as Apricots, Peaches, and Cherries—the latter of which do uncommonly well on a warm wall—there is hardly any position so favourable as the angle of a dwelling house facing the south-west. The heat radiated from both walls after twelve o'clock on a sunny day is often more than tropical, and greater than the temperature of an ordinary south wall. We have seen the thermometer record about 140° in the angle of a house wall in the north. When early Roses are wanted, no better situation can be had for them. A good climber,

like Gloire de Dijon, Maréchal Niel, or, indeed, any of the dwarf kinds that naturally flower early, produce flowers three weeks or a month earlier in such corners than elsewhere. It is the shelter from cold winds more than the protection from frosts which hurries vegetation.—J. S.

ROSES.

Rose Hedges.—We never heard any one remark that they had too many Roses; indeed, in nine gardens out of ten there are no more than are sufficient for room vases and other indoor decorations. If Roses be, however, wanted in profusion, either for cutting, for pot-pourri, or for other purposes, plant Rose hedges on the fringes of the lawn or alongside woodland walks and drives; or if Briers already exist, bud them with any of the vigorous, free-blooming varieties that may now be found in cultivation. Bud, in short, all the Briers that exist within half a mile of the house, and then after a time there will be Roses enough for everybody. It should never be forgotten that the soil on which Briers will grow will produce the most lovely Roses, and that wherever there is a fence of Hawthorns, Crabs, or Sloes, there the finest Pears, Apples, and Plums would grow equally well. A hedge of Sweetbriers is a luxury, even in the most princely garden; there is one at Moor Park, and most fragrant it is after every summer shower. Among the Roses best suited for hedges, none are better than Gloire de Dijon, Maréchal Niel, Noisettes, Banksian, Ayrshire, Boursault Amadis (itself one of the best of stocks on which to graft or bud delicate Teas and Noisettes), climbing Devoniensis, Lamarque, and the common Sweetbrier. If variety of colour or fragrance be desired, then interplant with Clematis and golden or scarlet-flowered Honeysuckles and the white Jessamine. A Rose hedge once well planted requires very little attention afterwards; a little shortening back of the too luxuriant shoots, and a mulching of rotten manure and leaves every winter will be sufficient, an outlay which will be amply repaid in the shape of plenty of Roses.—B.

Striking Rose Cuttings.—If "Mark" will leave the striking of his Rose cuttings until the end of September, when the sap is running down, and use ripe shoots of the year, and allow the cuttings which root to stand undisturbed until the following October, he will most likely get over his difficulty, and have a nice lot of own root Roses.—J. D.

Climbing Roses.—I am sorry I do not know the name of the cluster Rose which has done so well this year. It is rather uncommon, I think; I only know one other garden where it grows in my neighbourhood (Redhill, sandy soil). I shall be happy to send any one flowers when it blooms next year. Many gardeners would know its name, but I have not met with one who does.—MARK.

Bone Dust as Manure.—With reference to a remark in GARDENING August 7 respecting bone dust as a manure, I believe it to be one of the most valuable in existence when it can be obtained pure, but the difficulty of procuring it unadulterated often prevents its use. The fact is many of the men who collect this (before selling it to the dealers) mix with it such a quantity of foreign matter, as lime rubbish, silver sand, sawdust, &c., that after it has again gone through another mixing by the dealers it is comparatively worthless, having but very little of the genuine article in it. I have made quantities of this for many years (being a bone brush manufacturer), and the collectors have often paid me a higher price for it when pure than the dealers have charged after its having passed through the hands of both themselves and the collecters. Moreover, the exhorbitant price often charged prevents many from purchasing the article. The price in its pure state (or as pure as it can be swept up from the floor of the workshop) should not exceed 12s. per cwt.; but care must be observed in its use, as only a small quantity mixed with the earth, or thrown over the surface, will be found sufficient; but those wishing to use it in Vine borders will find the bone pieces more useful, as they last many years in the ground. REUBEN OAKELY.

House and Window Gardening.

Harrison's Musk as a Window Plant.—Young plants of this in 3-in. pots, placed in a window early in spring, will continue flowering continually, if well supplied with water, until midsummer. They should then be potted into 6-in. pots, and the shoots should be carefully pegged down over the new soil; they will then go on growing and flowering until late in the autumn. They require plenty of moisture at the root at all times. Another good way is to put in a pot or two of cuttings about midsummer from the old plants. Five cuttings in a 4-in. pot placed in a shady frame or in a window under a bell-glass will soon strike and form bushy plants. In turn the tops from these may be removed and put in for succession.

Gardening on Window-sills.—Some time ago I saw the following simple, but very effective and inexpensive mode of making a window-sill continually bright and pretty: Some wire netting was fastened to each side and filled with common Moss; in this were sunk to the brim pots containing flowers of any desired sort or colour. The Moss prevented the plants from getting too dry, and with a little water they were kept in good growing condition. I think that those beautiful Forget-me-nots, named by "T. F." in your issue of August 7, could be grown to perfection by this simple method.—T. FRIP.

Wasps' Nests.—A simple and effectual way of destroying these is to pour into the hole after dark about a pint or a quart of coal tar, then stuff in a brickbat and pour more tar on to it. Another remedy is to pour into the hole about half a pint of paraffin oil. If burnt out with brimstone, melt the brimstone first in a pipkin; then pour it on to a sheet of paper, which roll into a scroll about the thickness of your wrist; light it and place it in the hole; then blow gently into the hole with a pair of bellows, after dark of course; afterwards little annoyance will be experienced from wasps.—H. Z. BREWSTER, *Wrentham Lodge, Exeter.*

The Thrush a Snail Destroyer.—The thrush is no favourite of cultivators, owing to its being fond of bush fruit. Judging from what I have observed of the doings of this bird, however, I am of opinion that the harm which it inflicts upon us is more than counterbalanced by the amount of snails and slugs which it destroys. I do not believe that there is any wild bird so voracious in this respect as the thrush. This season a family of these birds found their way into a small plantation of Raspberries, and I noticed at times a sharp knocking like that of hitting one stone upon another. This I eventually found to arise from one of the birds making use of a large stone upon which to break the shells, and a hetacomb of these lying around plainly indicated the havoc which had been made amongst them. Previous to this discovery, I had observed an unusual number of empty shells scattered about. The parent birds had, doubtless, fed their young upon their contents. I am convinced that were it possible to tame and keep a pair of thrushes in a garden, we should be but little troubled with snails and slugs. To many who may have been annoyed by the depredations of this bird, it may be some consolation to know that during the greater part of the year it lives mainly upon that which is one of the greatest scourges of both the professional and amateur cultivator.—J. C.

Heckfield Place Gardens.—In accordance with now an established rule, Viscount Eversley will throughout next week, dating from September 6, throw open his beautiful gardens and grounds free to the public. In doing this the noble lord displays a degree of unselfishness not too common, alas! amongst the rich, too many of whom prefer to keep their fine gardens and mansions to themselves, and rigidly exclude all unprivileged outsiders. The gardens at Heckfield are very beautiful, and the grounds superb. In all departments the work is well done, and many a useful lesson in gardening may be learned by a visit. The place is situated in North Hants, near Strathfieldsaye, the residence of the Duke of Wellington, and also near to the historic mansion of Sir W. Cope. It is five miles from Winchfield Station, on the South-Western Railway, and the same distance from the Mortimer Station of the Great Western line. It is also about nine miles from the towns of Reading, Wokingham, and Basingstoke.

Saving Flower Seeds.—When nearly ripe the pods of Stocks and other plants generally open a little. Then gather, and hang them up in a dry place over a sheet of paper, on which they will fall. Any that do not can be rubbed out by hand.—B.

To Keep Flower-pots Clean.—Dirty flower-pots should be well scrubbed with hot water and strong soda. I never allow a pot to be put away or used again till clean and red; it is a slovenly habit, and very bad for plants to allow the green to remain on.—B.

Heating Greenhouses.—In answer to many inquiries on this subject, we think we may justly draw the attention of our readers to a new terra-cotta stove and boiler combined, heated by paraffin or gas, now being made by Mr. Broadbridge. We have seen it in action, and as far as we can judge at present it is just the thing that is required for small greenhouses. It is constructed so as to give off a moist heat, whilst all the fumes from the paraffin are carried out of the house through a tube. During summer, when not in use, the stove can be stored away if desirable. When a moist heat is not requisite, which it is not always in winter, the boiler can be left empty with safety, but cold water must not of course be poured into it while the lamp is burning.

GLASSHOUSES & FRAMES.

Abutilons in Greenhouses and Windows.—These beautiful flowering plants are amongst my chief favourites for greenhouse and room decoration, and well repay the care and attention of the grower. I cannot help wondering that these are so seldom included in our collections of indoor flowers, but I am sure those who once grow the Abutilon will rarely be satisfied without obtaining several of the numerous varieties of it. A. Boule de Neige is the one most commonly grown by amateurs as well as the market gardeners, and its pure white, bell-shaped flowers, produced in such profusion, are greatly sought after and much admired. A. roseflora is another very good variety; the blooms are a beautiful salmon colour veined with crimson. These two are especially valuable for winter blooming, the first particularly. We also have several variegated Abutilons, as the well-known tessellatum, with its pretty marbled leaves and curious crimson tassels tipped with yellow, which always proves a great addition when placed amongst other dark foliage plants. One thing every person will be glad to know, and that is, they are very easily propagated by taking the young shoots about 3 in. long, and covering them with a bell-glass in a warm greenhouse. In three or four weeks they should be well rooted without the aid of bottom-heat. All this class of plants produce their flowers in the same graceful drooping way, very like our old favourite the Fuchsia, and when one sees a large well-grown specimen Abutilon covered with crimson, yellow, or white bells, it is certainly an ornament to any conservatory.—W. A. G.

Grevillea robusta from Seed.—This is one of the most useful of green-leaved plants for decorative purposes, and it is now largely grown for market. Seed of it sown early in spring will, if properly attended to, produce fine, graceful-leaved plants, from 12 in. to 18 in. high by August. We lately saw a large houseful of similar-sized plants, the result of seed sown at the time named.—S.

Wintering Half-hardy Plants in Frames.—Although the system of heating houses and pits with hot water has greatly simplified the keeping of tender plants through the winter, and, to a great extent superseded cold frames and pits for that purpose, yet it frequently happens that small cultivators have no heated structure of any kind, and, therefore, necessarily fall back on the somewhat antiquated, though by no means to be despised, two or three-light frame, that, during summer, is usually devoted to Cucumbers, &c. I have seen a good many plants safely wintered as follows: As early

as cuttings are procurable, say in the end of July, commence propagating Pelargoniums. Get some boxes 4 in. deep, and of lengths most convenient for storing purposes, and fill them with tolerably fine, sandy soil; in this insert the cuttings, prepared in the usual manner, about 2 in. apart. These will root freely in a fully exposed position if moderately supplied with moisture, and they will be well established in the boxes before winter sets in. During August such tender, soft-wooded cuttings as those of Lobelia, Alyssum, Verbena, &c., may be readily propagated in store pots under hand-glasses or cloches set in a tolerably shaded position, giving a little air at night, picking off any decayed leaves, and giving water sufficient to keep them from flagging. The pots should be well drained; at least, they should be one-third full of potsheds, over which should be put a covering of rough soil, finishing with finely-sifted soil and clear, sharp sand. As soon as they commence to grow, which will be in about three weeks from the date of insertion, give more air, and after another week remove them to an open situation, but sheltered from rough winds. The growing points and all flower-buds must be kept pinched close, in order to induce a dwarf, sturdy habit. About the end of September, or early in October, set the frames on a good, hard foundation of well-trodden coal ashes that will keep worms down, and super-abundant moisture from rising. A sheltered position fully exposed to sun and air is best, as at all seasons, when there is not actual frost, plenty of ventilation should be given, as stagnant damp is more frequently fatal than frost. The latter, however, must be guarded against by means of dry litter put over the glass, and the sides may be securely protected by dry leaves packed firmly about 1½ ft. thick all round. If the boxes and pots be elevated on a hollow stage all the better, and only sufficient water to prevent flagging should be given until the days begin to lengthen. Then any which it may be desirable to increase may be removed to closer quarters to promote young growth for cuttings, as where means for propagating are at hand, spring-struck plants from those kept in store pots, such as Verbenas and Lobelias, are the best. Pelargoniums, however, are best struck in the autumn. Where space will allow, these should be potted off early in spring, and as soon as they have become well established under glass, they may be hardened off under some temporary protection. If intended to remain in the boxes until they are planted out, strong-growing varieties must be allowed more space.

Climber for Warm Greenhouse (Bougainvillea glabra).—Among climbers, the blooms of which adorn the roofs and walls of our plant houses, there is none more beautiful than this Bougainvillea, owing to the large size and profusion of its mauve or rather pink bracts. Bougainvilleas inhabit the warm, semi-tropical valleys lying along the upper tributaries of the Platte River, the banks of which are clothed with an infinite variety of tropical productions. Skirting the forest, the Bougainvillea may be seen growing rampant among the branches of some tree, which it festoons in a gay but artless manner, not without injury, however, to a sapling. This luxuriance, which lasts in greater or less abundance about nine months, is promoted by copious rains, clear sunshine, atmospheric influences, and decayed vegetation, but with winter comes a check; sometimes the leaves fall emtirely, but in ordinary seasons they are partially retained, and the dormant state quickly passes into one of active growth. These conditions indicate that we should grow the Bougainvillea in a brisk-growing temperature, on the one hand, followed by a decided rest on the other—treatment which experience verifies, judging from the behaviour of Bougainvillea glabra during a series of years. It is grown here in a 20-in. pot or tub, placed on a stone table 2 ft. above the pipes, at the warm end of an intermediate house, the thermometer often falling to 45° in midwinter. It is in autumn one mass of bloom. The entire plant covers an area of 100 sq. ft. With the departure of bright sunlight and the approach of winter, growth reaches a minimum. In January the ripened shoots are pruned to short spurs; after a few weeks more the roots are examined, some new soil supplied, and the stem tied up horizontally near the glass. During the resting period water is not entirely withheld, because I consider the "dry-as-dust" practice injurious to the roots; the atmosphere is also somewhat moist. In March the buds break with renewed energy, root action follows, the vigorous nature of the plant becomes apparent, a fact which appears to me to form the basis on which success or failure, as regards continuous flowering, mainly depends, for if the advancing shoots be not first thinned and afterwards pinched at every lateral, the annual result is an exuberance of immature growths with very little bloom. But let the shoots be kept evenly apart and trained carefully to the wires, as one would do with a Peach tree on the frame method, and the sun will not fail in perfecting the growth, in strengthening the whole plant, and indicating abundance of blossoms. Supplies of water and liquid manure, shading from the direct rays of the sun, frequent syringings, and clean glass are also indispensable to secure good results.—J. S., *Edinburgh.*

Variegated Adam's Needle.—This, the botanical name of which is Yucca filamentosa variegata, is one of the most handsome of fine-foliaged plants. It requires a cool greenhouse temperature and good sandy peat and turfy loam in which to grow. It is not an easy plant to cultivate, but it well rewards the attention it requires. The green-leaved form of the plant is perfectly hardy, and flowers freely when planted in well-drained soil.

Variegated Adam's Needle (Yucca filamentosa variegata).

SUBURBAN GARDENS.

I SHOULD much like to know how it has fared with the amateur gardeners this year, more particularly in the neighbourhood of London, in order that I may compare their accounts with my own experience of this rather disappointing season.

To begin with almost the finest March on record, with regard to sunny days, the spring flowers, such as Crocuses, Primulas, Auriculas, and their contemporaries, were very good. The Almonds were very late this season, mine not coming into blossom before April. By the way, how is it the Almond fruit is not more utilised with us in England? In the softer stage they make a very fair pickle, something like Walnut and quite tender. I have had them made into tarts, which were not bad precursors of Gooseberries. Later on, before the kernel gets too hard, they are much appreciated in Pau, and were selling there last year at 50 centimes the pound. My Almond trees were in blossom with the Pear, which is not of very usual occurrence. The Gooseberries and Currants did not promise very well; there has, moreover, been a great deal of sickly wood to cut out. The blossoming of Apples, Pears, Plums, and Cherries promised great results, but the promise has been terribly nipped. Strawberries were plentiful, but much damaged by wet, and possessed but an indifferent flavour; Raspberries plentiful, but likewise suffered from wet and have damped off. Of the scanty crop of Currants and Gooseberries the birds had the better half, and the branches are now a sad sight, the foliage being entirely eaten up by caterpillar. Apples and Pears, save in one or two instances, *nil.* Tho wood did not ripen well last sunless year; and the branches, which were covered with blossom in May, are stick dry and dead in August. Grapes, outdoor, none. Take it altogether, I think this is the worst year I have had during the twenty years I have inhabited my present neighbourhood, between Wandsworth and Wimbledon. My garden is not extensive, and my principal crops of vegetables are generally Windsor, French, and Scarlet Runner Beans, and the Butter or Mont d'Or Bean—a most delicate and delicious vegetable, not sufficiently appreciated; it should always be served apart from, not defiled by contact with, meat. My first crop of French Beans failed; the slugs and the small birds divided the spoil. The subsequent sowings will not prove quite successful. The Windsor did pretty well. The Mont d'Or promised well, but have run terribly to leaf; the pods are getting on, and, with a continuance of fine warm weather, we shall have a golden crop. Peas, what were left by the birds, turned out well, and I think we shall realise with Salsafy and Leeks. Celery is growing well. Potatoes I did not try this year. Salading I shall hardly try again; it barely pays, as you can buy it so cheap in the neighbourhood of London.

As regards flowers, my soil is not very good for Roses, even with loam added, and the severe cold of last winter destroyed three-parts of them. I have done pretty well with Geraniums—pink, red, and fancies in pots. I planted or potted out from the end of April, beginning on a warm border. Fuchsias are late; some stand the winter out of doors, covered with Cocoa fibre, and are as early as any of them. Heliotrope and Ageratum are late; double Petunias have been very rich, and also the large Delphinium. Of the modern annuals, such as Godetia, Œnothera, Saponaria, which masses so well, Silene, pink and white, the almost forgotten Venus Navelwort, and many others, now failing—that fault of annuals—have repaid me for my trouble, and I hope to have a fine display of Dianthus chinensis. If the canariensis seeds ripen, it will be next year what it was some ten years ago—a weed; while since then I have paid for the seed at the rate of a halfpenny a pip. For many years I did remarkably well with Asters, the French designate so well by the name of Reine Marguerite. For variety, richness of colour, and size, I have never seen finer. I used to buy about ten shillings' worth of seed, sending a little to an old friend, now no more, an enthusiastic gardener. I must confess my Asters cost me a lot of trouble, and were a source of anxiety while I was away to myself and others. Of last year I will say nothing anent these flowers; what I have this season don't look likely to be famous. I am inclined to think the seed has not been so good during the last two or three years. It is not worth while going into more detail. I will just add, it has been a wonderful year for small birds, including thrushes. Now, I like Mr. Turdus Musicus, to see a little of him, and hear him sing. He is quite welcome to take a tithe of my Cherries, with a few over; but when he reverses that order of things, and leaves me barely the tithe, to say nothing of the few over, which I take it are eaten by his cousin Merula, I don't like it. I see them at it now, while I am writing this, in a Cherry tree opposite, protected by an array of standards fluttering in the breeze. In my boy days the thrush (grieve) was quite a favourite *plat* at decent tables in France. Now, I used to have a weakness for a thrush pudding; and if, after a season's fattening on my fruits, a few of these favourite songsters would yield me their carcases for my food, I might think well of that form of reciprocity. As it is, it is all free trade for the thrush, and no protection for me. If I fired off a gun my neighbours, and I have nervous ones—for instance, the two old maids next door—would be alarmed. I might shoot the cat on one side, and frighten the children on the other, which, after all, would be a righteous retribution for

their outrageous disturbance of my dreams and waking thoughts.—W. A. R., in *Field*.

Staphylea colchica.—This is one of the most valuable of shrubs for early forcing that we possess, although it is as yet rather rare. We have seen it shown at South Kensington in early spring by Messrs. Veitch & Sons, of Chelsea, where it was greatly admired for its wealth of ivory-white blossoms. It is propagated by means of cuttings, and likes a warm, light, well-drained soil; and it might probably succeed well grafted on stocks of S. pinnata, the Bladder-nut of our shrubberies. Now is a good time to get plants for forcing into bloom in winter.

ANSWERS TO QUERIES.

2722.—**Rusty Water.**—I take leave to tell you that lead pipes may easily be rendered perfectly safe as water conduits and cisterns also, where water is not impregnated by gypsum or sulphate of lime, by coating them with sulphate of lead, which is insoluble in water pure or containing vegetable acid. This is done by filling the pipes (if laid) with a diluted solution of sulphuric acid in water, one part to ten of water by measure, retaining it in the pipes by plugs to give time for the acid to penetrate to the lead (through any vegetable deposit). New pipes ought to be first subjected to the action of a boiling solution of soda ash to take off any grease in the pipes. For cisterns, new or old, scouring with sand and a strong solution of Epsom salt and sulphate of magnesia, letting the scoured lead dry (white), and rescouring dark parts, first scraping off any dark scales or accumulation, the acid solution is quite the same, but might injuriously act on the hands or clothes of the unskilled operator. The best scouring instrument is a piece of Cocoa-nut husk. If sulphate of lime or any other sulphate but that of lead is present in the water, lead pipes or cisterns are harmless, because the insoluble sulphate of lead limes them from decomposition of the sulphate by the lead. But pure water or that containing vegetable acids in any combination will dissolve lead, which thus becomes a truly dangerous poison to all mammalian animals, not the less so that it may be slow and obscure in its progress to the external symptons of lead poisoning. Leaves falling into leaden water cisterns in London have, by generating acetic (?) acid, photographed themselves in the solid lead in the process of their natural decay by the acetic acid biting away the metal similarly to aqua-fortis in copper etching.—J. B.

2841.—**Houseleeks.**—I think there is no other sort but the one you have got, Sempervivum tectorum, or Common Houseleek, which will succeed well on walls. But in Sedums, commonly named Stonecrops, you may get a good variety, both in plants and colour of blooms, which will grow in such positions you mention. The following are the names of a few that I think will be suitable either in boxes or on the walls or roofs: Sedum album, flowers white; S. anglicum, flowers white or pinkish; S. acre, flowers bright yellow. These rarely exceed 4 in. high. S. reflexum, S. glaucum, and S. rupestre bear yellow flowers, and grow from 6 in. to 1 ft. high; S. telephium (flowers purple) and S. rhodiola (flowers yellow) grow up to 18 in. high. I cannot say where these may be bought; but they grow wild on rocks, mountains, walls, and gravelly places along the sea coast. I have seen some splendid specimens in Lincolnshire and Wales.—J. J. NEWTON.

2828.—**Hibiscus africanus.**—This pretty annual is a little difficult to manage. It is just on the borderland between hardy and half-hardy. In seasons such as we sometimes have when there is no spring to speak of, and cold weather at the end of March is followed by hot weather in April, it would no doubt prove a hardy annual; but in cold, wet seasons, when winter lingers in the lap of spring nearly up to Midsummer Day, the seed rots in the ground, and what does germinate, even in a dry soil, gets on very slowly, and barely justifies its occupation of the ground. I found the best way to manage it was to sow in 7-in. pots in a sunny greenhouse, thinning out the plants to one in each pot, and plant out with balls of earth entire as soon as the weather was warm enough.—J. D.

2842.—**Cleaning Garden Pots Equal to New.**—Hydrochloric acid will burn the hands and clothing; it is also poisonous; it dissolves rapidly both zinc and iron, of which metals galvanised iron is a combination; it has no action upon lead, so that an old leaden cistern would answer to hold it in; any earthenware vessel glazed inside would also suit. If a pan of clean water in which some washing soda is dissolved be kept close handy, the hands could be dipped in that when the soda and acid on the hands could combine to form common salt. A white linen overall could be worn over the dress, and washed in soda and water after using. The hydrochloric acid of commerce is impure, and should not be allowed to stand in a leaden vessel if that is used.—J. D.

2723.—**Plants for Greenhouse Walls.**—I do not think a list of names could be given, as it would occupy too much space. All kinds of stove and greenhouse Ferns and Mosses will grow on such a wall. All the fine-leaved Begonias, of which the B. Rex may be taken as a type, will be at home, as will also such ornamental-leaved stove plants as Fittonia argyroneura, Gymnostachyum Verschaffelti, Sonerila margaritacea, Tradescantia zebrina and T. vittata, and the variegated Grass (Panicum variegatum). Among flowering plants Gloxinias and Achimenes will succeed, as will also many other plants not now referred to.—E. H.

Ivory-flowered Bladder-nut (Staphylea colchica).

2782.—**Caterpillars in Cabbages.**—It is as well to persevere in handpicking the caterpillars from the Cabbages, as those destroyed now will lessen their numbers next year; but when they are so badly infested there is so little hope of making the present crop usable, that I should recommend the Cabbages to be cut and given to the pigs. If the Cabbage stalks are left, and the earth between them stirred up deeply with a hoe and some short manure spread among them, they will break out again, and the next crop, although smaller in size, will most likely be clean and free from insects.—E. H.

2783.—**Caterpillars on Gooseberry and Currant Bushes.**—There is, I think, some confusion about the caterpillars that attack the Gooseberry and their origin. My own impression is that the chief mischief is done by the larvæ of a sawfly named Nematus grossulariæ. The perfect insect or fly measures across the wings when extended about ⅝ in., and the body is about ⅜ in. long. They are gay-coloured insects, having yellow throat with black spots above and below, yellow body, legs of the same colour, and black feet. They have four wings. They hatch two and sometimes three broods in the summer, the last remaining in the chrysalis state all winter, descending and burrowing into the ground beneath the bush, entering the soil from 2 in. to 4 in., according to its firmness. The best time to commence the attack is in winter, by taking 3 in. or 4 in. of soil from under the bushes and replacing it with fresh; by this means many of the sleeping insects will be destroyed. Then again, a sharp look-out should be kept on the bushes in June, when the first insects appear. They lay their eggs on the underside of the leaf, in the hollow places alongside the midrib, and as they are then comparatively few in number may be easily destroyed.—E. H.

2631.—**To Preserve Cut Flowers.**—Put them in a glass and a piece of charcoal in the water, and set the glass on a plate and cover it over with a bell-glass, and put as much water on the plate as will exclude the air, and place it out of the sun. In the case of flowers with loose petals, such as Pelargoniums, &c., a drop of liquid gum dropped in the centre will make them stand much longer than they otherwise would do. To restore faded flowers cut a small piece off the end of the stalk, and dip the stalk in boiling water one minute.—HELP ONE ANOTHER.

2722.—**Impure Water.**—In a reply to this query in number for August 21, it is stated that 300 yards of lead piping would render water poisonous. As this might cause much unnecessary uneasiness to many people, will you allow me to correct this rather too sweeping statement. Rain-water or water containing no sulphates or carbonates in solution will

dissolve lead oxide and become poisonous, but very few spring or river waters are in this condition, sulphate of lime being present in most waters, or in its absence sulphate of magnesia. It has been abundantly proved that one grain of either of these salts in a gallon of water is sufficient to prevent the solution of lead oxide; therefore any water that causes soap to curtle (any hard water) is safe to keep in leaden cisterns, and to run through leaden pipes. The hardness of water before and after boiling is tested by Clarke's process with a standard solution of soap.—JOHN S. LINFORD, F. C. V.

2834.—**Garden Refuse.**—The best way to dispose of all garden refuse when there is not an animal to eat it is to dig a hole or trench 18 in. to 24 in. deep and bury it. Tread it in and chop it up with the spade, and, if possible, pour several buckets of house slops or liquid manure upon it, and replace the earth. In a few days it will settle down. The refuse should not be within 1 ft. of the surface, and when required to plant or sow over it, tread the earth to make it sufficiently solid. The fresher the refuse the better, and if this plan is continually practised, the soil will not only become deepened, but rich.

2578.—**Blight on Asters.**—I shared the same fate as John E. Cheese with my Asters, but have since very effectually cured them by thoroughly mixing 2 lb. of carbolic disinfecting powder (Sharratt's) in a bucketful of water, and allowing it to settle, and when clear syringing all the plants with the liquid. The leaves have now all uncurled and the flowers coming out well. I have also found it a perfect cure for all insects in the greenhouse, &c., and does not harm the plants.—F. A. S.

2783.—**Caterpillars on Gooseberry and Currant Bushes.**—I think the caterpillar mentioned by G. H. Mortimer turns into the magpie, Currant, or Gooseberry moth, one with black spots and blotches on a white ground; the upper wings have also some yellow markings. He had better kill all the moths he sees; it will at least lessen the number of eggs laid. They may be beaten out of bushes, or found resting on railings, and as they have a very weakly flight, may be easily caught. The yellow underwing caterpillars do no harm, as they feed on Dock and other low plants.—R. T. N.

2800.—**Ants in Houses.**—Get a tumbler, put in it two tea-spoonfuls of brown sugar or treacle and quarter tumbler of water; cover it with paper just tied round; make a hole in the middle of paper about the size of a shilling. Place the tumbler in the nest and you will soon find it thick with ants. I have tried this in my greenhouse and garden, and it has proved quite a success.—PH. N., *Jersey*.

2594 & 2597.—**Maggots in Carrots.**—As prevention is better than cure, I will give the method we practice about here, and we grow clean bright red Carrots free from worms, maggots, or scab, and of a large size. On every acre of land sow 12 or 14 cwt. of agricultural or house salt, and not less than 4 quarters (8 sacks), if more all the better, of soot. Mix the two with good earth or other soil (not ashes), and cart it on one month before sowing the Carrot seed, and either drag or harrow it in. My land is common sand, and this year's crop is on the same land as last year, and I have a grand crop of clean, large, bright Carrots. Where none of the above compost is used you can tell to an inch; no manure is required.—G. BROCKLESBY.

2626.—**Potatoes Diseased.**—Mr. Kane's answer to this question seems likely to me to do harm. I have a garden on wet clay, and have tried more than thirty different sorts of Potatoes. I have found burning the clay the best method. This year, after thirteen months' occupation, I have had a splendid crop of Potatoes. The only two touched with disease are Early and Late Rose, both a magnificent crop, especially Late Rose, which has produced about 20 tons to the acre. From one 9-yard row I got 56 lb. But the Roses and Snowflake are not to be depended on. Last year all grown in this garden were rotten. So far the best earlies are Veitch's Ashleaf, Sutton's Ashleaf, Rivers' Ashleaf, Alma Kidney, Golden Kidney, Myatt's Prolific Ashleaf. Paterson's Victoria were also all bad last year, and a great many Scotch Champion which did not eat well. Magnum Bonum, though continually in the water, produced four bushels of sound Potatoes from a bushel set, none bad, and they were all sound for replanting. The only bad Potatoes this year had accidentally been manured with road scrapings. Snowflake would have gone, but I got it up at once, though it was not ripe. Mona's Pride, Fenn's Early White, and Fenn's Bountiful were all good, but being smothered in Brussels Sprouts, did not crop so heavily. Excelsior I can't get at yet, because a neighbouring Magnum Bonum has extended over its protecting haulms. Finally, your correspondent had, in my opinion, better plant Snowflake, the two Roses very sparingly, not too much Champion or Victoria, and place his main dependence on Magnum Bonum for the late; Veitch's Ashleaf, Myatt's Ashleaf, Alma Kidney, and Golden Kidney for the early crop. I have used Amies' Manure for all the Potatoes, and I have not yet heard of any crop, even on favourable soil, which is nearly as good or heavy as mine on wet clay.—POOR CURATE, *Worcester*.

2885.—**Heliotropes and Verbenas.**—Both Heliotropes and Verbenas may be propagated now by means of cuttings, and some may be put in up to the end of September; later than that heat would be needed to induce them to strike; but unless there is heat at command all the winter it is not well to strike cuttings in heat in the autumn. If a few good stock pots of cuttings can be got to stand through the winter plenty of cuttings may be taken from them in the spring. The cuttings now should be made from stout growth that is not flowering, and the soil used should be ordinary pot-soil, having on the surface, one inch in depth, an admixture of one-half sharp, clean sand. When rooted the pots will keep well on a shelf in the greenhouse.

2833.—**Preserving Vegetable Marrows.**—Marrows for preserving may be of any kind, the larger perhaps the better, and should be quite three parts grown, the rind getting set, but not hard. In this stage the fruits are less watery and the flesh more solid. The proportion of fruit to sugar is as 6 lb. of the one to 4 lb. of the other. The Marrows should be peeled and cut into strips, the seed vessels being cleanly removed. The strips are then cut into small squares and put into the stew-pan, the sugar being at once added, as this hardens the pieces and prevents their boiling to a pulp, which is the result when the fruit is boiled half-an-hour before the sugar is added, but that is the plan to follow when jam is needed. About ¾ oz. of ground Ginger is added with the juice of two Lemons and the peel sliced up small. This is put in in the process of boiling. Two hours will suffice for that. It is not safe to trust Marrows to be hung by the stems, but they should be slung up in any dry, safe place.—A. D.

2799.—**Keeping Rain Water Pure.**—If "C. G." will take a trip to this village, Knockholt, near Sevenoaks, he can see "the best means of keeping rain water pure" carried out in the most simple, cheap, and practical manner. As, however, it may be inconvenient for him to pay a visit to this place, I will describe the mode adopted. Tanks of brickwork are built underground capable of holding say from five to ten thousand gallons, or more if required. These tanks are filled with the rain water falling from the tops of houses or other buildings through the ordinary gutters and pipes. A pump is connected with the tank either outside or inside the dwelling-house, and the water is raised in the same manner as raising it from a spring well. There are four tanks in the village for the gratuitous use of the villagers, and every private house has its tank. The water in the tanks being underground is entirely protected from the atmosphere, and is always in the greatest state of purity. Water kept in casks, as "C. G." proposes, very soon becomes putrid, has a bad smell, is totally unfit for drinking, and most disagreeable for any purpose. These brick tanks can be constructed by any well sinker or bricklayer, and are very cheap. It is necessary, of course, that they should be made waterproof by cement, and closed at the dome-shaped top with a close-fitting stone. Knockholt is about 700 ft. above the sea level, therefore the getting of spring water is quite out of the question. The great drawback to this beautiful part of Kent was, till within the last ten years, the scarcity of water, but since the system I have described of utilising rain water was adapted, there is no village of a high elevation in Kent, perhaps in England, that is so abundantly supplied with water, and that of the purest quality. I consume a great deal of water in my garden, more than I did when I lived in the suburbs of London. At that time it cost me at least £4 per annum. There are no water rates, and any person now building is compelled as a condition of granting a lease to construct tanks for the houses. The subject of utilising rain water in the country is a highly important one.—S. L. C.

—— "C. G." had better get one of Lipscombe's filters. Dr. Russell says of them, "Rain-water by Mr. Lipscombe's new process is rendered bright and sparkling as the finest spring water. Alum is said to purify water.—R. T. N.

2892.—**Maréchal Niel Rose not Blooming.**—As your Maréchal Niel Rose has not bloomed yet, although five years old, the inference is, that you have not the Rose at all, but only the stock, perhaps, on which it was worked. In the situation you name it is evident that the plant, doing well as you say, ought to have flowered abundantly. The true Maréchal does not like to be pruned only so far that weak shoots may be taken out now and then, but the strong robust shoots should be laid in to the utmost length, as these ought to produce flowering shoots from every bud the next spring. Perhaps, to make certain whether you have the true Rose or not, it would be well to invite an inspection of the plant by some one who may know, as the fact that it does not flower leads to the conclusion that it is not correct.—A. D.

2898.—**Storing Potatoes.**—An attic would make an excellent place in which to store Potatoes, because it would be cool, and you ought to be able to exclude frost in the winter if you would cover up well with sacks or any impervious material and loose straw. The best plan would be to get either some stout boxes or flour barrels and store the Potatoes in them, as they are then much less exposed to the cold air. One barrel or boxful may be kept in the cupboard for present use as needed. A shed in the garden is not a safe place either from frost or from vermin, but the Potatoes would no doubt be safe enough from frost there until the end of November. Altogether, we prefer the attic for the bulk when stored in tubs or boxes as advised.—A. D.

2827.—**Saving Flower Seeds.**—There are so many kinds of flower seeds, and there are so many diverse methods of dealing with them, that it would be impossible to describe in detail in a short paragraph the entire process of dealing with all. The simple thing to do in relation to common plants is to note when the seed-pods show ripeness, and then gather and expose to the sun until fit to clean out. Brown-paper bags, with the name of the flower seed saved written upon each are very useful with all seeds. It is essential that all should be thoroughly ripened before being put away in paper packets for the winter. Double Stocks do not seed—only single ones. Pinch out the points of the flower-spikes, and leave only a few of the best pods to ripen. The seed then is finer and more likely to produce double flowers.

2823.—**Caterpillars on Geraniums.**—There is absolutely no better method of getting rid of the caterpillars upon Geraniums than by handpicking, and it must be persistently followed up. If the branches of the plants can be well shaken, many may fall to the ground and then be picked up. As the skins of the insects are transparent, and the food they eat is green, their bodies are so much the colour of the leaves, that it is difficult to find them on the plants.

2831.—**Sowing Anemone Seed.**—The months of April and May is the best time to sow seed of Anemones in the open ground. The soil should be well prepared, deeply dug, and manured, and the surface well fined. Draw shallow drills 1 in. in depth and 10 in. apart. Mix the seed first with any fine dry material, that it may be well separated, then sow thinly in the drills, and cover with fine sandy soil. If sown under glass this may be done earlier in the year or even in the autumn, but the young seedlings should be pricked out thinly ere they become entangled with one another.—A. D.

2757.—**Cactus not Flowering.**—Water with boiling water once a week close to the edge of the flower-pot. I have flowers every summer. I had two plants full of beautiful blossoms this season. I water the same when in bloom. Mine are scarlet. Do not be afraid to try it.—LIZZY THOMPSON.

2789.—**Sewage in Gardens.**—Apply a liberal quantity to Cabbages and Broccoli, and upon any waste piece of ground, and if any remaining, dig a hole 2 ft. deep and empty the cesspool into it, and replace the earth.

2799.—**To Keep Rain Water Pure.**—The only way to have good rain water is to run it into a tank underground made of brick, or stone, or cement, to be pumped up and passed through a filter for use—the filter to be kept in a cool place.

2720.—**Thistles in Meadows.**—Pull them up by the roots early in spring or summer when the ground is soft, or keep them cut down continually with a large hoe, scythe, or hook. Gloves required for pulling.

2826.—**Nesida Rose.**—Perhaps a Noisette Rose is meant, sometimes called, Rosa Noisetteia. There are a good many varieties, varying in colour, habit, and hardiness.—J. D.

2842.—**Cleansing Garden Pots.**—Hydrochloric acid will dissolve the zinc off a galvanised pan and spoil it. It will not hurt a stoneware, china, or glass vessel. If there are no cuts on the hands it will not hurt them if a little diluted. It is poisonous.—W. L.

2785.—**Lily of the Nile not Flowering.**—Arums will not flower if kept always growing. About May I let mine dry off in their pots out-of-doors till the foliage is quite withered. Now they have just been repotted, and every bit of old mould shaken out of their roots and replaced with new. I find this an excellent plan, as they flower abundantly.—B.

2745.—**Moss on Gravel.**—Sprinkle it with fine salt in dry weather.

Slugs and Snails.—There is no better way of destroying them than the constant use of air-slaked lime dusted over the ground, and also over the plants which may be suffering from them.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

2924.—**Barren Strawberry Runners.**—In the article on Strawberry cultivation I see it is recommended to take off all barren crowns. Now, may I ask the very important question, When? I went and looked at some plants, and I could not tell which crowns were barren. Of course, in spring, when the plants show signs of blossoming, it cannot be done.—OLD INDIAN. [An experienced eye will tell with tolerable certainty which runners will bear fruit and which will not. The fruitful ones show a plump crown, whilst barren ones have no crown at all, so to speak.]

2925.—**Brussels Sprouts.**—What is the earliest time that Brussels Sprouts can be picked? and when ought they to be sown and planted?—R. H., *Norwood*. [By sowing thinly in September and leaving the plants in the seed beds till February or March, and then planting in good land, Sprouts may be had in October. Sow again in February, March, and April for succession, planting out when large enough.]

2926.—**Fig Trees.**—I have two large Fig trees which are now putting forth a quantity of young fruit which never comes to perfection. What is the cause of this? and what should be the treatment?—W. E. V. [Want of warmth is the cause. Cover the trees up in winter with mats or straw, and you may get some fruits next summer.]

2927.—**Planting Rhubarb.**—I sowed some Rhubarb seed this summer, and the plants are now from 3 in. to 5 in. long. Will you inform me when is the proper time to plant it in the field? and the best ground? as I have some low and moist, and some dry. As it will not be fit to pull next year, can I plant anything that would make a crop between the rows? I propose planting the seedlings 3 ft. apart each way.—F. A. [It would be best to leave the planting till spring, as the seedlings are but small. Plant in the moist land, and well manure it previously. You may grow Spinach, Lettuce, French Beans, or any other low-growing crop between the rows the first season.]

2928.—**Leaf-mould.**—*J. B. H.*—The littery material found under Fir trees is of more harm than good in the garden. Leaf-mould is only good when made from Oak, Lime, Elm, and similar trees. The clearing of old ditches in which leaves have accumulated for years is excellent material.

2929.—**Tomatoes.**—*At a Loss.*—If you have no glass accommodation you can only get plants next year by raising them from seed or purchasing, the latter being the best method, as you may then get plants to put out at the end of May, whereas if you raise them yourself they will not be ready till the end of June or later, and the crop will be late in proportion.

2930.—**Keeping Plants through the Winter.**—I took a house with a large garden last March. I have it fairly stocked with choice Dahlias, Calceolarias, Geraniums, Verbenas, Phlox, and Heliotropes. What ought to be my course now, so as to propagate cuttings of these for next year, as I don't want to buy any more, these having cost me £10? I have no glass; could I keep the old plants indoors through the winter in a warm spare room, or had I better run up a cheap lean-to conservatory, and have an oil stove? If the old plants are not to be kept, how am I to take cuttings? and when and how am I to treat them?—AT A LOSS. [When the tops of the Dahlias show signs of decay, and before very severe frost occurs, lift the roots, cut off the tops to within 1 ft. of the roots, and store the tubers in any shed or room from which frost is excluded, burying them in dry soil, sand, or even ashes, and plant out again in May. Cuttings of Calceolarias may be taken in at the end of October, and struck in firm sandy soil under handlights or in a frame. Cuttings of Geraniums may be put in sandy soil now, and if potted early in October, and placed in a warm window, and kept rather dry at the root, will keep through the winter. The old plants may also be potted and kept in a similar position. Verbenas and Heliotropes may be struck now, or old plants may be cut back, and be taken up and potted in a few weeks, and kept likewise in a warm frame, or even a window. Having no glass, however, your best way would be to sacrifice the few pounds you have spent in these plants, and stock your garden with a variety of good hardy plants, which will cause no trouble but that of planting well, and give a bloom far superior to that obtained from "bedding" plants, at least, under the conditions named above, from spring to autumn.]

2931.—**Moving Fruit Trees.**—When is the earliest time at which fruit trees may be moved with safety?—FANNYCUMS. [You may move them at once. Carefully remove the soil 3 ft. or more round the trees with a steel fork, so as not to break the roots. Have holes large enough to receive the roots without cramping in readiness; do not plant too deeply; 6 in. below the surface will be plenty. After planting mulch with rotten manure, and stake the trees to prevent wind waving. If the ground is very dry, give a good soaking with water.]

2932.—**Plants for Covering Walls under Greenhouse Stages.**—*P. S. O.*—Some of the small growing Ivies, the creeping Fig (Ficus repens), or Veitch's Virginian Creeper (Ampelopsis Veitchi) would succeed.

2933.—**Apple Trees from Branches.**—I have an Apple tree similar to the Burr Knot mentioned in GARDENING ILLUSTRATED of last year, No. 12, p. 189, which I wish to cut down and make several small ones out of it by division of branches. Would you tell me the best time for doing this? also give some limits as to the way of planting them.—FANNYCUMS. [We would cut off a few of the branches just below the root-like excrescences at once, and plant them firmly 4 in. to 6 in. deep in a border of good soil. In February put in the others; you will then see which time is best.]

2934.—**Moving Gooseberry Trees.**—*Fannycums.*—These may be moved at any time from October till February. Cuttings are usually put in in February or March when pruning is being performed, but you might remove some of the shoots, which are not needed when you lift the plants, and insert them in firm soil. The shoots should be from 6 in. to 12 in. long.

2935.—**Indian Acacia.**—I have an Indian Acacia in my garden in Dorsetshire; will it stand the winter out-of-doors, or must I pot it and take it in?—R. C. C. [We presume you mean Acacia arabica. If you have only one plant you had better take it indoors, or give it some protection. If you have more than one, leave one out all winter by way of experiment.]

2936.—**Plants in Cold Greenhouse.**—Will Camellias answer in a glass house not heated in winter in the midland counties? and would any other plant besides Azaleas answer in such a house?—A. K. [Camellias would succeed, so would Azaleas, also the choicer Rhododendrons, Deutzias, Hydrangeas, Fuchsias, some of the hardier Passion-flowers, Jasmines, Clematis, and a host of other fine plants.]

2937.—**Seedling Eucalyptus.**—*J. B. N.*—The seedlings should be potted and kept in a frame or greenhouse all winter, and they will make good plants for putting out in the open border in May.

2938.—**Suckers on Rose Trees.**—My Thoresbyana climbing Rose throws up strong, pinkish, watery shoots, very thick ones, besides long, thin, hard-wooded shoots. Which ought to be pruned off?—A NOVICE. [The strong shoots are the suckers, which should be cut off.]

2939.—**Ivy for Front of House.**—Which is the best and quickest growing Ivy for front of house facing south-west? and when is the best time for planting it?—R. H., *Norwood*. [Irish or the Algerian plant. Plant in September.]

2940.—**Caterpillars.**—My plants are being ruined by swarms of caterpillars, chiefly green, but there are several kinds. They have eaten off a row of Pansies, destroyed a fine Azalea and Harrison's Musk. Indeed, nothing in garden or greenhouse is quite free. What can I do? I have watered with paraffin and water; but this if weak makes no difference; if strong, blackens and destroys the foliage.—A. B. C. [Caterpillars are remarkably numerous this year, and there is no cure that we know of, save that of diligently searching for them morning and evening. A circle of soot put round a plant will keep them off a little, and a good plan is to strew the ground with Cabbage or other leaves of which they are fond, and examine them frequently.

2941.—**Striking Cuttings.**—I have a large bed of Heliotropes and two of Verbenas of different sorts, and I should like to save them by cuttings, but I should like to see some comment on striking cuttings of them.—GEORGE BAILEY. [Cuttings of both Verbenas and Heliotropes will strike freely at this season of the year if placed firmly in well-drained pots of sandy soil placed under a hand-light, or in a frame shaded from the sun. They must be taken indoors during winter. Young-growing shoots only should be chosen as cuttings. If you cut back a few plants they will soon give you plenty of cuttings, and you might also dig such plants up and pot them.]

2942.—**Transplanting Chrysanthemums.**—*G. B.*—Plants of these struck in March last may be planted out now if desired, that is, if they are intended to remain out-of-doors altogether.

2943.—**Pruning Raspberries.**—*Wood B.*—If growing in rows the young canes may be left 12 in. to 15 in. apart. Cut out all the old canes when the leaves begin to fall. The side shoots of the young canes, if any, may remain.

2944.—**Plants in Cold Frame.**—I have just completed a cold frame, 7 ft. by 4 ft. 6 in., facing south, consequently it gets a good deal of sun. My garden is just on the outskirts of a midland town. I should be glad to know the names of any plants I can keep in it during the winter, and so give more room in a small greenhouse.—AMATEUR, *Derby*. [If you will state what plants you have we can tell you if you can winter them in the frame.]

2945.—**Wintering Pelargoniums and Carnations.**—Would seedling Pelargoniums and Carnations be likely to do well through the winter if kept in a rather draughty living room?—INDOCTUS. [They might exist; they would not be likely to do well.]

2946.—**Sowing Annuals.**—Is it well to sow half-hardy annuals generally, and Phlox Drummondi in particular, in the autumn?—INDOCTUS. [Certainly not; sow hardy annuals in September, but half-hardy ones would be killed.]

2947.—**Charge of Dishonesty against Advertisers.**—I wrote on the 29th of April, 1880, to a person advertising in GARDENING for a packet of seed, for which I enclosed thirteen stamps, and I received no answer. I wrote again about three weeks afterwards, and still received no answer. Can you give me any reason why a man should publish his name in your paper to deceive the people?—THOMAS CLARK. [You do the person to whom you sent for the seeds a gross injustice. The fault lies in you not sending to him your correct address. We have in our possession letters which prove that the seed was sent to you and your letters answered, but were returned through the Dead Letter Office. If you will send us your correct postal address, you will doubtless get your seeds and further explanation.]

2948.—**Emptying Cesspools.**—Is there any way of preventing a smell from the contents of a cesspool previous to spreading it over land? The land in question is in the centre of a town, and I am told that the sanitary authority could attack the owner if there is any smell, which there would be for a day or two after the contents of the cesspool were pumped out and spread over the kitchen garden and fields.—S. K. T. [The contents should be mixed with dry, finely-sifted soil previous to being carted away. If peat soil all the better. Have a large heap and make a basin in the centre to hold the sewage, throwing over it and also in the cesspool a few shovelfuls of dry earth as the work proceeds.]

2949.—**Planting Apple Trees.**—I want to shade a window from the sun by means of an Apple tree. What sort would be the best, and the time for planting? The soil is of a clayey nature.—F. BARTON. [Cox's Orange Pippin, Wellington, and Tower of Glamis are good kinds. Plant in September or October.]

2950.—**Canary Creeper not Flowering.**—*Newt*—Being in a glasshouse, you must give it all the air you can, and no doubt you will have a good bloom by and by. The plants were probably planted late; they are, however, sure to flower.

2951.—**Planting Passion-flowers.**—*H. B.*—You may plant at once if you procure good strong plants, but it would be better to wait till April or May, as then the plants get established before the following winter. We are, of course, assuming you mean the hardy Passion-flowers to be planted out-of-doors.

2952.—**Giving Azaleas Fresh Soil.**—*A. E., Guernsey.*—Azaleas are best repotted when they go out of flower and new growth commences.

2953.—**Begonias not Growing.**—*A. E., Guernsey.*—In spring you should shake the soil from the bulbs, and pot them in fresh soil, and in pots just large enough to admit them. Place them in a warm part of the greenhouse and keep moist. Shift into larger pots when they get nearly root-bound.

2954.—**Fig Tree on South-east Wall.**—I have a plant well established and which has made good wood, and having now at every joint, or rather at the base of every leaf, a small Fig in regular gradations of size, from a Cobnut to a small Pea. Should all these be cut away?—C. E. [Leave them on the plant. The largest will probably drop off in spring, but the small ones may ripen next summer.]

2955.—**Soil for Geraniums.**—What is the best compost for Geraniums from cuttings just nicely rooted?—FIDO. [Sandy loam without manure.]

2956.—**Prolonging the Blooming of Fuchsias.**—Having a splendid show of these plants, I am desirous of preserving them as long as possible. They are in a properly built and heated conservatory. Several of the buds drop each night; they are watered daily. Can you advise me how to prolong their blooming? [Give plenty of air, water thoroughly when the plants require it, not daily whether they want it or not, and give a little weak manure or soot water, or a pinch of Clay's Fertiliser, or Standen's Manure occasionally. If you cut back the shoots of a few of the plants they will break into fresh growth, and give a good bloom later on.]

2957.—**Strawberries for Succession.**—I should feel obliged if you would tell me the best sorts of Strawberries to plant, in order to secure as long a succession as possible?—J. E. VAUX. [The following are all excellent sorts, and will give a long succession of fruit. They ripen in the order named: 1, Keen's Seedling or Héricart de Thury; 2, President; 3, Sir Joseph Paxton; 4, Sir Charles Napier; 5, British Queen (if your land is stiff loam); 6, Elton Pine.

2958.—**Blighted Grapes.**—*Mr. C. Colne.*—Your Grapes are mildewed. There is no hope of saving them this year. We would advise you to cut them off at once, and dust flour of sulphur on the leaves which are affected, and give all the air possible. The cause of the mildew is keeping plants in the house, and too moist a temperature. Next summer put the plants outside, and maintain a drier atmosphere in the house, and give more air during fine weather. When wet weather sets in, use a little fire-heat, giving air at the same time.

2959.—**Heating Greenhouse.**—Having built a small lean-to greenhouse, 19 ft. by 8 ft., against a wall, on the opposite side of which is the kitchen fire, could you tell me the best means of heating the same? Is there any simple means of heating it from the kitchen fire? If so, what sort of grate is required?—SCOT. [If you have a kitchener the boiler of which is fed from a cistern, you can easily have pipes attached to heat your greenhouse, but if only an ordinary open grate with boiler fed at the lid as required, your best method would be to have a stove for the greenhouse, unless, indeed, you care to have a kitchener put in.]

2960.—**Gloxinia Dying off.**—I had a beautiful blue Gloxinia from a nursery, and very soon after I put it in my conservatory it faded and drooped. I have repotted it and given it plenty of water until the last seven days, when I forbore. What is the cause?—FIDO. [You repotted and then killed it with water.]

2961.—**Calceolaria Drooping.**—Why does my Calceolaria droop? It has plenty of water, and is in a good conservatory.—FIDO. [Careless watering probably.]

2962.—**Green-fly and Paraffin.**—Some seedling Cinerarias had the green fly. I therefore put on them some paraffin and water (a wineglassful of the former to 2 gals. of the latter). The green fly are most effectually killed, and so also are the Cinerarias. Could you tell me where I have made the mistake?—G. E. T. [In not keeping the liquid well mixed, and using it too strong on young and tender plants.]

2963.—**Gloire de Dijon Rose.**—A large Gloire de Dijon against my house has run up to head about 10 ft. high, and bare at the bottom. Would it do to cut it down? If so, when is the time, and how near the ground ought it to be cut down?—G. E. T. [We should not advise you to cut it down if you want it to bloom.]

2964.—**Violas Cut Down.**—Will Violas that have been flowering all the summer, if now cut down, make as good a show next year as plants fresh struck?—G. E. T. [Yes, but the flowers will be smaller.]

2965.—**Outside Window Gardening.**—In a recent number there was an article on outside window boxes. We have had four sets of boxes ordered to keep up successional bloom. Will you kindly state which are the best seeds to sow for that purpose? We have no frame, and our back garden is nearly south. The boxes will be in windows facing north-east.—A SUBSCRIBER. [Plant one set with Pansies, double Daisies, Aubrietias, Violets, Forget-me-nots, Primroses, and other spring blooming plants. Another set sow with seeds of hardy annuals, such as Candytufts, Nemophilas, Collinsia bicolor, Godetias, Limnanthes Douglasi, &c. Keep the other two sets till spring, and sow one with annuals similar to those mentioned, and plant the other with Lobelias, Ceraniums, &c.]

QUERIES.

2966.—**Ivy for Fernery.**—Will any reader kindly give me the name of an Ivy most suitable for covering a wall in a Fernery?—C. O.

2967.—**Growing Bulbs Indoors.**—Will some one please tell me the names of the best six single Hyacinths for growing in glasses for show? also the best six double Hyacinths for growing in pots in a house where gas and fires are used constantly? also the names of a few bulbs which could be easily grown in the house, and their treatment?—ROSS.

2968.—**Plums Cracking.**—I have a very fine Plum tree, the name of which is doubtful, though I think it is called the Denbigh Seedling. It bears large, round, pinkish-red fruit, frequently weighing 3 oz., but just when the fruit is ripening it invariably cracks, and exudes a kind of gum. Can any one give me the reason, and any preventive?—J. B. H.

2969.—**Plants under Trees.**—What should I sow either now for spring, or in spring, to do well under trees? The bed has a southern aspect, but is a good deal overhung, and in wet weather the trees drip on it. It has a good slope; the soil rather heavy. Also to grow on each side of a drive running south, but trees on each side meeting overhead in places. I should be satisfied if I could get a border, as there are Laurels, &c., down each side.—BEGINNER.

2970.—**Damage to Garden.**—Can any one tell me the law as regards the following: The owner of a stable and garden lets the stable to A— and garden to B—, no fence between stable and garden. The horse belonging to A— gets out and runs over the garden and eats a great portion of crops and damages the rest. Can B— claim damages of the owner of property for not having a fence? or must he claim it of A—?—PAINTER.

2971.—**Wintering Coleuses.**—I have some Coleus cuttings which I wish to save through the winter. Will any reader suggest a plan whereby I can save them? My greenhouse is not heated enough for them.—ENQUIRER.

2972.—**Cucumbers not Fruiting.**—I had a Cucumber plant in a large box trained up a pole to the roof of a greenhouse, and is healthy looking, but most of the buds are minus fruit, and what fruit there is only attain the size of 1 in. long, then turn yellow, and finally drop to the ground. Can any reader tell me the cause? Temperature of house 65° to 80°.—ENQUIRER.

2973.—**Cactus Cuttings.**—Will some one inform me how to treat my Cactus cuttings? They were put into half of a small tub last autumn, and they are now sending out side shoots. Do they require to be potted off singly now? and what temperature do they require through the winter? Also what kind of compost will they thrive best in? I should like them to bloom next summer if possible.—ENQUIRER.

2974.—**Drying Flowers.**—I am anxious to make a collection of flowers from each place I visit; will some one kindly inform me the best way of pressing and drying them?—JANET.

2975.—**Feeding Pumpkins.**—Pumpkins are fed with milk by the Dutch to increase their size; can any one tell me the proper *modus operandi*? I have failed with Vegetable Marrows, Mammoth Gourds, and Turk's-heads. I fed them through the stalk with a glass tube. They grew larger, but rotted inside?—T. C. P.

2976.—**Drying Fruit.**—Will some one be kind enough to say how this is done? and what sorts of Apples and Pears are most suitable for preserving by the drying process? Last year (Aug. 16, 1879, p. 503) "J. L." speaks of it being done in ovens in a very simple way; will he kindly give a description of them, or say where they are to be obtained if of any particular make?—OLD SOLDIER.

2977.—**Cucumbers Being Eaten.**—Could any reader inform me what is the matter with my Cucumbers? As soon as the fruit makes its appearance, it seems to be eaten off, as I find them upon the bed eaten through about the middle; the plants are to all appearance in a robust healthy state and free from insects?—PLUMBUS.

2978.—**Water Bouquets.**—I should be much obliged if some one would tell me how to make a water bouquet, and with what flowers?—SYBIL.

2979.—**Moles in Gardens.**—We are very much troubled with moles in our garden. Can any one tell me how to get rid of them? I have tried to trap them, but cannot succeed.—WM. SYDENHAM.

2980.—**Gloxinias for Autumn Flowering.**—Will any reader kindly inform as to the treatment of autumn-flowering Gloxinias? I am at present growing them in a frame, which I heat at night with a small paraffin lamp. Would they grow in a room heated in the same way better? I open the frame to admit plenty of air. Please say if this is the proper mode of treatment.—R. POLLARD.

2981.—**Hydrangeas not Flowering.**—Can any reader tell me the reason why my Hydrangeas have failed to flower this year. I live in the Isle of Wight, where they grow to large bushes, and I have three or four of such bushes in my garden. Last year they were one mass of bloom, but this year, though the foliage is in splendid condition, and the plants apparently most healthy, only one bloom has shown itself. The gardens round mine are filled with fine blooms, hence the weather can have nothing to do with the matter. The plants are of course cut back every year after flowering.—SUBSCRIBER.

2982.—**Berry Bugs.**—Is there any cure for the minute scarlet insect called in this part of the country the berry bug? Several members of my family are very painfully afflicted by its attacks, and we have tried many remedies, but hitherto unsuccessfully. I should be greatly obliged if any reader would kindly answer this, and give any remedies they may know of to alleviate the pain these creatures cause. They are got either by going through long Grass, or from the garden shrubs, &c.—THOS. LOCKHART.

2983.—**Propagating Clematis Jackmani.**—Will any of your readers tell me the best method of propagating Clematis Jackmani? I have a large plant on a wall in full bloom, but do not see any growing ends. Will they come after blooming?—J. S. L.

2984.—**Begonias Going to Seed.**—Can some reader tell me why my Begonias form large seed vessels before they come into bloom, and then only last a day or two in flower? It is only lately I noticed it on some of the plants.—GLENVAR.

2985.—**Rose Shoots Nibbled Half Through.**—I am obliged to "R. T. N." (Ans. 2719) for his suggestion, but it does not apply. Neither leaves nor buds are bitten at all; they droop and wither after "their stems" are so much eaten away. Plenty of centipedes and black beetles infest the soil, but "H. B." is not fortunate enough to detect the offender in the act, or to entrap them wholesale.—H. B.

2986.—**Potatoes in Pots.**—Will some reader of GARDENING experienced in growing Potatoes in pots kindly give a few instructions as to the best sorts to grow, the time to plant them, the best soil to use, and any other information it may be necessary to know for their successful cultivation? and also whether with proper attention and a good house to grow them in they may be considered a remunerative crop to grow?—A. P., *Maidstone*.

2987.—**Russian Violets.**—To make Russian Violets blossom profusely during the autumn and spring, I have heard that it is well to take the plants up and starve them during the late summer. Will any one who has had experience in so treating the plants tell me how and at what time this is best done? My Violets (Russian and variegated blue) have abundant foliage, but produce but few blossoms.—L. R.

2988.—**Fuchsia splendens.**—What shall I do with a young plant of Fuchsia splendens? I bought a rooted cutting which grew vigorously for a time, then the leaves began to fall off, and it grew straggly and weak, and has not bloomed. A young cutting from it has gone just the same; it is in a cool greenhouse? Is it better to dry Fuchsias off when done blooming? Those I dried off last year have bloomed too late, and some have not bloomed at all.—A LEARNER.

2989.—**Plants for Frames in Winter.**—I have two frames, one of which has had Cucumbers in it all the summer. Can any one suggest what would be best to plant to succeed the Cucumbers? The other frame is new, and I wish to preserve cuttings of flowers in this for the winter. Which would be the best way to make up the bed? I have some fresh manure. Also will a concrete bottom be objectionable?—C. H. D.

2990.—**Botanical Drying Paper.**—Drying wild flowers.—Will "Ped" (2296), in his recommendation in your issue of July 31 last, kindly state where botanical drying paper is procurable? Is it not simply the rough thick drying paper used in ordinary letter coping books? Will it also preserve the colour of the flowers?—NOVICE.

2991.—**Vine Suddenly Dying.**—I have a Vine (Pearson's Golden Queen) which has been planted four years, and last year it pushed to the top of Vinery (18 ft.), but we had an accident last winter and broke it down 8 ft.; but it has again pushed to the top good strong wood, and has about 4 lb. of fruit on it just changing colour, but about three weeks ago it began to flag, and now I am afraid it is quite dead. The border is outside, with a small one inside in which the Vines are planted. I have watered the inside border with manure water. There is a stack pipe just over the place where the roots should enter the outside border, and I am afraid the water washed over these from the heavy storms we had the week previous to the time that I first noticed it. Would that cause so sudden a death? The other Vines have each a good crop, and are looking well.—J. CARTER.

2992.—**Hardy Edging Plants.**—Can any one give me a list of edging plants for beds that will be permanent? Are Sedums and Stonecrops quite hardy? and would this be the time to plant them?—EMMA.

2993.—**Blooms of Begonias Falling.**—My Begonia showed well for flowering, but just as the buds were about to open all the leaves and buds fell off, leaving the plant quite bare. Last season it was the same. It had previously flowered well. Can any one tell me the cause, and suggest a remedy?—C. H. E.

2994.—**Preparing Ground for Potatoes.**—I have a small piece of ground (about 30 ft. by 12 ft.) in my garden on which I want to grow some Potatoes. The soil is of a clayey nature, and I have been growing Cabbages and Peas on it. Will some one kindly inform me what kind will be best to put in (a very early one), and when? Likewise, can I use the ground for anything else before the time? If so, what? Or would it be better to let it lay the winter turned out?—H. BARTON.

2995.—**Peaches and Nectarines Failing.**—My Peaches and Nectarines in an orchard house have done very well for some years, but this year the leaves are withering and falling, and the fruit drying up and coming to nothing. What is the cause? I can only think of one cause: they have been watered with manure water, but this has been done for two or three years, the same as to the Vines in the other part of the house, which are doing very well.—J. D.

2996.—**Striking Roses in Water.**—Will "S.M.M.," who suggests an easy way of propagating Roses from cuttings, kindly say how he pots his cuttings? I have many times obtained rooted cuttings of Roses in bottles of water, as he says, but have never succeeded in establishing such cuttings in pots afterwards, though by reason of the tenderness of the roots the greatest care has been used in potting. The roots produced by means of the water have never, in my case, taken to the other element—earth.—W. H. M.

2997.—**Nasturtium Pods for Pickling.**—Can any one tell me if the seed pods of the dwarf Tom Thumb Nasturtium may be safely used as a pickle in the same way as those of the larger or climbing kind are?—SUBSCRIBER.

2998.—**Cankered Roses.**—I have a large Maréchal Niel which has a canker in the back close to the root; how can I best get rid of it? The tree used to bear between 200 and 300 blooms, but now bears scarcely any.—T. C. P.

2999.—**How to Improve Lawns.**—I have a newly-made lawn; in some places it is sunken and almost bare. Can any one tell me how best I can improve it?—A LEARNER.

3000.—**Gloxinia crassifolia.**—Having a number of seedlings of the above, I shall be glad to be informed as to their future treatment, including soil, &c. They are now about 1 in. in height.—SEVENOAKS.

3001.—**Carnations and Picotees.**—I am very anxious to grow some good Carnations and Picotees which will bloom next spring in a conservatory. What would be the best way to set about it? I have sown some Picotee seed and struck several cuttings of Carnations, but I should like to know what kind of soil they like best: whether I must keep them in a hot or cold frame or greenhouse during the winter. Can I procure a yellow or lemon-coloured variety? I have now only red, white, pink, and pink edged with white.—J. P.

3002.—**Ageratums not Flowering in the Usual Way.**—I am rather fond of these as a plant for the mixed border, but for the last two years I have not had them in their true character. They turn out a dense mass of leaves almost branchless; the bloom came late, and the little there is of it are without stems, and buried close to the leaves. Can any one tell me the cause of this? Other plants, such as Geraniums and Verbenas, have come out all right in the same beds.—SUBSCRIBER.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, doz	..	..	0	3	0	0
Arum Lilies	..	..	0	0	0	0
Bouvardia	..	..	1	0	3	0
Carnations, doz bun	..		4	0	9	6
Carnations (Tree) doz			1	0	3	0
Cornflower, doz bun	..		3	0	6	0
Eschscholtzia	..	..	2	0	6	0
Eucharis, doz	..	..	5	0	6	0
Ferns (various) doz bun			4	0	9	0
Fuchsia	..	..	..	4	0	6	0
Gardenia, doz	..	..	3	0	9	0
Heliotrope, doz bun	..		0	0	6	0
Mignonette, doz bun	..		2	0	6	0
Myrtle, doz bun	..	..	0	0	6	0
Pelargonium(znl)dz bun			3	0	6	0
,, (large flower)	..		6	0	12	0
,, (double)	..	..	6	0	12	0
,, (Rose-scented leaf)			3	0	6	0
Phlox, doz bun	..		6	0	9	0
Pinks	..	..	..	4	0	9	0
Primula (dbl) dz sprays			0	9	0	0
Roses, doz bun	..		4	0	9	0
Stephanotis, doz trusses			3	0	6	0
Sweet Peas, doz bun	..		3	0	6	0
Sweet Sultan	..	..	4	0	6	0
Tropæolums	..	..	1	0	3	0
Tuberoses, doz	..	..	1	0	3	0

Pot Plants.

Arbor-vitæ (golden), dz			9	0	18	0
,, (common)			6	0	12	0
Aralia Sieboldi, doz	..		12	0	30	0
Begonias, doz	..	..	6	0	12	0
,, (fine-foliaged)	..		6	0	12	0
Berberis	..	..	..	4	0	9	0
Bouvardias	..	..	12	0	18	0
Clematis	..	..	9	0	19	0
Crotons	..	..	12	0	42	0
Dracæna (green)	..		12	0	30	0
,, (variegated)	..		18	0	60	0
Echeverias	..	..	4	0	6	0
Euonymus	..	..	6	0	12	0
Euonymus (variegated)			8	0	18	0
Ferns	..	..	..	6	0	18	0
Ferns (small) per doz			3	0	5	0
Ficus elastica, doz	..		18	0	60	0
Fuchsias	..	..	..	6	0	12	0
Gardenias	..	..	18	0	36	0
Mignonette	..	..	4	0	6	0
Nasturtiums	..	..	3	3	6	0
Palms (large) pair	..		15	0	42	0
Palms (small) doz	..		18	0	60	0
Pelargoniums (scarlet)			2	6	9	0
,, (double)			6	0	13	0
Selaginella	..	..	3	0	4	9

Fruit.

Apples (culinary) bush			4	0	5	0
Grapes (English) lb	..		2	0	5	0
Lemons, box	..		30	0	35	0
Oranges, 100	..	..	8	0	16	0
Pears (dessert kinds), dz			2	0	3	0
Pine-apples (St Micls) ea			5	0	15	0
,, (English) lb			2	0	4	0

Vegetables.

Beans (French), lb	..		0	2	0	6
,, (Runner)	..		1½	0	0	2
Cabbages, tally	..		1	0	2	4
Carrots, doz bun	..		4	0	5	0
Cauliflowers	..	..	0	4	0	6
Celery, bundle	..	..	1	0	2	0
Corn Salad, half sieve			0	0	2	0
Cress (plain), doz pun			0	0	2	0
,, (Watercress) dz bun			0	9	1	0
Cucumbers, doz	..		2	6	5	0
Endive	..	..	..	2	0	3	0
Garlic, lb	..	..	0	0	0	6
Horseradish, bun	..		3	0	5	0
Lettuce, score	..	..	0	4	10	0
Leeks, doz bun	..		1	6	3	0
Mint	..	..	..	4	0	0
Mushrooms, pottle	..		1	3	1	9
Potatoes (rnd knds) ton					100s. to 200s.	
,, (Kidney), ton					120s. to 180s.	
Parsley, doz bun	..		2	0	4	0
Radish, doz bun	..		1	6	3	0
Spinach, bus	..	..	0	0	2	0
Turnips, doz bun	..		4	0	5	0

Gooseberry Caterpillar.—I have heard that in Sutherland they bind branches of Broom round plants attacked with caterpillars, and it quite banishes them and keeps whatever plant it is round clear. Will some one try this simple remedy and report the result?—AILENROC.

GARDENING
ILLUSTRATED.

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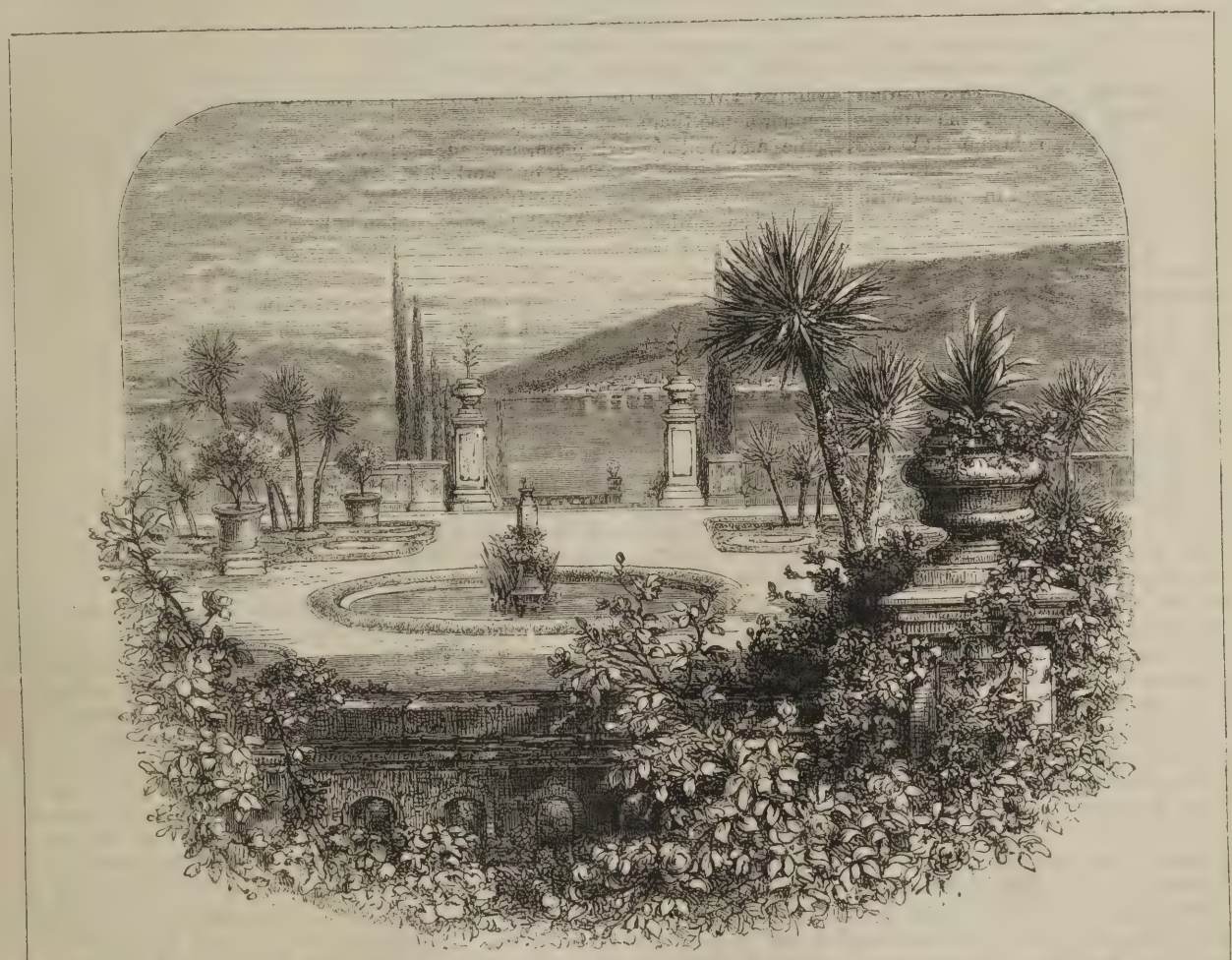
GARDENS IN HOLIDAY TIMES.

BY A LADY.

COWLEY, writing to John Evelyn, whose literary fame rested at that time on his recently published "Sylva; or, a Discourse on Forest Trees," says:—"I never had any other desire so strong, and so like covetousness, as that one which I have had always—that I might be master at last of a small house and large garden, with very moderate garden, among weeds and rubbish, and without that pleasantest work of human industry—the improvement of something which try—the improvement of something which we call (not very properly, but yet we call) our own." This is a most natural wish, though I must say that, perhaps, the pleasantest hours of my life have been spent in the gardens of others. There one has none of the cares and responsibilities which a sense of ownership brings, no regrets over be turned into an exhibition ground for tricolored Geraniums, Echeverias, Aloes, and other things well enough in their places, but which offered no real satisfaction to a true lover of Flora. These thoughts sometimes interfere with the enjoyment of one's own garden; but it is far otherwise when, either alone, or in pleasant and congenial company, we spend a quiet hour in the garden of a friend; memory recalls many



A GARDEN IN LAKE MAGGIORE.

conveniences joined to them, and there dedicate the remainder of my life only to the culture of them and the study of Nature. But several accidents of my ill-fortune have disappointed me hitherto, and do still, of that felicity; for, though I have made the first and hardest step to it by abandoning all ambitions and hopes in this world, and by retiring from the noise of all business, and almost all company, yet I stick still in the inn of a hired house and the blindness which caused us to plant that Cupressus Lawsoniana in that barren spot where it could not possibly do well, no lamentations over the careless manner in which the gardener transplanted that Magnolia, so as to render its flowering during the summer more than doubtful; no vexations, no remorse at having been persuaded into allowing the greater part of a garden which might have been a paradise of sweet-scented plants and old-fashioned flowers to "times of refreshings" like these. I speak not now of the stately pleasure grounds, when, as the learned author of the "Anatomy of Melancholy" says, you may "walk amongst orchards, gardens, bowers, mounts, and arbours, artificial wildernesses, green thickets, arches, groves, lawns, rivulets, fountains, and such-like pleasant places, or disport in some plain or park;" and then he proceeds to describe the Prince's garden at Ferrara, and

quotes S. Bernard's account of the garden of his monastery. Very fine on paper are these descriptions, but, as when Don Pedro wooed the fair Beatrice, and prayed her to take him for her husband, she replied, "No, my lord, unless I may have another for working days, for your grace is too costly to wear every day," so I turn from these and dwell with a feeling of relief on the recollection of some homely spot, where old-fashioned flowers thrive well, and you can pluck them to your heart's content; where trees and shrubs (planted in no formal manner) cast a peaceful shade on grassy walks, where you are not tormented by thinking you are called upon to admire something; here nothing is obtrusive, and some feeling of the repose of Nature steals over you as you walk alone.

There is such a garden (probably one among numberless others) on the borders of the Mediterranean Sea. It is in a fair Italian town, as yet unhaunted by tourists. Cook is a power still unknown. No one speaks English. There are no amusements in the proper sense of the word—no casino, no theatre, no gaming tables. This garden stands "somewhat back from the village street," the Strada Borgo Marino. On one side you approach it by an Olive wood, whose shaded turf is covered in spring with scarlet and lilac Anemones, the fragrant Narcissus, and the star-like flowers of the white Periwinkle. As you enter the gate out of the wood, you traverse a long avenue of Orange trees, covered with ripe fruit, with here and there a gigantic Palm. The Oranges are for the most part Mandarins; the trees are beautifully shaped, the glossy green of the leaves forming a fine contrast to the golden fruit. Leaving the avenue, you pass into the garden proper, which is not large in extent, though the tall trees and vegetation deceive the eye as to its size.

There are no formally planted beds, but Roses, Stocks, Violets, and Mignonette grow here in what the Irishman called "nate confusion." Here a Palm with twisted stem and yellow Dates hanging in clusters shades a rustic seat, while groups of Aloes fill up the ground below. Stocks and Roses were the chief flowers in the month of March; but Violets, particularly the light double ones, were most fragrant. There were numerous patches of Pinks, while Virginian Stock and other pretty annuals made the odd corners of the garden gay. Here and there grow large Oleanders, not, however, yet in bloom. There are many fan Palms, with their broad-spiked leaves, and other fine trees, principally the Caroub, with flowering shrubs that were quite new to me, and of whose names I am ignorant. On one side is a rockery covered with Mosses and large plants of the Maidenhair and other Ferns. The "old-fashioned country seat" has likewise its covering of creepers, Passion-flowers, Gloire de Dijon, with other Roses, interlaced with the branches of a luxuriant Vine. Such was the garden in which the writer spent many hours in every week this spring entirely undisturbed. No gardener was ever to be seen, and the distant hum of life from the town some way off hardly broke the stillness. No one ever appeared to walk there; the silent inhabitants of the villa seemed to have left this garden to take care of itself. It was like "the land where it was always afternoon." The ground gradually rose from the gate you entered until you reached the other door, which led into the upper part of the town, and opened into the Strada Romana. From this spot you looked down on the sea, though too far off to hear anything of the fall of its waters beyond a distant murmur. Far away to the west the snowy peaks of the Maritime Alps seemed to touch the clouds, while below white villages nestled on the hillside amid the dull green of the Olive woods; here and there a tall Campanille broke the line, and sometimes a distant bell was distinctly heard in the quiet air; on the east a tall cliff and a rocky shore, with here and there shining sands, with picturesque fishing boats, the gay-coloured dress of the fishermen adding colour to the scene.

After all, the garden which I remember with the most pleasure is one in a midland county. No particular beauty marked the situation—no mountains, no river, no very extensive prospect. It occupied the slope of a hill, and from the top, where "the swallows twittered from the straw-built" summer-house there was a lovely view of a fertile and well-wooded plain, and in the far distance the long line of Yorkshire hills preserved the landscape from monotony. The garden was about $1\frac{1}{2}$ acres in extent; part of it was given up to vegetables, and on the south side the wall was covered with well-trained fruit trees —Peaches, Nectarines, Apricots, Pears, and Plums. I never saw anywhere finer crops than those produced here. No pains were spared to render this little spot not only pleasant, but exceedingly profitable. But I am speaking of things as they were twenty years ago, and the science of gardening has made great progress since that time. The north wall, to which Morello Cherry trees were trained, divided the garden from a large orchard; all the length of this wall was a border, full of "April's first-born flowers"—Violets, Primroses, and Lilies of the Valley. Here they flourished, for they were not disturbed; from year to year they went on bearing masses of flowers, for it never occurred to the gentle and bookish master of the old house to think of allowing them to be dug up to make room for modern favourites. He would as soon have thought of sending his pet copy of Pietro della Valle's works to be divested of their old Italian binding and re-clothed in modern dress as of allowing one of his Lilies to be moved. True, he was no botanist, and hardly knew the Latin names of his plants, but he loved them well. How often have I seen him, with some ancient folio in hand, treading the Grassy walks, ever and anon stooping to pluck a flower, and lay it for a mark in "the chronicle of wasted time."

Many a discussion had he with the old gardener, who treated him with reverence, excepting when he ventured to differ from him on some point connected with gardening. "Rakes" was a thoroughly practical man; little book learning had he, and made awful blunders in most of the names of his plants; not only did he mispronounce them strangely, but he went out of his way to write them as unintelligibly as he possibly could. Some of his mistakes were amusing. "Rakes, I do wish you would label these new Roses."—"Ay, ay, sir; I'll libel them."—"Rakes, what do you call that fine shrub?"—"Why, master Duke, your grandfather do say it is a Jupiter tree" (Juniper).—"Rakes, it is such a pity you are a Methodist; now, if you would go to church you would hear such music. What an anthem we had the last time grandfather preached in Aldwark church."—"Nay, nay, sir; I don't think nowt at all o' your hanthems; they're all backards and forrards, and up the middle and back again, and when you think you've done wi' 'em they just sets off, and begins all over again. I can't abide 'em. Gi' me a good ranting hymn and have done wi' it. Its just as if i'stead o' sowing these 'ere Peas, I wor to spend my time dancing backards and forrards on a Cabbage leaf." But Rakes was well up in the practical part of his work; how proud was he of the part of the garden specially given up to Roses and other perennials. From the straw summer-house, a long grassy walk, shaded by Nut trees and Portugal Laurels, whose branches formed an arch, led down hill to the large Grass plot in front of the old house; what a walk that was! The July sun could hardly penetrate the thick foliage overhead; the path was wide enough to allow of rustic seats being placed at intervals; and here, if you strayed in on a fair summer afternoon, you would find the master smoking a quiet pipe, and always ready to greet a friend.

On each side of the walk grew masses of Roses, Pinks, Carnations, Canterbury Bells, Phloxes, with beds of Stocks and Mignonette. The scent was something to remember. Beyond these, in spring, towered tall Lilacs, Laburnums, Snowballs, and Syringas. The large Grass plot was not cut up into beds, but on one side, not far from the south walk, Apple trees, trained as espaliers, divided it from the border given up to the wall trees, while in a quiet corner there was an arbour formed of a carefully-trained Jargonelle Pear tree. It was fitted up with seats and a table; many were the luncheons and teas which took place here.

The Grass plot was a carpet of velvet, soft and mossy, and always beautifully kept; it sloped almost down to the house, only divided from it by a broad paved walk. The house itself was of the time of Queen Anne, and not remarkable for any beauty; but Nature, pitying the poverty of art, had clothed it in a lovely dress of climbing Roses, Jessamines, and Honeysuckles. They nearly covered the front which opened into the garden; they garlanded the old windows, peeping into the quaint low-ceiled rooms, and filling them with perfume. A rustic porch protected the door; on each side of the porch were three shelves, which were filled in summer with pots of Balsams, Musk, and a trailing Campanula, whose pale blue flowers, hanging from the lowest shelf, touched the ground. Even early in spring there were Crocuses, Snowdrops, and Hyacinths, with other children of Flora who "come before the swallow dares." Such was a garden in the Midlands some twenty years ago, but who can arrest "Time's thievish progress?" After an absence of fifteen years in a distant colony I returned to England, and hastened to re-visit the spot I had so often seen in my dreams. Sad news had, it is true,

travelled across the sea—tidings of loss and change; but I was hardly prepared for the entire transformation of the old home. A wealthy ironmaster had bought it, and had, of course, immediately set about the work of renovation. Little was there to be seen of all I had fondly remembered. The house was curiously decorated and converted into a cottage *orné*, and the garden cut up into beds filled with glaring "bedding plants of modern times."

DAMAGE DONE TO GARDENS BY COWS.

In Gardening of July 31 a correspondent asks a question on this subject, and I have been expecting some abler pen than mine would have made answer to this question before now. Cases of this description are constantly before the Courts, and owners of cows, horses, and sheep are very often greatly astonished at the heavy damages they have to pay for their animals getting into their neighbour's meadow or Corn when it was the neighbour's fault for not keeping his fence in good order. The law is, that the owners of cattle must fence their beasts in, and if they get out of the field the owner of the cattle, sheep, or horses is answerable for all the damage they do, irrespective of the ownership of the fences, except in very special cases. I have just happened to come upon the following case in point:—

"Samuel Pollitt, farmer, of Thrintoft, was sued by John Lightfoot, farmer, of the same place, for the sum of £5, damage done to a Grass field by the defendant's sheep breaking into it. Mr. J. I. Jefferson, solicitor, Northallerton, appeared for the plaintiff. In May the defendant bought a number of sheep and put them into a field adjoining the plaintiff's. After they had been some time in they got through the fence into plaintiff's field, and continued to do so during the month of June and part of July. Witnesses were called who proved seeing the sheep in the plaintiff's field, and that the fence belonging to him was kept in good repair by him. Witnesses also stated the amount of damage done. The defence was that the defendant could not keep the sheep out of plaintiff's field on account of the bad state of his fences. His Honour ruled that it was the duty of the defendant to see that his sheep did not stray, and gave a verdict for the plaintiff for the amount claimed, with costs."

The leading case on the question is "Boyle *v.* Tamlin," and there it was laid down that "when two persons have adjoining fields and no hedge or fence between them, then each must take care that his own beasts do not trespass on his neighbour, unless one proprietor has acquired a right by grant or prescription to have the boundary fence maintained at the expense of such adjoining proprietor." There is an exception in the case of a fence by the side of a highway if cattle are being driven down the highway, but not if they are straying. A Solicitor.

THE SLUG.

Until lately I was not aware that there could be anything interesting in the slug. His personal appearance is not generally considered prepossessing. His locomotion is miserably feeble, not to say sluggish, and notwithstanding that he leaves in his trail a bright silvery line, the association of ideas robs even that of any beauty which it might otherwise possess, whilst his ravages among our choicest and tenderest plants bear witness to his insatiable appetite.

In the autumn of last year one of these marauders, a fine powerful thoroughbred grey, had insinuated himself into my greenhouse, and by his nocturnal attacks caused the solid squares of my promising young recruits to get sadly demoralised; but my patient vigilance has at length been rewarded. I came upon my enemy one evening wending his way, "without a thought and without a care," in the direction of my seedlings. Every amateur will understand and appreciate my feelings, as when gazing on my foe I muttered—

"There is not to reason why,
There is but to do and die."

Still the question of how best to kill the slug is not so easy of solution as the inexperienced might suppose. I have tried a brickbat dashed into him, but without appreciable effect; true, the garden roller is effectual provided it is of smooth iron and the path firm; still, it is unsatisfactory, and the sole of the boot is objectionable from the same cause, viz., the slimy, pulpy nature of the insect, whilst salt makes their execution even more repulsive. Therefore, taking a good pinch of lime, I buried Mister Slug in that, and seating myself comfortably on an inverted flower-pot watched the effect, little dreaming of what was to follow, never having either read or heard of it.

From the slug's movements I imagined that he was both astonished and offended at the warm reception which he so suddenly met with; still he evinced not the slightest symptoms of dissolution; on the contrary, he set himself to work in a thoroughly business-like manner to extricate himself from his difficulties. In about five minutes I observed the slug's nose appear above the heap of lime in which he lay; but it was perfectly clean and free from the slightest speck. I thought this strange, and I now sat watching the creature attentively. In a little time the whole of the head together with the horns emerged bright and perfectly free from the slightest trace of lime.

My interest being aroused by a phenomenon quite new to me, I examined the creature very closely, and discovered a fold of skin like a cravat round its neck, while the movements of the insect showed that it was gradually divesting itself of its outer skin. The operation was slow, but perfectly systematic; each muscular action increased the thickness of the fold, consequently releasing the body further from its imprisonment; and in about twenty minutes from the commencement the creature had shuffled off its sluggish coil, and was carefully picking its way over the lime in a bran new suit without a speck of the destructive lime adhering to it.

Again I covered my slug with lime and watched the effect; but the task of casting a second skin was too much for it, yet it succeeded in getting its head clear of the lime, and there its efforts failed; it could get no further, and I am almost ashamed to say that I gave the brave fellow no further opportunity.

A. Akerman.

The Importance of Mulching.—Here, in Suffolk, drought is an annual occurrence; nevertheless we do not feel the evil effects of drought so much as is experienced in those counties in which the annual rainfall is usually much greater, and for this reason—we provide as far as possible against it by mulching heavily everything that can possibly be treated in that way, watering being in some seasons a hopeless task. In the first place, we have discontinued digging or forking amongst Gooseberries, Currants, Raspberries, and dwarf fruit trees, and in place thereof, as soon as the winter pruning is completed, we apply a good dressing of old hotbed or farmyard manure at least 3 in. thick and more if possible, spreading it evenly over the surface. All outside Vine borders get a heavy dressing of pig or cow manure. Strawberry beds, too, are heavily dressed early in winter with partly decayed manure, which not only protects the crowns from injury by frost, but stimulates growth when required. The beds are likewise again mulched with stable litter when the Strawberries are coming into flower, and the mulching protects the roots from drought, and after being washed by rain keeps the fruit clean and dry. All wall fruit trees receive a mulching 4 ft. wide, measuring from the wall, as soon as the fruit is set; and in the case of Peaches, Nectarines, and Apricots this is extended according to the season, using as mulching any thing that will break the sun's rays and retain moisture. As regards vegetables, we have annually continued to extend the practice of mulching until more manure is used in this manner than is dug into the soil. Peas being an important crop, we sow all mid-season and late ones in trenches, prepared as for Celery, with good rotten manure dug into them, and as soon as the Peas are up and staked, we fill the sides of the trench full of partly decayed manure, when one thorough soaking of water will keep them in a growing condition for a considerable period, however hot and dry the season may be. All summer and autumn Cauliflowers, French Beans, Scarlet Runners, and other crops are treated in a similar manner, which greatly reduces the number of applicants for the watering-pot, and allows salad and other dwarf plants, that cannot conveniently be mulched, to have more effectual and unremitting attention. From the flower garden we might as well discard Verbenas, Calceolarias, and similar moisture-loving subjects as attempt to grow them without mulching; but by doing this effectually early in the season, and getting the beds thoroughly covered with foliage, the drought has no effect on them. When water is applied, we give as much as will soak away two and sometimes three days in succession, as I regard surface-watering as worse than useless.—J.

BULBOUS PLANTS NOT GENERALLY GROWN.

Ixias, &c.—These, when grown under glass, bloom in March and April. When cultivated out-of-doors they flower from May to July. Morphixias, Sparaxis, Tritonias, and Babianas are allied to the Ixia and require the same treatment, but differ in habit of growth. The Ixia is distinguished by its graceful habit, the Sparaxis by its dazzling brilliant flowers, the Tritonia by its soft vivid transparent colours, and the Babiana by its characteristic foliage, its flowers ranging in

Ixia, a bulbous plant suitable for greenhouse or outdoor culture.

colour from blue to the richest crimson. For in-doors, plant from September to December five or six bulbs in a 5-in. pot, using a compost of turfy loam, leaf soil, and silver sand. Make the soil firm about the bulbs, then place the pots in a cold pit or frame, plunging them in ashes, and withhold water till the plants appear, then give sparingly at first. The lights should be left off except during wet or frosty weather. Early in February if the plants are sufficiently advanced remove to the greenhouse, or where there is a very gentle warmth, and place the pots on a shelf close to the glass, and attend to the plants with water till in bloom. For out-doors, choose, if possible, a light loamy soil, thoroughly drained, and with a due south aspect; if backed by a wall or greenhouse all the better. Plant the bulbs from September to January, at a depth of from 3 in. to 4 in., and 1 in. to 3 in. apart. As the early plantings made foliage during the autumn, it is necessary to give protection during severe frost, and this may be best accomplished by hooping the beds over and covering when necessary with mats; or if tiffany is used it may be allowed to remain till the danger of severe frosts has ceased. The plantings made in December and January require no protection in winter, but as they will flower later in the summer than the early plantings, an aspect should be selected where the sun's rays will be somewhat broken; attention to this will prolong the blooming period. On stiff soil, or soils which lay rather wet in winter, the beds should be raised, and

the bulbs surrounded with sand, taking care that they are planted 1 in. or 2 in. above the level of the path, and where protection cannot conveniently be given, planting should not be made till December or January.

Cyclobothras and Calochortus.—These are remarkably showy plants related to each other, requiring to be planted in light well-drained soil in a sheltered situation, or they may be grown in pots for the greenhouse in the same way as Ixias.

Persian Fritillary (Fritillaria persica).—The accompanying illustration represents a hardy bulbous plant closely related to the Crown Imperial and the British Snake's-head (F. Meleagris). It is a stately plant, well worth culture where a free sandy soil exists. Its flowers, which are borne in long trusses, are of a purple and brown colour. All the above should, according to Messrs. Carter & Co., who grow them successfully, be planted during the next month where the conditions are favourable.

Sweet Peas.—I saw the other day at Heckfield a long line of Sweet Peas, 9 ft. in height and full of flower. The colours of the flowers were many, and all beautiful and all sweet with perfume. To any one who may desire to make a little during the summer by the sale of cut flowers, such a row as this was would be a mine of wealth. Hundreds of nosegays might have been taken from it. To secure such a grand display of Sweet Peas as this was it is necessary to have the soil deep and well manured, the seed sown as early as the middle of March, and some tall sticks. These are dear and difficult to obtain near towns, but in the rural districts are plentiful enough. To prolong the blooming of these Sweet Peas, presently the heads or tops will be cut off, and then the plants will throw out side shoots, and these again will produce an abundance of flowers. In another garden I remarked a pretty effect produced by the sowing together of seed of Sweet Peas and Convolvulus minor, the plants of the latter in this case growing to a height of 3 ft., and blooming profusely. The effect was charming. To get a really grand row of flowers in variety, it is an excellent plan to sow thinly in one drill seed of Sweet Peas, Canary Creeper, crimson and scarlet climbing Tropæolums, and Convolvulus major. It is a floral jumble, and almost a jungle, but the mass of colour obtained in such beautiful variety is really beyond description. The place for such a tall row of colour is where it is perhaps advisable to create a floral screen for the summer. In supporting this mass of growth Pea sticks should first be employed, and these again supported with tall Bean sticks, to the tops of which the Tropæolums will readily ascend. The best Tropæolums are Perfection (crimson scarlet) and Octoroon (deep maroon-crimson); and to check over-luxuriance on their part, cuttings make more suitable plants than from seed.—A. D.

Wintering the Blue Sage (Salvia patens).—So little trouble is involved in taking up and storing away the roots of this Salvia and other plants of a similar character, that it is unwise to risk them out-of-doors, and the superior manner and long period during which it, and other plants of a like nature, will flower when taken up and divided, so as to confine them to fewer shoots than when left in an undisturbed mass, with the opportunity given for fully incorporating manure with the soil, render their being taken up in the autumn preferable in every way to risking their destruction in the open ground.—T.

Planting Hardy Bulbs.—November is generally recommended as the best month in which to plant out-of-door bulbs; but if any one takes the trouble to lift a few bulbs at that period that have been left in the ground, they will find a good quantity of roots and the top growth considerably advanced, clearly showing that November is too late, as a rule, for planting.—J. G.

Fuchsias Out-of-doors.—Although the Fuchsia has been long grown well under glass, its merits as a hardy plant are by no means fully recognised, for the best specimens of out-door Fuchsias ordinarily seen consist of the very oldest varieties. Riccartoni, the old ripened wood of which is hardy enough to withstan ordinary winters, makes quite a beautiful bush in mild districts, but most of the newer kinds do best cut down close to the ground early in winter, and with a covering of coal ashes placed on their roots. Thus treated, such sorts as the white corolla'd Madame Cornellisson, and any free flowering sorts of good habit like Rose of Castile, make most beautiful and continuous-flowering border plants. They need scarcely any attention after they are once planted, as the annual shoots look better left to grow as they like than when a forest of sticks and ties is added under the impression of improving them. The latter give them by far too formal an appearance.—J. H. S.

Creepers for Training over Cottage Doors and Windows.—It is a simple matter the planting a Honeysuckle, Clematis, or Jessamine beside a cottage doorway, or the placing of a potful of earth on the window-sill outside, and sowing a few seeds of the Canary Creeper or Convolvulus in it; and yet what a large amount of pleasure it is capable of affording, not only to the actual possessors, but to passers-by—indeed, from my point of view, the latter is one of the greatest benefits it confers. Example is better than precept, and the lesson taught by a chastely decorated cottage front is carried home to many hearts. Some time ago I was passing a cottage that gave evidence that more than ordinary pains had been taken in ornamenting its doorways and windows with living plants. Over the doorway were trained Clematis Jackmani and C. flammula, mixed and blended together; and as the former became thin of flowers the latter opened its numerous small white sweet blossoms, which scented the atmosphere round. Round the windows were trained Canary Creepers and blue Convolvulus mixed, planted in boxes, which were also furnished in addition with Mignonette. I waited a few minutes beside the house to see what notice was taken of it by the people passing, and the effect was magical; not a single face but wore a pleased look as the eyes glanced upward and took in the view. And, after all, the trouble and expense was a mere nothing; at the most, two or three shillings would buy all the necessary requisites to begin with, and many a man spends that or more in a single week without deriving the least benefit from it in any sense.—H. D.

Protecting Tall Chrysanthemums in Windy Weather.—The situation in which we place our pot plants is sheltered by walls on the north and south, and by hothouses on the east and west, but it is otherwise fully exposed to sun and air. The plants are arranged in lines across the plot of ground, and a strong stake is driven down at either end of the line; cords are then run between the stakes at from 1 ft. to 2 ft. apart, and made fast at each end. The base of the stem is made quite fast to the bottom cord, but as the extremity of the shoot is approached the ties are made gradually looser, the last one, which is within 2 ft. of the extremity of the shoot, having 1 in. or 2 in. of play. The consequence is, that in windy weather the whole mass moves to and fro with the wind with little or no breakage; whereas, before this plan was adopted, though to every stem there was a stake, a sharp gust of wind used to break the tops off the shoots where they were made fast to the stakes. No plan is so safe as leaving plenty of space for vibration, whether upright stakes be used or not.—W. H.

Tufted Saxifrage (Saxifraga cæspitosa).—Amongst plants used for carpeting beds and borders of tall hardy plants I find none so effective as this Saxifrage. Its freshness of verdure, evenness of growth, and general adaptability for that purpose are certainly not equalled by such plants as Mentha Pulegium, which takes a good deal of trimming in order to keep it within bounds; neither is the Herniaria glabra so soft and pleasing as the Saxifrage in question, and, having fully tested it on a large scale, I can strongly recommend it as a hardy plant, which will give every satisfaction in pattern arrangements with the least possible trouble.—G. W.

Snapdragons (Antirrhinums) **in Poor Soils.**—On a piece of extremely poor sandy soil, lying so high that most plants seemed to perish from want of moisture, I have noticed a fine display of Antirrhinums. They seem, indeed, to revel in a situation which is fatal to almost everything else. If the value of this plant for such situations as that just described were better known, it would be more extensively grown. There are places which tax the skill of the cultivator to furnish satisfactorily. On poor, stony, parched spots the Antirrhinum may be planted, and will give good results with but little trouble.—J. C.

Golden-rayed Lily (Lilium auratum) **in Lancashire.**—It is only four years since I managed to summon up courage to plant Lilium auratum out-of-doors, L. candidum and L. tigrinum being the only sorts previously tried in this part of Lancashire. We purchase a quantity of L. auratum annually, and we treat them as follows: When the bulbs arrive they are examined, and arranged according to their sizes, the largest being set aside for pot work and marked for that purpose; they are potted in from 5-in. to 7-in. pots, according to the size of the bulb. The pots are clean washed, carefully crocked, and a layer of Moss, with the green side downwards, is placed over the potsherds. The material used for potting is a really good turfy loam, in a mellow state, without any further mixture, except it be a dash of yellow sand. In potting, the soil is made firm under the base of the bulb, and a thin layer of sand is laid under and around it to prevent rotting. The pots are then filled with soil to the required depth, and the operation is complete. The bulbs intended for planting out are treated in exactly the same way, except that the pots used are a size smaller. All are then taken to a cold pit or frame, and laid on a thoroughly porous bottom of cinders, and covered over with sand to about 2 in. or so above the crown of the bulb; no further notice is taken of them till the young shoots push through the sand in spring. I ought to have mentioned that in potting the bulbs intended to be grown on, it would be better to leave space for 1 in. or so of top-dressing, to be laid over the young roots as they are produced at the junction of the stem with the crown of the bulb. This precaution will not be necessary in the case of bulbs for planting out, as they may remain covered with the sand till planting time, when they should be planted sufficiently deep to admit of the surface roots being covered to 1 in. in depth with rich soil, and afterwards surface-mulched with rough leaf-mould or some similar material. Having thus far described our mode of treatment, it would be well to

point out the importance of aspect, rich soil, and thorough drainage where the rainfall in winter and early spring is heavy, as it is in Lancashire. I am of opinion that the day is not far distant when we shall see preparation made for planting whole beds of L. auratum. Why should we not expend the same labour and expense on the cultivation of some of those choice Lilies as we do in the case of Gladioli, for instance? As to position, it would be well to impress on intending planters the desirability of choosing warm situations, sheltered from biting winds and from the fierce rays of the sun, which soon denudes the stems of half their foliage. I have planted bulbs in shrubbery borders under various conditions and circumstances, and I have been struck with the comparative results in each case. Where the conditions are more or less favourable to the general development of the bulbs, extremes either of drought or of wet will blight even the brightest prospects. I have counted from twelve to nineteen flowers on a single spike from bulbs planted three years ago, and in each case, where the best results are observable, the bulbs are situated in borders facing the south, with the sun's rays broken up into gentle beams by intervening trees and shrubs. The borders, too, are always in good condition, from the fact of their formation being such that they will not retain stagnant moisture, and the shade referred to shields them from excessive heat. I have noticed during the hottest part of the summer how the stems of Lilium auratum shed their leaves even on a north aspect, and how they seem to recover themselves after the intense heat has abated. All these facts are suggestive, and serve to indicate to us certain standard rules, which seem to be of paramount importance in Lily culture.—W. H.

TREES AND SHRUBS.

HARDY CLIMBERS FOR WINTER ADORNMENT.

As the present is the best time for planting evergreens and climbers, the following hints as to subjects may be of service. In most gardens there are positions where it is desirable to produce as cheerful an appearance as possible during winter, and where climbers, either on walls, arches, or trellis-work, may be made a conspicuous feature. Some dislike Ivy on buildings; but even where such a prejudice exists there can be no objection to its employment for covering arches or rustic work of any kind; and as there are now so many beautiful varieties of Ivy, a more extended use of it would add to the appearance of many gardens. Among fruit or berry-bearing wall plants, scarcely anything has a brighter or better effect than the scarlet-fruited evergreen Thorn (Cratægus pyracantha). Though not so fast-growing as some plants, when once a wall is covered with it, if the pruning and training be judiciously managed, it has a rich and striking effect in winter. I saw the other day in a neighbouring village a good-sized house, the front of which was completely covered with it, and the bright berries were set so thickly amongst the dark foliage as to arrest attention.

Cotoneaster microphylla may be used as a wall plant under similar conditions, and it is very effective, both when in flower and afterwards, when the numerous small scarlet berries are ripe. It grows freely in good soil. It is with regret, however, that I plant it where I know rigidity of training is required, as its habit of growth, when left to itself, is so elegant and graceful, as to clearly indicate that it is a plant better suited for the rockery or semi-wild scenery than for a position where every spray must be orderly and circumspect. There are several winter-flowering deciduous shrubs that are indispensable where bright, cheerful effects are desired, and foremost among these must be placed

Jasminun nudiflorum, which in winter is loaded with bright golden blossoms. One almost wishes that it had the sweetness of the common Jasmine, but it is quite scentless. For covering any wall up to 12 ft. or 14 ft. it is most suitable, but I have never seen it growing above that height. I have it against a wall 30 ft. high, but it seems to stop when about half-way up, and makes but little upward growth afterwards. A later blooming yellow-flowered companion may be had in

Forsythia viridissima.—It is even more hardy, free growing, and vigorous than the Jasmine just referred to; and both, if growing on a wall, should be pruned back moderately as soon as the blooming is over, as they flower principally on the young shoots made in summer, and by cutting pretty well back, a large number of elegant graceful sprays of moderate length are always obtained.

The Japan Allspice (Chimonanthus fragrans) is quite indispensable in a collection of winter decorative hardy wall plants. Its flowers, which are freely produced from the time the leaves fall till well on through the winter, are deliciously scented. A small handful of the leafless flowering sprays will give fragrance to a large room. It is a free-growing shrub, and should have the shelter of a wall to preserve and protect its blossoms. There is a large-flowered variety of it too which is even better than the type.

Berberis Darwini should be planted wherever a good winter flower shrub is desired, as both foliage, wood, and flowers are so glossy and bright. It submits readily to training, and grows freely enough in good soil. When well established, it flowers profusely and almost continuously in winter. B. stenophylla is a free-growing, beautiful hybrid, not quite so erect in growth as Darwini; in this respect it partakes rather more of the character of its other parent, B. empetrifolia. It is a very desirable and handsome variety, either for a wall or for any other position. I have occasionally used the common evergreen Barberry (B. aquifolium) for covering low walls, and very effective it is for walls not more than 3 ft. or 4 ft. high.

Escallonia macrantha is one of the best and handsomest late-flowering evergreens, of comparatively recent introduction; or rather, I should say, if it is not new, it is far from being as common as it deserves to be. It is well suited for a wall where only choice subjects are admitted. In sheltered positions it will flower during the greater part of the winter.

Kerria japonica I saw years ago brightening up many a cottage porch and front in Worcestershire in early spring, and its yellow rosette-shaped flowers are pretty and cheerful on low walls. Its height does not under ordinary circumstances exceed 6 ft. or 7 ft.

Lardizabala biternata, although reputedly tender, should be tried in all sheltered situations where variety is sought, as it is very distinct both in foliage, flower, and habit of growth. It would in most cases be advisable to protect it a little in severe weather for the first year or two till well established, as afterwards cold would have less effect upon it. Several of the

Loniceras, or Honeysuckles, should be added to the list, including L. fragrantissima and grata; indeed, a wall wholly planted with different kinds of Honeysuckle would be highly interesting. There are many plants well adapted for low walls that would not be suitable for loftier positions, notably

Pyrus (Cydonia) **japonica** and its white variety; and, in point of fact, almost all of our flowering shrubs, both evergreen and deciduous, may be so employed if desired.

In sheltered positions Laurustinus will flower nearly all winter, and there are few shrubs brighter or more effective for walls not exceeding 10 ft. in height. I have seen Coronilla glauca growing freely on a low wall in Norfolk; and the early flowers of Magnolia purpurea, when trained against a wall, are very beautiful. Where an unsightly wall has to be hidden without breaking up the formal outline, a row of Cupressus Lawsoniana planted quite closely at the bottom of it, and about 18 in. apart, will soon produce an elegant wall of living green. All strong branches must be tied to the wall, and the small twigs cut back with a sharp knife.

E. H.

FRUIT.

Victoria Plum.—This is not a first-class dessert Plum, but selected, well-ripened fruit are very good eating nevertheless, and, being a freestone sort, it is all the pleasanter. As a culinary Plum it stands high, and it makes a delicious preserve. I have often purchased here a fine sample at 7s. per bushel, the selling market price. A strike costing 2s. 6d. gave, when stoned, 15 lb. of good flesh for boiling, which was just 2d. per lb. I may add that a strike is about 3 gallons or one-third of a bushel. It is a common fruit measure in the London market.—A., *Hounslow.*

Warner's King and Devonshire Queen Apples.—One of the finest Apples in the orchards here is Warner's King. It is first-rate as a culinary Apple and for market purposes. The tree is a strong grower and a good bearer. Devonshire Queen Apple is also a useful kind. Being large and having a deep red skin, it makes a handsome dessert Apple for this month and October.—*Exeter.*

Gathering Early Pears.—Although it is not advisable to gather late-keeping Pears a day sooner than the inclemency of the season compels us to shelter them, it is quite different in the case of early kinds, such as Williams' Bon Chrétien, Citron des Carmes, &c. These are much improved by being gathered a week or a fortnight before they are required for use and ripened in the fruit room. This early gathering is also a means of lengthening the season of such kinds as are but a very short period fit for dessert if left to ripen on the trees.

The Morello Cherry.—This should be freely planted where fruit for culinary or confectionery purposes is in request. If planted against a north wall it is one of the most certain cropping fruit trees that we possess; in fact, it should occupy a north aspect for several reasons, but more especially because the blossoming season is retarded in spring, and

because it offers great facilities for preserving the fruit in a fresh, plump condition late in autumn. The fan system of training is that best adapted to the Morello, as it offers the greatest facilities for keeping all parts of the tree stocked with young bearing wood; for, although like the Peach, Morellos will bear on spurs, I find that the young annual growths produce the finest fruits. This is a good time for selecting healthy young trained trees worked on the Mahaleb stock. Having well prepared a good position for them, carefully remove them as soon as the leaves have fallen. Do not overcrowd the wood, and keep it free from fly by means of the garden engine.—J. G.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 13.—Sowing a large bed of Radishes close to a south wall; shifting some Schizanthus into 3-in. pots; placing pots of Lilium auratum in the sun to ripen the bulbs after flowering; moving Azaleas under cover; making up failures among Endive; nailing Apricot trees; syringing Azaleas for thrips with soft soap, 6 oz. to a large potful of water; looking after thrips on Peach trees and syringing with Quassia chips and soft soap water; getting all Onions into loft and spreading them out thinly; digging ground for Cabbages; earthing up some late planted Broccoli, &c., giving Cucumbers a little top-dressing; hoeing amongst Spinach, Lettuce, Stocks, and Wallflowers, also among autumn-sown Onions.

Sept. 14.—Potting Pinks and Carnations; putting cuttings of Calceolarias into a cold pit; also some Hollyhock cuttings in single pots and placing them in heat, scarcely giving them any water, but leaving on a little air night and day; planting Cabbage, early sorts in rows 6 in. apart; tying up Chrysanthemums, also standard Heliotropes; gathering Irish Peach and Kerry Pippin Apples.

Sept. 15.—Potting Flower of Day Pelargoniums that were struck in pans; re-arranging the greenhouse and potting up a few plants of Alyssum for cuttings in spring; shifting tree Mignonette into larger pots; putting in cuttings of Verbena and Gazania; also more Pelargonium cuttings, consisting of Mrs. Pollock, Christine, and Beauty, into boxes set on flues; taking off Strawberry layers for planting; syringing Vines from which the crop is cut for thrips with soft soap and Tobacco water; watering Spinach with guano water for grub; gathering Ribston Pippin Apples; taking up Garlic, also the most forward Lapstone Kidney Potatoes; spawning and soiling second Mushroom bed; putting soil into a pit in which to plant Tea Roses for button-hole bouquets; thinning Turnips 6 in. apart; removing low boughs which overhang walks.

Sept. 16.—Finishing up Hyacinth potting; re-arranging Fern house; planting spring Cabbages, also Lettuces; pricking out Cauliflowers under hand-glasses and close to walls, also in frames; tying up scented-leaved Pelargoniums ready for conservatory, also Endive to blanch; gathering Apples, also Bergamot and Marie Louise Pears; turning Mushroom manure for another bed; giving Celery a sprinkling of guano and just enough water to wash it in; beginning to earth-up main crop of Celery for first time, also latest Celery.

Sept. 17.—Putting Cinerarias into their flowering pots; potting off some plants of Humea elegans; potting Tulips, also more Roman Hyacinths; potting Narcissi and Intermediate Stocks; putting Mignonette on front shelf in Peach house; shifting latest Balsams; planting Hautbois Strawberries, also Sweet Williams all over pleasure ground by the sides of woodland walks; plunging Disas in Moss, after being potted in very sandy peat; tying up July-sown Lath Cos Lettuce; syringing Violets for spider; gathering some Louise Bonne of Jersey Pears; gathering Lobelia seed; making pits ready for Roses and Violets; top-dressing early Vine border; clipping Yew hedge; cleaning Strawberry plantation.

Sept. 18.—Sowing Nemophila and Saponaria for baskets; potting Guernsey and Belladonna Lilies, also Crocuses and Snowdrops, Iris Susiana, and Her Majesty Narcissus; putting Carnations showing flower under cover; putting Bouvardias into Primula pit to give them a little heat; putting a few cuttings of Christine Pelargonium in boxes, and placing them on Vinery flue; planting out August-sown Cabbages, an operation which should have been done on the 6th inst.; should sow August 5 for this planting in the north of England; netting the best Pears and Peaches; put a skeleton frame over French Beans to carry nets to protect them from morning frosts; gathering all Apples and Pears in orchard except Robins and Greenings.

Glasshouses.

For some weeks after this there is generally a greater scarcity of flowering plants for greenhouse decoration than at any other season of the year, and the difficulty has been considerably increased in recent years when so many fine and distinct flowering plants have been left uncared for in favour of collections of zonal Pelargoniums and others of like character which, although well in their way and very useful where the numbers grown are kept within reasonable limits, yet fail to give the satisfaction that more variety is capable of doing; but if the various plants from time to time recommended have been properly prepared, the early autumn scarcity of flowering subjects can be got over with a fair amount of bloom. Where sufficient numbers are grown of the most distinct habited kinds of tuberous Begonias, especially the narrow-petalled drooping sorts generally so much more profuse in flowering than the erect varieties, they will be found very useful. The latest Lilies of the speciosum section will be also of great service along with Fuchsias treated as recommended earlier in the season, so as to induce them to bloom late.

Lapagerias.—As regards both the red and white kinds of these, although essentially climbing plants and most effective in that way, yet now, when they are becoming more plentiful, there is no way in which they can be made more useful than by growing some in pots, so as to admit of their being moved about to greenhouses or other places when in flower. Whilst they are of medium size they need not be placed on stiff wire trellises in the way in which large examples are grown in pots, but loosely wound round a few erect green painted sticks inserted just within the rims of the pots. In this way they will have a more pleasing appearance, and when they get so large as to require permanent support there is no necessity for training so close and formally on the trellis as is usually done, for when the flowering shoots are left hanging loosely they look much better.

Celosias of the pyramidal section, sown at the time recommended and grown on, will be found most serviceable for conservatories, especially where there is a little heat turned on on cold nights and in damp weather; but whilst here, similar to all other plants in a temperature lower than they absolutely like, they must receive no more water at the root than is necessary to keep them from flagging, for although simply annuals, and injury in this way to them is not of so much consequence as in the case of plants of a more permanent character, yet if treated so as to preserve their roots as long as possible they will continue longer in a presentable condition than they otherwise would do. The same kind of treatment is also applicable to the old Globe Amarantus, another subject equally well adapted for conservatory decoration.

Standard Heliotropes and Habrothamnuses, managed as recommended through the spring and summer, will now take their place in the conservatory, and where a little extra warmth is kept up, later on the Heliotropes will continue to flower almost to the end of the year.

Heaths, the latest autumn flowerers, can likewise be made to do duty in cool conservatories, placing them in the lightest position that can be had, and being careful not to overcrowd them.

Oranges, &c.—Any of these that for a time may have been out-of-doors should now be transferred to the greenhouse. It is in all cases advisable before introducing them to sponge the leaves, and to free them from any insects that may be upon them. Where good gardening is aimed at, this is a matter that at all times require attention, for one foul specimen taken amongst a clean stock will very soon affect the whole, entailing an unlimited amount of extra labour.

Flower Garden.

By way of giving some assistance to the prolongation of the beauty of bedding plants, let dead and decaying flowers and foliage be kept pinched off, and the outlines and groundwork of the various designs should be scrupulously preserved by pinching or pegging, as may be necessary; all the surroundings, too, such as turf, Box edgings, paths, walks, &c., should be kept neat and trim. We may soon expect high winds, and therefore all tall-growing plants should be securely staked and climbers tied in. Remove suckers and straggling shoots from Roses, and see that standards are also securely staked. Any recently budded plants should be examined, and those buds that have fairly started into growth may have the ligatures moved. The propagation of the various kinds of soft-wooded and tender bedding plants ought now to be completed, in order that they may have time to get well established in their pots before cold, damp weather sets in. Offsets of many kinds of succulents can now be had in quantity. All the Sempervivums strike root readily in a cold pit, and in any kind of soil, if not over-watered; a good watering when the cuttings are put in is about all that is required till they have rooted. The commoner varieties, such as S. calcareum and S. montanum, root and winter well on a south border; but till they are rooted and established in the ground they should be netted over, or birds pull them up in their search for insects. The offsets of Echeverias should be afforded the protection of glass where practicable, otherwise they winter tolerably well at the foot of a south wall, particularly if planted on an incline to throw off the rain, which is more fatal to them than frost. Sedums, Saxifrages, and all other hardy dwarf carpeting plants can be increased to any amount by division, an operation which may be done at any time. These latter are all good plants for winter bedding.

Housing Plants.—In the cooler portions of the kingdom it is not safe to leave hard-wooded plants out much longer without there exists some temporary movable protection, such as a canvas convering on rollers, resting on a light wooden framework, than which no more useful appliance exists in a garden, as not only can it be used to keep the plants from drenching rains during the summer, but they will be safe for some weeks yet by running the cover down over them in the evenings when there is an appearance of frost. Where there is not some appliance of this sort they should be got in at once, previous to which the house ought to have had a thorough cleaning. Every plant liable to the attacks of mildew should be examined before being taken in, and where any trace of the parasite is found dust freely with sulphur, for not only can the presence of the mould be much easier detected now than when the plants are arranged, but the chances of its affecting others that are free from it are avoided.

Fruit.

Continue to remove, as opportunity offers, the redundant wood from fruit trees generally. Apricots and Peaches should be kept closely tied or nailed in, and all sub-laterals removed as produced. Some few kinds of Apples and Pears are ready to gather; early kinds are very tender fleshed, and require the greatest care in gathering, as the least bruise soon develops into full decay. For the same reason they should be stored on the fruit room shelves in single layers only. Above all, see that none are gathered prematurely, or they will not ripen, but shrivel, or be sticky and hard. Note should now be taken of all trees that are growing too vigorously, and which will require root pruning, also of any that require assistance to increase root action by the addition of new soil and top dressings, and also of all new planting and plants required for the same, so as to have all in readiness for planting next month—October being the best planting season for all kinds of hardy fruits.

Vegetables.

Potatoes.—Late crops should now at once be taken up, as after this time there is nothing gained by leaving them longer in the ground. Where considerable quantities are grown it often becomes a difficult matter to find room for storing them without resorting to clamping; but, unless where unavoidable, this method of keeping them should never be practised.

Cauliflowers that were sown in the middle of last month will now be ready to prick out, and those intended for early use next spring, and which are to be protected during the winter by handlights, ought to be pricked out in them at once. Double or even treble the number of plants intended to stand may be planted in them and drawn out as growth progresses, and transplanted in other favourable positions as soon as the severity of the winter is past. Of course the covers of the handlights will not be required for use till there is danger of injury from frost. A batch may also be pricked out at the bottom of a south wall and left to stand the winter in that position.

Lettuces.—Make a last sowing in the open air of Lettuces. The Tom Thumb is a beautiful little Cabbage Lettuce for sowing now for frame-work by-and-by. It is very hardy, occupies but little space, and turns in rapidly. The Brown Cos should also be sown now for spring planting. A last sowing of Endive may also be made now on a dry warm border.

ROSES.

ROSE STOCKS FROM CUTTINGS.

The old style of getting up standard Roses by digging up a number of old Briers with long stems from the hedgerows in autumn, and budding them the following season, is still very generally practised; indeed, it has been so long followed that few agree with anything that is said against it; but the system has many weak points that may be improved with advantage. I know a good many Rose growers who object to grow standard Roses on the Brier altogether, because they are so liable to die off or decline in strength. The scarcity of standard Briers is acknowledged: consequently those who are in the habit of grubbing stocks from the hedgerows and elsewhere are compelled to take every Brier that is tall enough and sufficiently thick, no matter what age it is. Briers of this description never have many fibrous roots, and few of them are found without a large club at the end of the stem, which lifts as clear of roots as the head of a walking-stick. How stocks of this kind can support buds and growth until the plants are saleable I cannot imagine; but I can say this, that I have frequently received dozens of standard Roses with club roots as fibreless as the palm of one's hand. Therefore, seeing that fibrous roots are so necessary in order to produce fine Roses and healthy bushes, what wonder that standard Briers should prove so unsatisfactory and die prematurely.

Instead of lifting old rootless Briers do not disturb them at all, but secure all the straight shoots on the Brier bush that can be had, and put them in as cuttings. To insure their rooting they should not be cut, but pulled off with a heel of the old wood attached. When put in in November they are ready for "working" the following July or August. All buds, except two or three at the top, should be removed from each shoot. In putting them in the rows should be 2½ ft. asunder, with 6 in. or 8 in. between each in the row. The cutting should be inserted about 3 in. under ground, and the soil must be pressed very firmly around it. It is an advantage to mulch between the rows after the cuttings have all been put in. Treated in this way, 90 per cent. will root. I am aware that this is not a new way of raising Brier stocks, but it is not practised anything like so extensively as its merits deserve. Stocks thus raised possess all the good qualities of the seedling Brier, as the fine fibrous roots freely produced by the cuttings are equal in every respect to the best produced from seed. And it has this important advantage, that they may be got up from cuttings in half the time which it takes to raise them from seed. The old way of procuring Briers will bear no comparison with the plan now suggested, so far as growth and culture are concerned; and where only one or two Briers could be got from a bush with suitable roots, dozens of suitable shoots can be often had from the same bush. Many grow Roses extensively, using only the cuttings of the Brier, and the plants are healthier and finer grown than any others of the same age. Those who have planted them in previous years are so satisfied with their superiority that they will have no others.—C.

VEGETABLES.

Clubbing-in Broccoli and Cabbages.—I have found the following remedy of the greatest service in cases of clubbing-in Broccoli and other varieties of the Cabbage tribe. Make a mixture of Gishurst Compound and Pooley's Tobacco Powder in a pail of water, adding a little stiff loam to give the mixture some consistency and well puddle the roots with it before planting, after which give the plants another good watering, especially round the collar of the plant. Since the application of this remedy no fresh cases of clubbing have manifested themselves, while several plants which had become clubbed in the seed-bed are now healthy and vigorous.—J. R.

Carrots for Main Crops.—I greatly prefer James's Scarlet Carrot to the longer but coarser varieties so much grown, such as Altringham and Long Surrey. These frequently grow a good way out of the ground, whereby the crown gets discoloured and useless for cooking purposes; James's Scarlet, on the contrary, is usually of fair size, and good in colour and quality.—J.

Mushrooms in Frames.—Mushrooms can be grown successfully in an ordinary garden frame; in fact, it frequently happens that a crop will spring up spontaneously without being spawned or any other preparation after the bed has been used for Cucumbers or Melons; but when intentionally grown in a bed of this description, I have frequently at this season cleared out the exhausted Cucumber and Melon plants, levelled the soil, and inserted a brick or two of spawn in the soil in the usual way; previous to which, if over dry, moistening it moderately with water, allowing a day or two to settle before putting in the spawn, covering with 6 in. of hay. If the thermometer did not indicate a bottom-heat of 75°, I applied back and front moderate linings of warm manure, and covered the glass with 3 in. or 4 in. of litter, tacking down mats to keep it from being blown away. This covering is necessary, as the weather is frequently so bright through this and the beginning of the next month that the heat from the glass, if uncovered, would be too much for the Mushrooms, without admitting air in such quantities during the day as would make the atmosphere too dry. Beds so treated, moistened with tepid water as required, and kept warm by an occasional lining, have continued bearing freely up to the end of November.—B.

Little Pixie Cabbage.—I find this to be an excellent variety for furnishing early supplies. This year, as our autumn-sown plantations were much cut up by the severity of the winter, we sowed under glass early in January Little Pixie, and pricked out the seedlings under temporary shelter as soon as they were large enough to handle, finally planting them out in March in deep drills to shelter them from parching winds. Beyond keeping them frequently hoed in dry weather, they have had no attention, and they are now as fine and even a lot of medium-sized Cabbages as need be seen, and they were fit for cutting before the latest autumn-sown plants or the Early London Colewort, sown on the same day as Little Pixie, and for the majority of cultivators these moderate-sized Cabbages that turn in quickly are preferable to larger varieties that require double the space. We plant 1½ ft. apart each way, and cut them before they get hard and fully grown, as they are much more appreciated than those that are older, the fibre of the leaves in which become hard and stringy, rendering them altogether inferior to the same plants cut as soon as they have acquired a good usable size.—J. G.

Soil and Manure for Cucumbers.—A great depth of soil is unnecessary for Cucumbers; indeed, it is to be avoided, for they will succeed far better if they be planted in a little soil at first and receive frequent top-dressings afterwards; for planting, 8 in. or 10 in. of soil is quite deep enough if the bed receive slight dressings of stable manure mixed with soil to keep the plants in a vigorous state of health. Good turfy loam mixed with rotten manure is the best material in which to plant them, but the dressing should be of a richer nature. Many people use a quantity of peat mixed with the loam for winter Cucumbers; others use leaf-mould, but it is too light; the plants thrive well in it, but do not last so long nor fruit so freely as when grown in more holding soil. Cocoa-nut fibre refuse is highly recommended by some as a good dressing for Cucumber beds, but stable manure is the best kind of surfacing, and may be applied fresh from the stable; and if a little old mortar or brick rubbish be mixed therewith it will be better still. Weak guano water is the best kind of stimulant to apply to Cucumbers; other kinds of manure water are said to affect the flavour of the fruit. I have found a sprinkling of Standen's Manure over the surface of the bed highly beneficial to plants becoming nearly exhausted. Abundance of water is at all times necessary to Cucumber plants growing under advantageous circumstances.

International Potato Exhibition.—We would remind our readers, and especially intending competitors, that the 14th inst. is the last day for making entries for Messrs. Sutton's prizes at the above exhibition, to be held at the Crystal Palace, Sept. 22 and Sept. 23, for eighteen varieties of Potatoes, distinct, nine tubers of each, open to noblemen's and gentlemen's gardeners only. We are glad to observe that the prizes are to be awarded by gentlemen's gardeners. All entries should be made to J. A. McKenzie, Esq., Tower Chambers, Moorgate, London, E.C.

GLASSHOUSES AND FRAMES.

PLANTS FOR VINERIES.

The following is a list of plants that do well with me in a lean-to Vinery, the temperature of which often falls as low as 40° in winter. Under the Vines I have a stand with eight shelves. On the top shelf at the warm end of the Vinery I have four pots of Eucharis amazonica with about twelve bulbs in each pot, but though the foliage is very healthy they have never flowered yet. Next to them is a large plant of Curculigo recurvata, looking the picture of health, and showing several of its insignificant yellow flowers. It is easily reproduced from offsets pulled off and struck in a hotbed. Aspidistra lurida variegata is a very useful plant for winter decoration; I have a large panful of it, and next to it comes a small plant of Cycas revoluta with nine fronds. Then comes a plant of Sanseviera carnea variegata, a highly decorative, though little known plant. Of Palms I have five moderate-sized plants of Latania borbonica and two of Seaforthia elegans, two of Corypha australis, besides two other Palms the names of which I do not know. On the next shelf I have a large handsome plant of Maranta zebrina and a small one of M. regalis, both of which I kept through last winter. Maranta zebrina has now several leaves 10 in. long by 6 in. broad, two shades of green above and violet-purple below. Then come two plants of Dracæna indivisa and five of D. australis; then a large plant of Begonia hydrocotylifolia and another of B. manicata.

I also grow B. sanguinea, B. Weltoniensis, B. fuchsiodes, B. Ingrami, B. nitida, B. erecta grandiflora, B. Grayi, B. discolor, &c., besides about two dozen plants of B. Rex, B. Marshalli, and their varieties, that do well under the stage. I have more than a dozen plants of a Gesnera, which I take to be cinnabarina, and though it does not flower, I find its crimson velvety foliage very effective for winter decoration. I have about a dozen pots of Achimenes and eighteen pots of Gloxinias, which I start in April on a hotbed, and bring into flower in the Vinery. I have two pots of Hoya Bella, which I find does well under the Vines, and a large pot of Plumbago capensis. From the roof I hang plants of Panicum variegatum, Myrsiphyllum asparagoides and Saxifraga sarmentosa, together with the Stag's-horn Fern (Platycerium alcicorne) hanging from the roof. I had Dieffenbachia Baraquiniana and Fittonia argyroneura and Pearcei given to me early in the spring, and although they have done well up to the present time, I am doubtful if I shall be able to keep them through the winter. Coleuses always die when I ripen off the Vines in autumn, so I get a packet of seed for 2s. 6d., and have nice plants all summer. I grow a great many Ferns and some Cacti and Epiphyllums.

Leicestershire.

Cyclamens.—Plants of these that have been grown on freely under glass near the roof, yet guarded from the sun, will usually be found in a much more satisfactory condition—even in the case of old examples—than when exposed in the open air. The second season after sowing they are generally the most useful; but young stock raised from seed sown about a year ago, where well managed, will by this time have made fine bulbs that will bloom well. They will yet require care to keep them free from aphides and red spider, although the latter pest will not from this time cause so much trouble as earlier in the season. If, however, any happen to be present they will yet injure the leaves to an extent that will much interfere with both the appearance and well-being of the plants, as Cyclamens more than most things suffer from the presence of insects. Plants that have been managed on the exposing-in-the-open-air system after flowering, if not already potted

should be attended to in this respect; but it is much better to defer the operation until they have commenced to push up new leaves freely than to pot whilst they are in a comparatively dormant state, as they rarely take freely to the new soil unless the roots are in an active condition at the time of potting, immediately after which they should be placed in frames or pits where growth can be encouraged. A little warmth will be of very great service, for though they may be grown in a temperature such as that which ordinary greenhouse plants require, still there is no question that treatment slightly warmer is more conductive to their well-being, and in the case of young plants they get up to a useful flowering size in much less time.

TULIPS.

THE bulb catalogues which are now arriving remind us that the season for planting and potting Tulips is now at hand; a few hints as to their culture will therefore be seasonable. When grown in pots, Tulips are treated in precisely the same manner as recommended for the Hyacinth in GARDENING last week, but several bulbs, according to their size and the purpose they are intended for, are placed in a pot. Messrs. Sutton & Sons, who grow large quantities of bulbs, remark that when required to fill epergnes and baskets, and other elegant receptacles, it is a good plan to grow Tulips in shallow

Parrot Tulip.

boxes, and transfer them when in flower to the vases and baskets. This mode of procedure ensures exactitude of colouring, height and stage of developement, as the taste of the cultivator may require; whereas, when the bulbs are grown from the first in the ornamental vessels they may not flower with sufficient uniformity to produce a satisfactory display. In common with Hyacinths and Crocus, they may be taken out of the soil in which they have been grown, and the roots washed clean, and inserted in glasses for decorating an apartment. As the early Tulips are extremely cheap, they might often be employed in this way to light up festive gatherings at Christmas and the early months of the year. The first and second classes are admirably adapted for pot culture, but late Tulips are not worth growing in pots because of their lateness; otherwise, indeed, they are extremely beautiful, and the florists varieties are highly valued as exhibition flowers. For general usefulness the Early Tulips are the most valuable of all, because of their peculiarly accommodating nature, their many and brilliant colours, and their suitability for the formation of rich masses in the flower garden. Any good soil will suit them, and they may be planted in quantities under trees, if the position enjoys some amount of sunshine, because they will have finished their growth before leafage of the trees shades them injuriously. If it is necessary to prepare or improve the soil for them, the cultivator must aim at rendering it rich and sandy, and it must be sufficiently well drained that it does not acquire a boggy character in winter. Plant in October or November 4 in. or 5 in. deep, and 6 in. apart. They require no water or supports, and may all be taken up and stored away in good time for planting Geraniums, Verbenas, &c., for the usual summer display. In an extreme case Tulip bulbs may be kept in good condition until the middle of March, and if planted then will flower nicely in May, and be fit to take up in June. We do not, of course, recommend subjecting them to such a trial, but the fact has its value, and many a collection has been saved by the cultivator acting on a knowledge of it. It is important to select the sorts with care for geometric planting, but a most interesting border may be made by planting clumps of all the best sorts of all the several classes. The result will be a long-continued and splendid display, beginning with the Van Thols (which are as hardy as any), then following with the early class in almost endless variety, and finishing with the noble Gesneriana, and the flamed and feathered varieties of the late section. It is not generally known that the Tulips the florists prize so highly make fine border flowers, and may really be well grown with but a tithe of the trouble the florists bestow upon them. The representative of the race is the splendid Gesneriana, with large crimson flowers spotted with black in the centre. The varieties of this section are not adapted for planting in beds that are to be occupied with greenhouse bedders, but they may be taken up in time for the beds to be planted with sub-tropical plants to succeed them, and would be especially valuable for their display of glorious flowers in the month of May, when the flower beds in English gardens are generally quite barren, or but just filled with plants that must have time to make effect.

ANSWERS TO QUERIES.

2908.—**Slugs in Larders.**—The slug referred to is, I presume, the large grey slug frequently found in underground kitchens and cellars, and which, being omnivorous, does good service in consuming scraps of animal and vegetable refuse found in such places. The following is the mode of catching them adopted in gardens, where they are sometimes found in pits or frames, doing damage to young plants and cuttings. Being night feeders, they are very difficult to find in daytime, as on the approach of light they betake themselves to their retreats in crevices, the undersides of stone slabs, or, indeed, anywhere where it is cool and damp and dark. Take some common wheat bran and lay it in little heaps on the shelves or floors where they are known to come, and over each little heap invert a small flower-pot, having stopped the bottom hole with a cork to render it as dark as possible, and tilt the pots on one side, only just leaving room for the slug to crawl in; being fond of bran, he will generally eat his fill of it, and then to be near his supper for the next night, he will usually crawl up the inside of the pot, which being cool and dark will be to his taste exactly. In the morning look over your traps, and any captives may be disposed of by dropping them into a vessel containing a handful of salt.—W. H. ADE.

2916.—**Keeping Flowers in a Cut State.**—The essentials for this are a very cool and perfectly moist atmosphere, with as much light (not sun) as possible. The following plan will be found effectual: Take any old piece of cloth or flannel, and fold it so as to make three or four thicknesses of the size required, and then have ready a bell or propagating glass large enough to hold all the flowers you need to preserve without crushing. Dip the cloth in cold water, and wring moderately dry, and fold it so that the edges come beyond the rim of the bell-glass when turned down upon it. Gather your flowers as early in the morning as possible before the sun has dried the dew off them (if dry when gathered it may be necessary to slightly sprinkle or dip them in cold water). Take your flowers and carefully pack them on the cloth in a heap, and then turn the glass over them. You have now all the conditions for keeping them fresh for several days. The edges of the moist cloth will by evaporation tend to keep the air within both moist and cool. Let them have all the light possible, but avoid the direct rays of the sun. Be careful not to bruise any of the flowers, or the damp atmosphere will soon discolor the part injured, especially of white flowers.—W. H. ADE.

2801.—**Grass going Brown.**—From my own experience, I found that the cause of a large patch of Grass in the middle of my lawn going brown two or three summers was, that there was a small bed of sand about 10 ft. square 6 inches under the surface. I took the turf up, dug out 18 inches deep of the sand, and filled it in with soil and manure; the Grass is now all right. It is a great mistake to cut Grass too short in hot weather.—J. F. H. W.

2893.—**Saving Cabbage Seed.**—Should the Cabbage seed be of a good sort, if ready sow it at once. I had a Defiance Cabbage run to seed this year, and I ripened the seed and sowed it, and am glad to say I have a nice lot of plants for putting out in due time.—W. A.

2896.—**Purchasing Grain &c.**—Flat Maize may pay a good percentage in the course of a month or two, being very cheap now; other grains are likely to be lower yet; round Maize is too dear to speculate in. As regards hay, it will not be dear until about next spring; then it is likely to advance in price.—ONE IN THE TRADE.

2891.—**Pansies in Pots.**—Strike good cuttings in good soil in a cool frame; pot them on in next spring in good decayed cow manure and a little loam; feed them well when growing freely.—PRIZETAKER.

2914.—**Mushrooms Infested with Maggots.**—Your correspondent "Creeping Jenny" will find it very difficult to grow Mushrooms without maggots at this season of the year. I have tried, with some success, covering the bed with ordinary matting. The mischief is done by a small fly with an ovipositor, with which she pierces the young Agaric when not larger than a Mustard seed; she then slips in a few eggs and is off to another young Mushroom. The eggs hatch in a few hours, and the maggots grow rapidly. The great majority of field Mushrooms are infested with maggots, and they chiefly affect the part where the stem joins the cap; here their boring can be seen on breaking off the stem. Nearly all the large old Mushrooms used for making catsup are swarming with maggots.—J. S.

2825.—**Poplar Roots in Lawns.**—This is not a very easy matter. I have known suckers to continue to rise long after the trees were cut down. The best thing to do is to cut the roots well beneath the surface near the points where the suckers rise, so as to permit of their being extracted. To take up the turf and trench over the ground would be more permanent in its effect, but the Poplars will soon send their roots into the fresh-stirred earth again.—E. H.

2824.—**Grape Vines Infested with Red Spider.**—I am afraid, with the main leaves in the condition stated, there is not much chance of colouring the Grapes this year. Fumes of sulphur in a confined atmosphere will destroy red spider, but burning sulphur will destroy all green unripe foliage and wood. The following plan has been tried with success:—Procure two or three lumps of fresh lime, place them in a pail or some open vessel to slake, pouring on sufficient water for that purpose. When the disintegrating process is fairly in operation, take the pail to the Vinery and scatter two or three handfuls of sulphur over the lime and leave it inside. It should be done in the evening, when the house can be shut up close. The pail might be placed under an old chair, or a hand-barrow, or some similar contrivance adapted to break up and scatter the heated column as it ascends. Leave the laterals this year unstopped, as small leaves are better than none.—E. H.

2912.—**Eucalyptus in Winter.**—I cannot give "W. D." much hope of keeping his plants through the winter unless it should prove unusually mild, and for this reason he has brought them from a warm climate into a cold one, and their vitality has been necessarily lowered. As I have been more than ordinarily successful in growing E. globulus, I will give "W. D." the benefit of my experience. Sow the seed in light soil in pots in March, either covering with glass or plunging in a frame. In the autumn plant out in the open ground or transfer into 5-in. pots, which keep out-of-doors. In the latter case the plants must be placed in the situation they are finally to occupy next spring. They can hardly have too much sun or too much water, but they can be too much "molly-coddled." In fact, the whole secret is to let them know at once what they have to expect. By the adoption of this rule I have kept them for five years. One became in that time a tree 25 ft. high, and its stem (a section

of which is before me as I write) a diameter of 7 in. The soil is underlain at 3 ft. by clay, and the aspect south-westerly. No protection whatever was used, nor would any that I could have adopted have availed to save my trees—twelve in all—from the almost Arctic cold of the winter of 1878. I lost them all then, but I have not lost heart in the matter, and am repeating the experiment. One of my last year's seedlings is now 3½ ft. high. I shall be pleased to see the whole subject of Eucalyptus cultivation discussed in GARDENING.

Group of Double Tulips.

Some time since I saw trees of five years at Blidah, in Algeria, which had already attained a height of 60 ft.—H. D., *Dublin.*

—— "W. D." will find the Eucalyptus will not live through a hard winter. I had several that I raised from seed and planted out in a sheltered position in Wimbledon Park in 1876. One grew to over 20 ft., but the winter of 1878-9 killed them completely. A correspondent of the *Standard* stated that the Eucalyptus was cut down last winter at Torquay and Mentone.—T. S.

2829.—**Hibiscus africanus.**—The seeds of the plant usually grow freely when they are new and the soil in a suitable condition. Twenty years ago, when it was commonly used for massing, the self-sown seeds would be in the ground all winter, and make strong vigorous plants in spring. Perhaps "E. G.'s" garden is cold and wet; if so, he should sow in pots or boxes in a frame, or under some shelter, in April, and plant out about the third week in May.—E. H.

2787. — **Pansies Rotting Off.** — When Pansies are seen to be drooping it is well to search for the cause. If, instead of simply pulling them up, the ground about a sickly plant be gently raised with a trowel, the underground stem will probably be found to have some wireworms about it, which should be carefully destroyed. By examining the soil round about, all the offenders may be found and killed, and the injured plant should be thoroughly crushed in order to kill all the vermin that may be upon it.—D. H.

2877.—**Making a Garden.**—The treatment the land has received is right so far, as exposing clay land to the action of the atmosphere tends to improve its character. If some sand, ashes, road scrapings, or burnt earth could be added to the surface and forked in its character would be still further improved; all kinds of manures are also beneficial. If the time can be spared it may be stirred over again this autumn, and should then be left rough till February, when it should be prepared for cropping by forking it over, and by March the land should work well and be in a good condition to receive all kinds of seeds and plants. I am assuming the garden is enclosed with a fence and the walks made, as this should be the first work taken in hand.—E. H.

2888.—**Night-scented Petunia.**—The plant referred to is probably Nycterinia capensis, a half-hardy annual with fragrant, whitish-brown flowers, which expand in the evening. Sow in April in a cold frame, and prick off the seedlings when large enough to handle, placing two in a 4½-in. pot, or the seed may be sown in an open sunny situation in the open ground about the latter end of April. There is another more dwarf species, Selaginoides, very pretty, and which may be treated in the same manner. —J. C. B.

2895.—**Vallota purpurea in Windows.**—Do not disturb your bulbs now; nothing will be gained thereby. Allow them to remain as they are until April, when they may be shifted. This is the season when the flower-spikes should be pushing up, which in any case, however strong the plants might be, they would fail to do were the roots disturbed. It should be remembered that the Vallota requires but little pot room, never blooming freely until the soil is thoroughly packed with fibres. I have plants which have been in the same pots at least four years, and which are flowering freely enough. The young ones may be dibbled in round the edge of a small pot, not pulling them apart when shifting them. A handsome specimen will then be formed.—J. C. B.

2889. — **Early Tomatoes in Greenhouse.**—Take cuttings of Tomatoes now and grow on near the glass, shifting into larger pots as they require it. The points of the shoots 4 in. or 5 in. long, dibbled simply into small pots and kept in a close frame, will soon root; cut near a joint and remove the bottom pair of leaves, using sandy soil. When placed in fruiting pots, which may be 10 in. or 12 in. in diameter, stand the plants on a front shelf and train near the glass.—E. H.

2884.—**Vines in Pots.**—Six-inch pots are too small to fruit Vines in as a rule, but as the Vines in question are seedlings, and no doubt "Enquirer" is anxious to fruit them as soon as possible, I should advise him to let them remain in the 6-in. pots, but to top-dress with rough turfy loam and manure; a good plan would be to plunge the pots into larger ones full of the rough rich compost. If they are not strong enough to fruit next year, then after the buds have broken, rub all off but the bottom one, and grow that on as a single cane, repotting and shifting until they occupy 12-in. pots.—E. H.

2830.—**Propagating Carnations.** — Take layers or cuttings as early as possible in the spring, pot as soon as rooted and grow on, exposing them (plunged in ashes or fibre) in an exposed sunny position during the summer, never allowing a check for want of water, giving the final shift in August. Avoid bringing the plants into the greenhouse till their flowering buds show themselves, as they otherwise get drawn up and weak; but to escape early frosts a cold frame or other protection will be necessary at night. All descriptions of Carnations and Pinks will flower in the winter and spring if treated in this way; but as a rule, the ordinary Carnations will be found more serviceable in April and May, whilst for the depth of winter the Perpetuals are most reliable.—J. A. WALLINGTON.

2879.—**Striking Rose Cuttings.**—A any information will be useful, I will give you my experience. In May, 1879, I made forty cuttings of various Roses, and having filled a long box with earth, I inserted both ends of the cutting into it, so as to form an arch; I then put the box behind the flowers in my conservatory, next the glass, and kept it regularly watered. No change appeared to take place until about the middle of August, when I found they had commenced to come out in leaf, and in about a week from that time they looked quite green. I then tried the experiment of cutting some of them in half, so as to form two cuttings, leaving one end of each in the earth, when I found that the top part of the cutting died off; others I left in an arched state for two or three months, when I cut them in half, and both ends were firmly rooted, neither dying. I did not take them up until the following July (1880), when I transplanted them into pots, where they are thriving well, and will, I hope, bloom next season.—C. W.

2923.—**Roses for Clayey Soil.**—Let me advise "Croft" to consider how many Roses he has space for, to select the best, having regard to variety in colour, giving preference to those on their own roots, to mark out the places and have the clay soil taken out 2 ft. or 3 ft. deep, and if he can procure the cleanings of old ditches which are mixed with decayed vegetable matter with which to fill the holes, I have little doubt his Roses will do well. If not, I would leave the clay soil out all winter to be aërated by frost, and then plant in early spring with the addition of good manure well worked in. My own impression is, that Roses, as a rule, are planted with far too little preparation of the soil to do well. That when the roots can get well down, especially own root Roses, they are quite free from danger from frost, though it is always advisable at first to give a mulching of rough manure or Fern. Planted in the way I have recommended, my own Roses are so healthy and robust as to be little affected by insect pests, and I grow Roses that I should not be afraid to show against our best growers but for my limited quantity. Gloire de Dijon I should think one of the best wall Roses, though it needs special pruning to bloom well. I find that though Roses like moisture, they do not want to be planted in a bog; but I should think too much drainage as bad as too little.—HARTSIDE.

2839.—**Thrips on Orchids.**—In the first place we should inform you that if proper care is exercised, insect plagues will not get such a hold as to necessitate the employment of violent remedial measures. Orchids require constant supervision, searching for and destroying the insect as soon as perceived. Scale is very difficult to eradicate when it has been allowed to obtain firm hold, but perseverance will in time exterminate it. Those who grow Orchids successfully never allow insect pests to get the upper hand, making a point of frequently sponging the foliage, which, whilst benefiting the plants, enables the grower to detect the first appearance of insect life. Solutions of any kind are dangerous in the case of Orchids, the young growths of which are so tender, and are not much favoured by Orchid growers generally.—J. CORNHILL.

2894.—**Plants for Baskets in Winter.** —Tradescantia zebrina is a capital plant for a hanging basket, forming in the course of a season's growth a dense curtain of foliage. Panicum variegatum is a pretty little plant with distinctly marked foliage; and then there is the old but ever beautiful Wandering Jew Saxifrage, one of the very best of subjects for such a purpose, as it will thrive in any situation and is perfectly hardy. A young lady of our acquaintance has made some very pretty hanging baskets, composing them of hardy Ferns and other hardy subjects. The baskets were lined with fresh green Moss gathered from the woods, were then filled with soil, the centre being occupied by a Fern, finishing off with Sedums and Saxifrages, with here a plant of the Wandering Jew and small pieces of variegated Ivy, and the Climbing Toad Flax (Linaria cymbalaria), which were allowed to droop down informally. When established, these baskets presented a fresh and very ornamental appearance, and possessed the advantage of needing but little care to maintain in health.—B.

2799.—**To Keep Rain-water Pure.**—A few words in my answer were mis-read. I said "the bottom an invert, if necessary;" that is to say, if necessary to resist pressure, the bottom should be in the form of an inverted arch; any bricklayer would know what is meant. A pipe to carry the water in and a waste-pipe, of course, are necessary, but not inserted "in the bottom!"—A.B.G.

2843.—**Fruit of Tacsonia mollissima.**—I have never known anybody that cared to eat the fruit of the Tacsonias, although the fruit of Passiflora edulis and the Granadillas are always acceptable. I suppose it is a question of taste; they would not injure anyone that liked them.—E. H.

2834.—**Garden Refuse.**—Mix lime with it, at the same time throwing it into a round heap to ferment; salt and soot may be added with advantage, the former only in small quantities. If fermentation should produce any bad smell, put a layer of dry soil over the heap to prevent the escape of the ammoniacal gases.—E. H.

2844.—**Creeping Jenny.**—The Creeping Jenny is a plant that, as a rule, thrives well anywhere, and is so rarely attacked by enemies, that one reads of your experience with surprise. Your plants are evidently foul and want a good smoking, or to be well sprinkled with Tobacco water. Probably the soil is too stiff, and perhaps sour; also perhaps too wet. The plant is not too choice in its liking for soil which may be fairly good, and including about one-fourth of manure and sharp sand. Perhaps it would be well were you to cut back your plants and re-pot in fresh, good soil; that would no doubt get rid of the blight.

2881.—**Saving Stock Seed.**—The double-flowered plants of Stocks do not produce any seed, but the single plants of the respective kinds only; of these, select the most robust and best coloured and pinch out the points of the flower-spikes, leaving some eight or ten pods on each. These will then ripen fine seed, and a good proportion of double flowers may be looked for next year; but much depends upon the strain. When the seed-pods look brown pull the plants and hang them up till quite dry; then thresh out and put away in small paper bags.

2891.—**Pansies in Pots.**—It is now a good time to put in cuttings of Pansies, the best wood for the purpose being the young growth that comes up so freely from the base of the plants. The cuttings should be put either into a frame or under a hand-light, and in very sharp sandy soil. When rooted, pot up into small pots, and put them into a cool frame on a bed of ashes, and near the glass. Give plenty of air, and protect by covering up from severe frosts. Pinch out the point of the plants to induce side-shoots. Shift again into pots a size larger in March, and yet another shift into larger pots a few weeks later. Keep the plants cool, and give all possible air and light.—A. D.

2878.—**Cocoa-nut for Ornament.**—The Cocoa-nut will not succeed in a greenhouse. It requires a minimum temperature of 55° by night and 60° by day in the winter, also demanding a strong moist heat during the growing season.—C. B.

2837. — **Plants for Aquarium.** — Tradescantia zebrina and Selaginella Kraussiana are two excellent plants for the purpose, as they thrive well in a room. We know of no climbing water plant, but would recommend Valisneria spiralis to be planted at the bottom, and Aponogeton distachyon to float on the surface.—C.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

3003.—**Small's Admirable Apple.**—*H. K.*—Scott describes this Apple as follows: "First size; first quality; November to February; roundish, ovate, and flattened; obtusely angular on the sides; skin of an uniform lemon-yellow; stalk long and slender; eye small and closed, set in rather a deep basin; flesh yellowish, firm, crisp, sweet, and agreeably acid, with a delicate perfume; an excellent kitchen and dessert Apple. The tree is an abundant bearer, is of dwarf habit, and well suited for a miniature orchard."

3004.—**Climbers for Arches.** — Please name a quick-growing climber to cover an arch over garden gate, one that would not die down down in winter.—T. WINSKILL. [Honeysuckle, Clematis flammula, and Jasminum officinale.]

3005.—**Harrison's Musk.**—*G. H. P. J.*—This can only be propagated by means of cuttings, which root quickly in light, sandy soil; equal parts loam and leaf-mould, or decomposed manure with a little sand is a good compost in which to grow it. Plenty of water and good drainage are necessary.

3006.—**Drying Gourds.**—*F. G. H.*—Expose them fully to the sun, and when they are hard and ripe cut them and place them under glass where they will get sun and air, but be protected from frost and wet; they may then be hung in a dry loft or room till wanted.

3007.—**Hybridising Melons and Vegetable Marrows.**—*J. H. M.*—It would probably not be a difficult matter to effect a cross between these, but we fail to see what practical purpose it could serve.

3008.—**Wintering Cannas.**—These may be wintered out-of-doors in well-drained soils if 4 in. or 5 in. deep of ashes be placed on their roots. The safest plan, however, is to lift them in October, cut off some of the tops, and store the roots in soil in any place from which frost is excluded. In spring they may be potted and started in a warm frame or greenhouse. The soil through the winter should just be kept from getting dust dry.

3009.—**Lily of the Valley.**—*S. M. P.*—This will succeed in any aspect, but, for choice, one slightly shaded from the mid-day sun is the best.

3010.—**Cocoa-nut Fibre for Flower Beds.**—Would it be a good plan to cover beds of Carnations with Cocoa-nut fibre during the winter as a protection from frost?—FLOS. [Ashes would be better; Cocoa-nut fibre is liable to harbour snails and slugs.]

3011.—**Apricots and Cherry Trees.**—I have a Moorpark Apricot and two Morello Cherries which were transplanted from nursery to walls of my house so late as last April; the former lost its leader through decay. Now, which branch is leader at the present time—the strong one on one side, or the small one which sprung from below where the old leader was cut off? The Cherries have borne an abundance of fruit, and consequently have made little growth, a few shoots only here and there to be nailed to the wall. I should like to know whether I should incite the trees to more growth by the aid of stimulants, and whether any pruning should be done, and how.—W. H. [We do not see that a leader is needed if you train the tree fan-shape, which is the best for all fruit trees on walls, except perhaps Pears. The Morello Cherry will need no pruning this year. It would be unwise to incite the tree to make growth now. You should not have allowed it to bear much fruit the first year, then you would have got growth. Next year, however, you will probably get growth if you mulch the roots with rotten manure early in summer.]

3012.—**Planting Grape Vines.**—Can anybody advise me how to start a Grape Vine, and the best sort? The house in which it is to grow is a small lean-to greenhouse, at present without heating apparatus, facing the south; the soil outside, in which the Vine would be planted, is clay. How deep should it be dug out? and what compost should be put in in which to place the cuttings? and when should it be done?—F. H. R. P. [Dig out the border to a depth of 3 ft., making the bottom to slope to the front; put 6 in. of rough clinkers or old brick rubbish in the bottom; then a layer of sods, grass side downwards; fill up with turfy loam, in which is mixed a liberal quantity of mortar rubbish; also a bushel or so of ½-inch bones if convenient; broken oyster shells may be used instead of bones, if more convenient to get; a liberal supply of horse-droppings may also be mixed with the soil. Procure what Vines you need at once from some good nursery, and plant them as soon as you get them].

3013.—**Propagating Geraniums.**—Having no greenhouse, can I raise Geraniums from slips indoors? if so, how am I to proceed? Is it unhealthy to have a few plants in a bedroom? [Take off strong cuttings 4 in. in length, cut them just below a joint, remove the lower leaves, and insert the cuttings in pots filled half full of drainage, and the other half with sandy soil made firm. Put about eight cuttings in a 4½-in. pot, and place them in the open air in the shade for a week afterwards; expose them to the sun, and house them when cold weather sets in. Water well when put in, and they will probably require no more for at least a fortnight. They will do no harm in a bedroom.]

3014.—**Propagating Double Stocks.**—Will you or some reader kindly say how double Stocks are propagated? I bought some in pots a month ago, and they are flowering beautifully, but they do not seem to be making seed-pods at all like the single Stocks.—A LEARNER. [Double Stocks never seed. If you have any single flowers with five petals save them for seed, and they will probably produce double flowers next year.]

3015.—**Moss on Fruit Trees.**—*Rev. G. G.*—This usually shows that the trees are getting old and worn out, or that the ground is badly drained. The Moss does little harm except harbouring insects. It may be scraped off with a piece of hoop iron, and the trees may be rubbed over with a little lime and water made of the consistency of paint. Thorough drainage is the only effectual cure.

3016.—**Woodlice in Ornamental Tubs and the Garden generally.**—Can anything be done to get rid of them, as they seem only to be affected by boiling water? They spoil the flowers of Pansies and other things which can be kept from slugs and snails in many ways, and are really a worse plague.—A CONSTANT READER. [Plunge small pots on a level with the ground, and fill them with dry hay, and examine daily.]

3017.—**Plants for Back yard in London.**—I have a little back-yard in the neighbourhood of Bedford Row, W.C., with a border of earth in it which I can renovate and fertilise. What plants could I grow there? Would Chrysanthemums do well there in pots? The walls are rather high.—E. R. [Chrysanthemums would do, also Creeping Jenny, London Pride, Virginian Creeper, and the common Jasmine, but few flowering plants would grow well there.]

3018.—**Roses in Clayey or Gravelly Soil.**—*Eve.*—Roses will thrive in clayey soil provided it is well drained and enriched with good stable manure. On gravelly soils there is little hope of success.

3019.—**Veratrum nigrum and Eryngium maritimum.**—*By a Boy.*—The first belongs to the Order Melanthaceæ, and is known as the Black Hellebore; the second belongs to the Order Umbelliferæ, and is known as the Sea Eryngo or Sea Holly.

3020.—**Cattle Eating Trees.**—*E. B.*—The Cupressus would probably not injure the cattle, but the cattle would injure that, and it would therefore be best to keep them off. The Yew is poisonous, and has been the means of killing cattle in many instances.

3021.—**Earthing up Potatoes.**—What valid reason can be given for piling earth against the stems of Potatoes? Of course, it is well to gather about the plant soil sufficient to protect tubers against actual exposure to the sun. This being done, any obstruction to the admission of light and air must surely be unnecessary, if not slowly mischievous.—CUI BONO. [There are several reasons for earthing up Potatoes: Firstly, it admits of a larger surface of soil being exposed to the sun; consequently the soil is warmer. Secondly, it keeps the tubers drier, especially in heavy soils. Thirdly, it induces roots to be emitted from the stems, and consequently increases the crop. Try both ways with the same kinds of Potatoes and on the same soil, and you will then be able to judge by results whether or not earthing is necessary.]

3022.—**Pau Anemones.**—I have received roots of scarlet Anemones from Pau. Can you tell me when I should plant them, and in what soil?—MYRA. [Plant at once in deep, well drained, sandy soil.]

3023.—**Propagating Compact Blue Lobelias.**—*Constant Reader.*—If you cut off the tops of the plants and work a little sandy soil amongst them, they will soon throw up new growth, and you may then dig them up and part them, as they will be found to have made plenty of young roots.

3024.—**Propagating Clove Pinks.**—I have some strong plants of the above I am anxious to propagate, but am not quite sure as to the procedure, and if the present is the best time. They have just finished blooming, and each plant has five or six offshoots around it of this year's growth; these, I think, do not bloom.—HOKEY POKEY. [Layer the offshoots by pegging them down into some fine sandy soil heaped around the plants.. If you slit the stems upwards from a joint with a sharp knife where they are bent down to the soil they will strike much quicker. See illustrated article in GARDENING, July 12, 1879.]

3025.—**Manure for the Garden.**—I have a small villa garden at Balham. It has been my practice for years to throw all garden refuse, about three or four loads, into a heap out of sight, and every autumn to have it emptied into a hole covered with a double frame-light On the top I put sweepings of paths, then some rotten manure, and lastly about one load of the previous year's decayed mould. In this way I have it the third year for garden beds and potting, besides the use of the frame in winter. Can I substitute chemical for horse manure? and if so, about how much per load? and should it be when filling in or when emptying the frame?—E. B. [The horse manure is the best if you can get it. If you use chemical manure, such as Gyde's Imperial Fertiliser, put a good handful to every bushel of soil.]

3026.—**Propagating Alternantheras and Echeverias.**—I should be glad if any correspondent would tell me how to propagate Alternantheras and Echeverias; also if they can be raised from seed.—G. H. [The former will strike readily at this time of the year from cuttings placed in sandy soil in a close frame or pit, and in spring they will give plenty of cuttings, which strike like weeds in a brisk bottom-heat. Echeverias are propagated from offsets which are formed round the bases of the stems of old plants; also from leaves. Seed will give you more trouble than the plants are worth.]

3027.—**Pruning Cucumbers.**—When is the time to cut down a Cucumber plant which has nearly finished fruiting? and how far down should it be cut so as to make it throw out fresh shoots, in order to produce a second crop of Cucumbers?—JENNIE. [Remove all weak shoots and brown leaves, and also remove all blossoms and buds. If the growth is very thick, cut a few of the main stems clean out. Pinch out the growing points of all the remaining shoots. Give the roots a top-dressing of good soil and manure, give a good soaking with water, and keep the frame or house close and moist till new growth commences, then give more air.]

3028.—**Planting Gooseberries, Currants, and Espalier Apple Trees.**—*Amateur.*—Having a good spit-deep of vegetable soil with a sandy subsoil, your ground needs no further preparation for the trees than digging out the holes and working into each a few shovelfuls of thoroughly rotted manure. The ground between the trees can be manured when the trees require it. October is a good time for planting.

3029.—**Mildewed Roses.**—*La France.*—Give the plants a good watering at the roots, and well dust the tops with flour of sulphur through a pepper-box, over the top of which has been tied a piece of muslin.

3030.—**Improving Soil.**—My garden, an old one, and before I got it nine months ago much neglected, is in town, and the soil is poor, stiff, and sour. I have got some good open loam to work into it, and I am told to get leaf-mould. The latter is very expensive here. Is it necessary? I can get either horse or cow manure. Which would you recommend me to use? I have a border for herbaceous plants, and Carnations, Picotees, and Pinks are my hobby; other beds are filled with the ordinary bedding-out stuff, especially Verbenas, which I like. I should add I had the ground well, but not sufficiently manured in the spring with horse manure. The ground is greatly infested with the thin reddish or yellowish worms, which are so injurious to the roots of Carnations. We call them here red worms. Is there any way of getting rid of them except by picking them out?—HORTUS. [In addition to your fresh loam, give the land a good dressing of lime, salt, and soot; also if you can get it, a liberal quantity of road scrapings or old mortar rubbish. Well incorporate these into the soil with a steel fork, digging down at least a good spit deep, loosening up also the bottom of the trench, into which work a liberal supply of horse manure. Leave the surface as rough as possible to allow the frost to get well into the earth. In spring give a good coating of decomposed cow or horse manure, and well fork it in, and you may then commence to put out your plants.]

3031.—**Air-roots on Vines.**—This year I planted a Vine which threw out a great quantity of air-roots, especially at the base. Finding the Vine was not growing rapidly, I put some earth up to these roots to assist it in its growth. I now find the mound completely full of roots. Would it do for me to remove the earth from these roots and cut them off to allow the proper roots to form outside, not inside the greenhouse, as they are now doing?—E. H. MACMAHON. [Remove the soil by degrees, and the roots will dry up and die, when you may cut them off without injury to the Vine.]

3032.—**Temperature for Geraniums in Winter.**—*Douse.*—If the plants are well exposed to the sun before being housed, so as to get their wood well hardened, they will stand a much lower temperature than if their wood is sappy. Damp in winter often causes more damage than frost. In a low temperature the plants must be kept dry at the top, and they will very seldom need water at the root. Keep all decayed leaves picked off, and if the temperature does not go below 36°, the plants may be wintered with success. Of course a higher temperature would be better if it could be given.

3033.—**Removing Grape Vine.**—*Joe Miller.*—As it is a young Vine, you may move it as soon as the leaves have all fallen and you have done what pruning it needs. Or it may be left till early in spring just before it commences growth. Be careful not to injure any of the roots, and plant in good, turfy loam, to which may be added some horse droppings, a little mortar rubbish, and soot. Give a good watering after planting.

3034.—**Geranium Cuttings.**—About ten days ago I had some Geranium cuttings sent me. I put them in a cold frame, and they looked well and strong. Some of them have blossomed; ought I to take the blooms off? I give them plenty of air in the daytime, and close the frame at 5 o'clock.—TOM. [Remove the blossoms as they appear, and expose the plants to air and sun. Leave air on all night till the weather gets cold.]

Dissolving Bones.—*B. K. H.*—See GARDENING, July 24, 1880.

Fungi on Grapes.—*W. D. M.*—Send us specimens.

Fitting up Greenhouses.—*G. B.*—Do you mean a frame? Surely you do not mean a greenhouse only 4 ft. 6 in. long, and 2½ ft. wide? Tell us more about it.

Vegetation Feeding on Animal Life.—*Eniatnuof.*—See GARDENING, August 2, of last year.

Flower-pot Stove.—*H. H.*—GARDENING, October 25, 1879.

Names of Plants.—*Nemo.*—Send piece of the plant with leaves and flowers attached.——*A. N.*—Gooseberries smashed to a pulp; Strawberry White Queen.——*St. R. B.*—1, yellow, a perennial, common Moneywort (Lysimachia vulgaris); 2, Caper Spurge (Euphorbia lathyris); 3, Scabiosa arvense.——*A. S.*—Adiantum cuneatum.——*Joseph Inman.*—The Marsh Cud-weed (Gnaphalium uliginosum).——*Mark.*—1, one of the garden varieties of Tropæolum; 2, the creeping Fig (Ficus repens).——*S. F. P.*—The Fuchsia is evidently a garden variety and not a species, therefore we could not name it with any degree of certainty.——*T. L.*—1, a species of Globe-flower (Trollius); 2, Fuchsia Prince of Orange apparently; 3, Spiræa filipendula.——*E. G.*—The Giant Knotweed (Polygonum cuspidatum).——*G. L.*—1, The British Maiden-hair Fern (Adiantum Capillus-veneris; 2, Adiantum concinnum, we think; 3, Selaginella Browni; 4, Nephrolepis exaltata; 5, Platyloma rotundifolia.——*D. E. F.*—Ranunculus aconitifolius fl.-pl.——*E. G. F.*—Campanula muralis.——*W. H. A.*—1, Solidago (species); 2, Solidago multiradiata; 3, Chenopodium atriplicifolia; 4, Polygonum amphibium.——*Rev. L. A. B.*—Sedum populifolium.—*Cymro.* 1, Jacob's Ladder (Polemonium cœruleum); 2, Veronica spicata; 3, Erythræa littoralis.——*E. P.*—1, Aster linifolius; 2, too much withered; 3, Spiræa Ulmaria variegata; 4, Clematis vitalba; 5, Spiræa ariæfolia; 6, Veronica spicata; 7, Aster pyrenæus; 8, Helenium autumnale; 9, too much withered; 10, Solidago; 11, no flowers; 12, Agapanthus umbellatus variegatus; kindly be a little more moderate next time.

QUERIES.

To Querists.—*All questions are inserted or answered in these columns free of charge, provided the following rules are observed: 1.—Write clearly and concisely on one side of the paper only. 2.—Use a separate sheet of paper for each query. 3.—Give full name and address, with any nom de plume or initials you may wish used in the paper. Questions only of interest to the persons asking them should be accompanied with a post card or stamped addressed envelope for reply.*

3035.—**Annuals for Spring.**—As this is about the time for sowing hardy annuals for spring blooming, I should like a select list of such, and to be informed of the aspect, nature of soil, mode of sowing, and such particulars as will insure success.—J. G.

3036.—**Small Standard Apple Trees.**—Can any one tell me of any varieties of Apples that when grafted on the common stock and full grown would form small standard trees? and might a graft on the Paradise stock itself grow to 5 ft. or 6 ft., and then take a graft or bud, so as to form a good standard tree? Would the above apply also to the Pear on the Quince stock?—J. J.

3037.—**East Lothian Stocks.**—Early in the month of March I sowed some East Lothian and Intermediate Stocks in a cold frame. Planting them out 1 ft. apart each way, they have grown to be splendid plants crowded with laterals, but they do not yet show any signs of blooming. Would mats stretched over poles save them during the winter? and if so saved, would they bloom next summer? Our winters are very severe.—OLD SUBSCRIBER.

3038.—**Road Sand for Striking Geraniums in.**—I have been told that road sand is such an excellent thing for striking Geraniums in, that although I had always been very successful without it, I gave it a trial, the result being I have not struck one cutting out of one hundred; they rot in a few days. I put 2 in. of this sand on an ordinary good light garden soil, lightly forked it in, made the surface smooth, and dibbled the cuttings in. In the course of a week three-parts of them rotted. Thinking the first batch was too succulent, I put others in, but they went off as before. I resolved to take the whole of them up; I had not a sound cutting in the lot. I also put a portion of this sand with the mould. I prepared for striking Verbenas and Mesembryanthemums and the like with no better success. I come to the conclusion that the road sand was the cause of my failure, but not liking to condemn it myself, I should feel obliged to any practical man to give me his opinion whether road sand is injurious or beneficial for such purposes.—B. T.

3039.—**Berries for Winter Decoration.**—Can any one tell me how to preserve berries, such as those of Pyracanthus and Mountain Ash, so that they may be used during the winter for wearing in the hair, or putting in vases? I have tried putting sealing-wax on the ends, but that method was not successful.—CEDAR.

3040.—**Unfruitful Grape Vine.**—I have a Grape Vine trained against a wall which faces the west. It has never produced any fruit although it has been planted several years; the soil is gravelly. Instructions how to proceed with it would be gratefully received?—EVA.

3041.—**Plants not Flowering.**—This is the second season I have had Phædranassa chloracea, Hæmanthus punicens, and Hedychium Gardnerianum, and I have only succeeded in producing leaves. Can any one tell me the cause of my failure? What kind of soil suits them best? and what are the conditions necessary for success?—G. WATSON.

3042.—**Geraniums and Fuchsias not Flowering.**—Why is it my Geraniums do not flower? and why do the buds of my Fuchsias drop off before arriving at maturity? I have tried them with plenty of water; then I tried watering them every other day, and I have tried rich weak manure water twice a week, and I have repotted them, but with the same result. I cannot get them to flower; the buds always drop off.—N. W.

3043.—**Welsh Names of Hornet, Humble Bee, Wasp.**—Would some Welsh gentleman kindly give us the popular Welsh name of each? Our English-Welsh dictionaries do not give me satisfaction on the subject.—JOHN DAVIES.

3044.—**Lost Roses.**—Will any one kindly tell me where I can procure a root of Rosa sulphurea, the yellow Cabbage Rose, also Mogador, as for some time past I have sought for these Roses in vain?—HARTSIDE.

3045.—**Fuchsia Buds Dropping off.**—Can any reader inform me the reason why the buds of a Fuchsia drop off? The plant is kept in a room, the windows of which are open all the day, and the roots are well supplied with water.—JENNIE.

3046.—**Overgrown Wall Trees.**—Can any one advise me with respect to a Plum tree. It has evidently grown wild for some time, and is now in a very bad condition. Instead of branching out on either side from the stem it is nearly devoid of side branches, the chief growth being situated on the top of the stem and overhanging the wall.—E. H.

3047.—**Insects in Manure Tanks.**—I have a tank for the purpose of collecting house refuse liquid, and I find that it is getting full of insects about ½ in. in length, having a pointed black snout fully ½ in. long, and as other insects may also infest me, I ask the aid of any reader to enable me to exterminate them.—G. M.

3048.—**Woodlice and Earwigs.**—Can any one tell me how to eradicate these pests from the greenhouse?—F.

3049.—**Insects in House Slops.**—Exposed to sun and air for some time, this is said to form a good liquid manure for plants. After rain, however, it becomes infested with some obnoxious living creatures which it would be agreeable to know how to get rid of; they remain actively alive when turned out of the tub on to the hot ground. How are they to be destroyed? and by what means can their formation be prevented?—J. J.

3050.—**Soluble Phenyle.**—I would like to know where I could obtain the fluid known as Little's Soluble Phenyle, of which the ingredients were stated to be a distillation of tar similar to creosote and pure oil, also cost per gallon. I have applied to several druggists, but they seem to know nothing about it?—J. M. G.

3051.—**Drying Tobacco.**—A friend has written to me from the Cape of Good Hope asking for information respecting the growing and drying of Tobacco. Can any one tell me where any information can be had? Are there any publications on this subject? -GOOD HOPE.

3052.—**Daisies on Lawns.**—Will some one afford me a little information as to the most effectual way of destroying Daisies on lawns?—H. M.

3053.—**Grapes not Ripening.**—Will some one give me some information as to the cause of the small stalks on which each Grape is grown turning brown, and so causing the Grapes to become sour and not colouring well?—A. A.

POULTRY.

Chickens.—Early broods will now have arrived at an age which enables their owner to distinguish those worth keeping from the second-rate ones. The former should be forced on to maturity as rapidly as possible before cold weather sets in. Avoid over-crowding; weed out inferior birds by killing and selling; it is astonishing what good effect this will have on the remainder by affording more range and exercise. Often a brood is kept in the same small run week after week, regardless of the fact that the birds have increased ten-fold or more in size since they were first put there. This must result in weakly specimens, with germs of disease ready to burst forth at the slightest provocation. Separate the cockerels from the pullets, especially with precocious breeds such as the Hamburgh or Leghorn. Do not be afraid of killing for the table, as although the birds are not what they would be in a month's time as regards size, yet they are excellent eating, and it is affording the others a fair chance to grow into fine, useful fowls. Be not in a hurry to provide perches for the youngsters at night; it is a fruitful source of crooked breasts and other deformities. Better let them rest on the floor of the house, on which a good layer of dry earth is spread and renewed often. Let all doors and windows remain open day and night, if possible, until the weather gets cold, which will not be for many weeks yet. Supply plenty of old mortar and lime; chickens require it as well as old birds. Bone-dust or meal is an excellent addition to the soft food, as is also a little sulphate of iron in the drinking water, or, better still, Walton's tonic paste. Remove all diseased birds as soon as discovered, as chickens are more liable to infection than old fowls. Keep up the supply of green food where grass is not obtainable; it is as requisite as good Corn.—ANDALUSIAN.

Rearing of Poultry.—Can any one recommend me a reliable book on this subject?—S. R. T.

Spanish Pullets.—I should feel obliged to any reader who would kindly inform me where I could purchase a few really fine, healthy, pure-bred birds of the above variety, with probable price per couple? Must be of good laying stock.—NORTHAMPTON.

Fowls for Laying in Winter.—Do Houdan hens lay as well in winter as Brahmas? I consider them a more delicate bird for the table.—CONSTANT READER.

Broody Hens.—How can I cure hens of wanting to sit now it is too late for hatching?—J. H. B.

Books on Poultry.—Can any one recommend me the most reliable books on rearing poultry?—S. R. T.

Parasites in Chickens.—These can often be got rid of with Keating's powder; but unless fowls are provided with a good covered dusting place, filled at least 6 in. deep with ashes and dry earth, they are always tormented with insects.—B.

Disease in Poultry.—In answer to "M. J." in your issue of Aug. 21, I beg to say that whenever I notice any signs of illness in my poultry, such as refusing food, drooping wings, &c., I at once administer a teaspoonful of castor-oil, poured down their throats from the bottle neck. This has a magical effect, the patient invariably being ready for its breakfast next morning.—E. P.

Houdan Fowls.—Where can I get birds of this breed about twelve months old?—E. M. W.

Aylesbury and other Ducks.—I keep Muscovy ducks. I also have a desire to keep a few white Aylesburys. I cannot keep them separate, and I am told I may let them run together, but that they will not mate. Is this so?—ALPHA.

Salt for Poultry.—Is salt injurious to poultry?—WOOD B.

Best Fowls to Keep.—Which is it best to keep: two Houdan cockerels, or one Houdan and one Minorca, with about thirty pullets?—WOOD B.

Thorough-bred Minorcas.—What are the specialities of a thorough-bred Minorca cockerel? I have one with a comb like that breed, but with no tail.—WOOD B.

Vermin in Fowls' House.—Can any reader inform me the best way of getting rid of lice from the fowls' house? I have lime-washed it but that does not seem to do any good.—W. E. B.

BEES.

MY EXPERIENCE IN BEE KEEPING.

PROBABLY my experience in bee keeping will be interesting to many of your readers. A friend of mine presented me with a large straw-skep, twelve months ago last September, containing a stock of bees from which he had abstracted all the honey and comb; of course they could not obtain a particle of honey that winter, so that I had to feed them with syrup. From that skep I have now six strong stocks in good condition to stand the next winter, and have also taken about 40 lb. of honey. This, considering the weather we have had, I think to be fair work; and although I have not kept a strict account of my expenditure, I am certain I could now sell my bees and make a good profit. I find that judicious "feeding" is the first consideration in bee keeping; and a good hive the second. But as bees cannot be fed without they are hived, I will commence with the latter. When I found last spring that I had wintered so well the first stock of bees, I began to look about me for the best hive to adopt, and with this view I consulted the American and English bee journals, the catalogues of the leading manufacturers, and all works on bee culture that I could lay my hands on. I also paid a visit to the exhibition of the British Bee Keepers' Association at South Kensington—the result of all this was that I made up my mind to use a bar frame hive in some shape or other. For the cheapest I obtained a makeshift Woodbury hive as a pattern; this cost me 4s. 6d. and 2s. for carriage. I found that would not pay, so I tried to make one myself, and succeeded to my own satisfaction; but when I came to utilise the hives I found there was something wrong about them, the bees did not half fill them with comb during the summer, and I had the greatest difficulty in keeping them through the winter. So I consulted a mechanical friend who has a "bee in his bonnet," and we came to the conclusion that the passage for the bees round the end of the frames was were the mischief lay. The bees instinctively leave a space for the passage of air round the end of the combs, but will not adopt that provided for them round the end of the frames, and waste their time and energy in trying to fill it up. This led us to adopt a frame which, I think, will be the most practicable, and as they cost only 1s. 6d. per dozen, they will be within the reach of all. They are made to fit into an ordinary Woodbury hive; they require neither nails or block to fit them together, and a few of them placed side by side, a piece of board (with entrance cut out) at back and front, and the whole pasted together with brown paper, forms a complete hive for 1s. 3d. The frames can be used on the Stewarton, Combination, Italian, or any other principle, with supers, nadirs, or ekes. I have tried them in every way, but the form I like best is a hive about 2 ft. long by 14½ in. wide, with entrance at end, in which I place about nine frames for a brood nest, then a glass dummy board with queen-excluding slit cut out of bottom, giving access to bees to other frames placed behind it; the bees store the honey in the latter, from whence they can be easily taken out and emptied by a slinger, which can be made by an ordinary tinker for a couple of shillings. The frames have another advantage: when fitted in hive with dummy board, there will be a dead air space on three sides, thus requiring less outer covering.

BAR FRAME.

HOME PETS.

King and Queen Parrots.—The most likely place to get the female would be at one of the many shops in Whitechapel and Radcliffe Highway on the arrival of a ship, or advertise for one. They will live out-of-doors in an aviary, and breed if they are not molested by other birds. It is desirable to keep only quiet birds with the king if you wish for any success in breeding. They are natives of Australia, in which country their favourite food is Maize. Feed as directed in my previous article. As to the other smaller parakeet, description is not sufficient for me to tell its name.—A. D'A.

Keeping a Cuckoo.—This is a very difficult matter; at the same time I should like to buy one, as I have been on the look-out for one for a particular purpose.—S. H.

—— I took a cuckoo out of a robin's nest last year, and succeeded in keeping it alive till the middle of November. I fed it on caterpillars as long as I could find them, mostly those on Gooseberry bushes and Cabbages; when they failed I gave it raw meat, cut up into little strips; it preferred that which was soft and flabby. I fed it at first with the points of a pair of scissors, but afterwards it fed itself, and would drink, and once or twice bathed in a saucer placed in its cage. It soon became quite tame with me. It seemed to feel the cold very much, though kept in a room with a fire, and I think that was the cause of its death.—C. C. F.

Thrush Losing its Song.—I have a thrush which has sung very well during the spring, but it gave up all at once its song. It seems quite lively and healthy. Would some kind reader inform me what to give it to make it sing again?—LEEDS.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, doz	..	..	0 3 0 0	Pelargonium (zal) dz bun		3 0	6 0
Arum Lilies	..	..	0 0 0 0	,, (large flower)	..	6 0	12 0
Bouvardia	..	..	1 0 3 0	,, (double)	..	6 0	12 0
Carnations, doz bun	..		4 0 9 6	,, (Rose-scented leaf)		3 0	6 0
Carnations (Tree) doz			1 0 3 0	Phlox, doz bun	..	6 0	9 0
Cornflower, doz bun	..		3 0 6 0	Pinks	.. ..	4 0	9 0
Eschscholtzia	..	..	2 0 6 0	Primula (dbl) dz sprays		0 9	0 0
Eucharis, doz	..	..	5 0 6 0	Roses, doz bun	..	4 0	9 0
Ferns (various) doz bun			4 0 9 0	Stephanotis, doz trusses		3 0	6 0
Fuchsia	..	..	4 0 6 0	Sweet Peas, doz bun	..	3 0	6 0
Gardenia, doz	..	..	3 0 9 0	Sweet Sultan	.. ..	4 0	6 0
Heliotrope, doz bun	..		0 0 6 0	Tropæolums	.. ..	1 0	3 0
Mignonette, doz bun	..		2 0 6 0	Tuberoses, doz	.. ..	1 0	3 0
Myrtle, doz bun	..		0 0 6 0				

Pot Plants.

Arbor-vitæ (golden), dz			9 0 18 0	Euonymus (variegated)		8 0	18 0
,, (common)			6 0 12 0	Ferns	.. ..	6 0	18 0
Aralia Sieboldi, doz	..		12 0 30 0	Ferns (small) per boz		3 0	5 0
Begonias, doz	..	..	6 0 12 0	Ficus elastica, doz	..	18 0	60 0
,, (fine-foliaged)	..		6 0 12 0	Fuchsias	.. ..	6 0	12 0
Berberis	..	..	4 0 9 0	Gardenias	.. ..	18 0	36 0
Bouvardias	..	..	12 0 18 0	Mignonette	.. ..	4 0	6 0
Clematis	..	..	9 0 19 0	Nasturtiums	.. ..	3 3	6 0
Crotons	..	..	12 0 42 0	Palms (large) pair	..	15 0	42 0
Dracæna (green)	..		12 0 30 0	Palms (small) doz	..	18 0	60 0
,, (variegated)	..		18 0 60 0	Pelargoniums (scarlet)		2 6	9 0
Echeverias	..	..	4 0 6 0	,, (double)		6 0	13 0
Euonymus	..	..	6 0 12 0	Selaginella	.. ..	3 0	4 9

Fruit.

Apples (culinary) bush			4 0 5 0	Pears (dessert kinds), dz		2 0	3 0
Grapes (English) lb	..		2 0 5 0	Pine-apples (St Michs) ea		5 0	15 0
Lemons, box	..	..	3 0 0 3 5 0	,, (English) lb		2 0	4 0
Oranges, 100	..	..	8 0 16 0				

Vegetables.

Beans (French), lb	..		0 2 0 6	Lettuce, score	.. ..	0 4	10 0
,, (Runner)	..		1½ 0 0 2	Leeks, doz bun	..	1 6	3 0
Cabbages, tally	..		1 0 2 4	Mint	.. ..	4 0	6 0
Carrots, doz bun	..		4 0 5 0	Mushrooms, pottle	..	1 3	1 9
Cauliflowers	..	..	0 4 0 6	Potatoes (rud knds) ton			100s. to 200s.
Celery, bundle	..	..	1 0 2 0	,, (Kidney), ton			120s. to 180s.
Corn Salad, half sieve			0 0 2 0	Parsley, doz bun	..	2 0	4 0
Cress (plain), doz pun			0 6 2 0	Radish, doz bun	..	1 6	3 0
,, (Watercress) dz bun			0 9 1 0	Spinach, bus	.. ..	0 0	2 0
Cucumbers, doz	..		2 6 5 0	Turnips, doz bun	..	4 0	5 0
Endive	..	..	2 0 3 0				
Garlic lb	..	..	0 0 0 6				
Horseradish, bun	..		3 0 5 0				

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

DOUBLE-FLOWERED CHERRIES.

THESE rank among the most beautiful of hardy spring and early summer-flowering trees and shrubs, being loaded with flowers varying in colour from bright red to snowy whiteness; the flowers are generally produced upon small spurs from ½ in. to 2 in. in length, which arise mostly from the sides and ends of the two or three year or older branches, and, like all double flowers, last much longer in perfection than single ones. The double Cherries will grow in any firm loam soil, and in towns they flower profusely in early spring. Dwarf bushy plants of double Cherries grown in pots are handsome objects for conservatory or greenhouse decoration. They are easily grown, only requiring to be potted in firm loamy soil, placed out-of-doors plunged in ashes in a sunny situation during summer, and taken into the greenhouse in autumn, when they will flower some weeks before those out-of-doors open their blossoms. There are various species and varieties of double Cherries, among which the following may be mentioned as the best: Saint Julian Cherry (Cerasus Juliana floribus-roseis).—This forms a tree from 20 ft. to 30 ft. high, with the branches ascending when young, and when in the adult state hardly spreading; the leaves are smooth, and appear along with the flowers; the latter are semi-double, large, and of a pale rose colour when fully expanded, but of a deep red or crimson when in the bud state. It is a very handsome kind when in flower, and all the cultivated varieties named Geans in England, and those named Guignes in France, belong to it. Common Double-flowered Cherry (C. Avium multiplex).—This is the old double-blossomed Cherry of gardens; it forms a tolerably large tree, with rather a dense, roundish head, loaded in May with drooping double white flowers. It is known in some parts of England as the double Carone Cherry. There are two double-flowered forms of this kind—one with semi-double flowers and the other with all the stamens changed into petals and the pistils into green leaves more curious than ornamental. Double French Cherry (C. duracina fl.-pl.).—This forms a robust tree 30 ft. or 40 ft. high, which in May becomes loaded with festoons of large, drooping, snow-white flowers. It is the double form of the Bigarreau Cherry. This is the finest of all the double-blossomed Cherries, and resembles in every respect the common Bigarreau. Yung-To or Chinese Cherry (C. serrulata).—This forms a robust shrub or small tree 6 ft. or 8 ft. high, with stout, divaricate branches, having but few laterals. The leaves are moderately large, pointed, and quite smooth. The flowers, which are semi-double, are produced in bunches on the two or three-year-old branches; they are white when first they expand, but before they fade become tinged with pink. It is a very ornamental kind, and well suited for planting in the front of shrubberries. It flowers in April, and is perfectly hardy. Japan Cherry (Cerasus japonica multiplex).—This is a very handsome, neat, dwarf bush, from 2 ft. to 4 ft. high, with ovate, pointed, smooth, shining leaves; the naked shoots are slender, of a purplish colour, and

DOUBLE WHITE CHINESE CHERRY.

numerous ; the flowers, which are pale blush, are produced in great profusion from March to May ; the fruit is round and about the size of a Pea. It is a native of Japan, and as it flowers early is liable to get injured when planted in the open border ; it is best planted against a south wall, where it forms a very beautiful object. There is a variety of this kind, the dwarf, double white-flowered Japan Cherry, a kind rather more robust in habit and rather larger, and more double, the flowers being pure white. It is a very handsome and distinct variety, found in the north of China, but has its blossoms injured by the spring frost when planted in the open border. Three-lobed leaved Chinese Cherry (C. triloba).—This forms a low bush 3 ft. or 4 ft. high, and produces early in spring, before the leaves appear, fine, large, double, pale pink blossoms ; the leaves are somewhat large, wrinkled, and of various shapes, some being broadly oval, with three acute lobes towards the apez, while others are oval, and free from any lobes, but they are all coarsely serrated on the edges, and bright green. It is a native of the north of China, and quite hardy, but suffers from the spring frost when in bloom and planted in the open border. It has been named Amygdalopsis Lindeyi by a French writer. It is a very beautiful shrub, but one which gets injured by the spring frost when in flower.

CLEMATIS LANUGINOSA AND ITS VARIETIES.

THE Clematis is now acknowledged to be one of our most valuable and beautiful garden plants. The rich shades of blue and purple which so many of the varieties of the Jackmani section possess are extremely effective, especially in the case of highly developed specimens. Whether trained to poles, over rustic archways, or allowed to scramble irregularly amongst the surrounding vegetation, or made to cover the surface soil with a dense mass of flowers and foliage, they are equally beautiful and effective, and deserve all the pains which may be necessary to ensure their well-being. Not less beautiful, although not quite so showy, are the varieties of the lanuginosa type. These are mostly distinguished by the large dimensions of the individual blooms and the delicacy of colouring which they display. The colours run mostly into shades of white, blue, and lavender, some of the white kinds, which are either suffused or striped with lavender, mauve, or violet, being very attractive. It is, however, when seen in combination with the dark-flowered varieties that their peculiar charms receive due recognition. I do not know of anything more strikingly effective than the contrast which such kinds as Jackmani, rubro-violacea, lanuginosa nivea, and l. candida afford when planted in close proximity. C. lanuginosa itself, although a beautiful species, never attained universal popularity in English gardens, a fact which may be attributed to a lack of vigour of constitution. In some places where the soil is warm and well drained it grows with freedom and flowers profusely, but it is only in such situations that it should be planted. Where the natural staple is cold and damp it is apt to succumb to the rigour of a severe winter. This defect is not so strongly marked in its hybrid varieties, which, when planted with care in suitable soil and otherwise liberally treated, increase with each succeeding year in luxuriance and beauty. In any case, however, they cannot be said to be quite so strong and robust as the varieties of the Jackmani, Viticella, and patens groups, and are therefore not so well adapted for planting in the near vicinity of shrubs, trees, or amongst strong vegetation. Nor do they rush away into growth at such a rapid rate when newly planted, but require one or two seasons' careful culture until they get established, when they reward such care by a lavish display of bloom, lasting in beauty generally until cold weather sets in.

The rough and ready mode of pruning found to answer in the case of the Jackmani and Viticella types will not do for the lanuginosa varieties. The knife in their case must be used with discretion ; only the weakly shoots should be cut away, and the strong growths must be shortened back merely, as it is from shoots made from the well-ripened wood of the preceding season that flowers are produced. An injudicious method of planting combined with a bad system, or more frequently perhaps no system at all, of pruning has caused many to fail, or at any rate has hindered them from obtaining a just conception of the merits of this particular section of the Clematis family. Even where the most unfavourable conditions in the matter of soil exist it lies in the power of the grower to counteract them, and to ensure a free tolerably strong development even the first year of planting. A very sandy parching soil offers no particular difficulties. It has merely to be deeply stirred, richly manured, and well mulched and watered during the growing season, and all will go well. In such soil the root fibres will be in no danger of suffering from excess of moisture in the winter. If at the same time a little sound loam can be added there will remain nothing more to be desired.

Where the natural staple is of a cold, retentive character the case is very different, and a very careful preparation must be made, or, especially in the case of stiff, undrained clays, but poor results will be obtained. There are, however, always ways and means of rendering the most tenacious and impermeable of soils mellow and free. These means are sufficiently well known to practical growers, but for the benefit of the uninitiated I may mention wood ashes, leaf-mould, river sand, mortar, and brick rubbish, each and all of them capable of imparting to a stiff, retentive soil the desired amount of porosity. Throw the natural soil out before winter arrives, or, better still, do so in the summer, so that sun and air—both of which do their work better than frost and wind—may thoroughly sweeten and bring it into a mellow, workable state. Incorporate with it such materials as may be procurable and plant about the middle of October. In March mulch them with 3 in. or 4 in. of manure ; water when necessary, and there will be but little fear of them not making good growth. Clematises are grown for sale in small pots, and it often happens that the ball of soil is somewhat hard. Many do not trouble to loosen this body of earth, but plant it entire, with the consequent effect that it becomes dry, and, remaining so, the roots cannot get away from it into the new soil. The plant, therefore, starves in the midst of plenty. Plants thus set in the earth are generally years before they make a free start. Every particle of the old soil should be worked gently away and the roots spread out upon the prepared compost, when, finding themselves at home, they immediately form fresh feeders, and are in the best of condition for breaking anew into life when the season arrives for them to do so.

A short time since allusion was made in the columns of *The Garden* to the merits of lanuginosa nivea, a white flowered kind, the blooms of which at times when first expanded exhibit a faint tinge of lavender, but which quickly bleach to a snowy whiteness, thus justifying its varietal designation. When seen in the form of well-developed masses, this variety is very effective, especially so when trained to poles or over a short trellis, and backed up by evergreens. The most effective white flowered kind is, however, found in l. candida, the individual flowers of which are large, though not so purely white as those of nivea. This is a grand variety, and the best of the light flowered kinds for bedding purposes, being of robust growth and a free flowerer. Amongst other light coloured varieties may be mentioned Otto Frœbel, having immense grayish-white flowers ; Lady Caroline Neville, French-white with mauve bands ; and Mrs. Moore, white, suffused with mauve. Of the blues there are Aureliana, very attractive ; Beauty of Surrey, light grayish-blue ; Gem, lavender-blue ; and Robert Hanbury. Other kinds, including shades of mauve, lavender, and violet, consist of Lawsoniana, La Mauve, Mrs. Hope, Symesiana, and Ornata. J. C.

A Well-grown Virginian Creeper.—It may interest some of your readers to know there is an Ampelopsis Veitchi planted at the back of one of the houses in Wilson Road, Camberwell, about twelve years since, that had climbed without support at any time to the roof of the house three or four years ago, and, having been cut away from the gutter, has covered the backs of four houses in the row, each about 18 ft. wide. The aspect is N.W., and it was planted in turfy loam in a corner that had been filled in after building with virgin soil out of the foundations of the houses. The main stem is about 2 in. in diameter. It can be seen from Camberwell Churchyard.—E. B.

VEGETABLES.

HOW TO GROW BRUSSELS SPROUTS.

THE Brussels Sprouts is undoubtedly one of the best and hardiest of our winter Greens, and ought to be found in every cottage garden in the country. Although nearly related to the Savoy, it is superior to that kind of Cabbage both in flavour and productiveness, and is at least quite as hardy. In the severe winter of 1860-61 I saw several instances where the Savoy had succumbed to the severity of the weather, while the Brussels Sprout had withstood it with comparative impunity. There are several varieties of it named in seedsmen's catalogues, but I think it is at least doubtful if they are really distinct. No doubt much has, and may still be, done to improve it by persistently carrying out a system of selecting seed from the best and most prolific plants only, and I do not know any vegetable that will better repay any extra care or trouble incurred in carrying this matter out in a thoroughly practical manner.

Sowing.—In the north and cold wet districts generally, to have Brussels Sprouts in season from October to March, the first sowing should be made in October. Sow thinly on a warm south border, and when the plants come up thin them out to prevent them drawing each other up weakly ; the thinnings may, if necessary, be pricked out. In October all seeds of the Cabbage tribe vegetate with the greatest certainty, and there is a strength and vigour about the young plants that is often absent from those raised from seeds sown early in spring. Whenever circumstances have prevented autumn sowing it is highly desirable, if the means are at hand, to sow a few seeds in a box in some spare corner under glass early in February, not necessarily in a warm house, as the plants will come up weakly, but in some cool airy structure, where they can be easily protected from the attacks of the many enemies to which early-sown seeds in the open air are liable. There is, I think, no question that if Brussels Sprouts were sown earlier, and had, consequently, a longer time for growth, the result would be satisfactory. Sow again in the open air in March and also in April for use in spring.

Planting.—The first plantation should be made early in May, in order to give the plants time to attain their fullest development by October or November, and as they should, when full grown, be at least 3 ft. high and stout in proportion, more space should be allotted to them than will be required for later crops ; 3 ft. will not be too much space between the rows, and 2 ft. from plant to plant. The demand must regulate the supply, but other plantations may be made at intervals when land becomes vacant till the middle, or, in warm situations, to the end of July, after which time—except, for instance, in a season like the present—they cannot be expected to attain a profitable size.

Soil.—In the matter of soil Brussels Sprouts are not at all particular, provided it is well and deeply cultivated and fairly manured. Poor sandy soil will require a heavy dressing of good manure, whilst lime and burnt clay may be beneficially applied to cold clayey land in preference to rank manure just previous to planting, which would have a tendency to produce gross open Sprouts instead of the close medium-sized buttons so much appreciated. Plant the successional crops as far as possible in the different aspects—even altering the direction of the rows will make some difference ; and a few should, if possible, be planted on the north side of a wall, fence, or screen of some kind. Frequent stirrings of the soil, general clean culture, and removing decaying leaves add to their growth and cleanly appearance, and ought to be insisted on.

Earthings.—As regards earthing up the stems, I have grown them, both with and without that assistance, with much about the same result. In windy places I should certainly recommend earthing up, in order to enable them to resist wind power; but as Brussels Sprouts, unlike Cabbage or Broccoli, bear all up the stems, it is not desirable to bury them to any great depth beyond giving them necessary support. Do not cut out the Cabbage-like heart from the centre of the plant till the crop is fit for gathering; and if a really good plant or two can be spared, save your own seed. The London market gardeners prefer, as a rule, stems of medium length, from which they think they get the hardest and best sprouts; with them, however, Brussels Sprouts are chiefly grown as catch crops. H.

Sowing Asparagus Seed.—Asparagus is propagated by seed, which may either be sown when ripe in October, or in spring; but the latter time is considered the best. It may either be sown on the ground prepared for the plantation, or in drills 1 ft. apart in beds of light, rich, sandy soil, and transplanted to a permanent position when one year old, which is by far the most desirable method. To get strong clean plants at one year old, and to save a year's strength, sow thin, and hoe out quickly after the plants are up, with a sharp one-hand 3-in. hoe, or otherwise thin the plants to 3 in. or 4 in. apart, taking care to select all the strongest plants to stand; thus very strong clean plants may be produced in one year. By keeping the seed-beds carefully hoed and free from weeds, the plants will be in fine condition for planting out the following spring; whereas, should they be neglected, it will take two years before they are as large as well-attended one-year-old plants. It is in consequence of this very common neglect that many cultivators labour under the impression that the plants must be two or three years old before planting, which is undoubtedly a mistake, for all good growers invariably plant one-year-old plants, and count on reaping a crop the third spring from the time of sowing. One pound of seed will produce about 3000 plants. In order to save seed, some of the finest shoots which push in the early part of the season from certain crowns should be allowed to run to seed. These should have the full benefit of exposure to light and air; and as they advance in growth they must be firmly staked to prevent breakage by wind. When fully ripe, the largest and finest berries of the deepest red colour should be selected. They should then be carefully and gradually dried; or they may, after lying about ten days, be squeezed between the hands, and the pulp washed away; but by the former method they keep the longest.

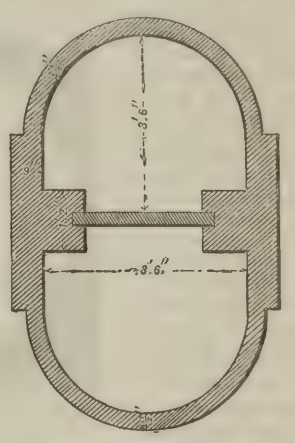
Cabbages.—A good piece of ground upon which to plant early Cabbages should now be dug over. Those sown in July will by this time be large enough to plant out. It is not well to manure heavily at the time of preparing the ground, for if much is put in for this crop, it has the effect of inducing over-luxuriant growth, which should be avoided. Although the Cabbage is very hardy, yet if the plants are forced into rank growth, they are often cut off in severe winters; consequently, it is better at this season to plant on soils that have been manured well for some previous crop. Ground where Onions have been grown, and which by this time will be cleared, will, if simply dug over, answer all purposes. In planting at this season, some distinction should be made in the different kinds; small-growing sorts, such as the Cocoa-nut, may be put in 9 in. apart in the rows, with intervals of 2 ft. between the rows. In the spring, as soon as they are at all fit for use, every other one can be taken out, leaving the remainder to develop more fully. Larger kinds, like Enfield Market, should be put in 1 ft. apart in the rows, in like manner taking out in the spring every alternate Cabbage; these larger growers should also have 2 ft. between the rows. When putting them out use a little soot and lime to each plant, for although this autumn-planted crop is not liable to suffer through clubbing in the way that the spring and summer plantings do, still these have the effect of keeping away slugs. In planting all the Brassica family, amateur gardeners are apt to err in either not putting them in sufficiently deep, or go to the other extreme of half burying the leaves. If the former mistake is made the wind blows them about in a way that does much mischief; and if too deep they do not do well. Whatever size the plants are they should be planted so that the bottom leaves will be on a level with the surface; this does away with the necessity for making the ridges too high in hoeing up. If the land is moderately dry it is a good plan to make with the hoe shallow trenches 5 in. or 6 in. deep, planting in the bottom of these. The advantage of this is that a portion of the soil in the so-formed intervening ridges can be drawn to support the plants before winter, and the remainder thus a little elevated acts as a protection from cutting, frosty winds, and in the spring can be put to the plants, still leaving them nearly on a level with the surface, thus enabling the whole of the roots to receive fuller benefit from rain than if placed on a high ridge that throws off the water. In ground that is insufficiently drained this plan will not answer for autumn planting, as the crop would be liable to suffer from too much wet. All the Cabbage family are surface-rooting, and do not push their roots down to any considerable depth; consequently, unless where the soil is extremely shallow, the above practice may with advantage be followed. For the summer crops this system can also be recommended, as it admits of the plants being earthed up sufficently without a ridge of any consequence being formed, and which, for the reason above stated, is better absent. When the space intended for the principal crop is filled, it is advisable to prepare a small corner in which to put some plants for a reserve; these may be pricked out about 6 in. apart, and will come in for filling up any gaps that may occur through the effects of a severe winter.

MY EXPERIENCE OF GARDENING UNDER DIFFICULTIES.

HAVING seen the experiences of many successful and unsuccessful amateurs in GARDENING ILLUSTRATED, and having derived much benefit from them, I thought a little of my experience of gardening under difficulties might be acceptable. My garden is situated next to some large smoky saw-mills in the metropolis of Ireland, and measures only 32 ft. by 24 ft. When I came into possession the soil consisted of loam with a large proportion of builders' rubbish. This I had put aside, and the contents of the ashpit put underneath as drainage, and then placed over it a compost of old manure from a spent hotbed, soil of the garden, and a few loads of fibrous (as we call it mountain) loam, thus making a fair soil of what I was told would not grow even weeds. I then put up three glass houses round three of the four walls bounding the garden, those houses forming one continuous house, each house being 6 ft. high behind, 2 ft. in front, 10 ft. broad, and 15 ft. long, the materials of which cost me about £4 2s. each house (of course, I did the work myself), being sixteen sash bars 14 ft. by 3 in. by 1½ in., rabbited, at 1s. each, 16s.; sheeting for front (the back was the wall) and for staging, 9s.; nails, &c., 4s.; the ends were the walls of the garden; the glazing of each house cost £2 14s., at 3½d. per square foot of 21-oz. glass glazed; I could have got it 1d. cheaper unglazed, but find it cheaper to have it glazed by tradesmen, thereby avoiding the cost of breakages during the glazing. Each of the sash bars make the roof, which is ¾-span, 3 ft. 6 in. behind, and 9 ft. 6 in. in front. I find this is a good angle to catch the sun's rays.

Having got up the houses, I commenced to stock them. To do this I obtained a list of cuttings of Pelargoniums, &c. I obtained the ones I thought would suit at 2d. per cutting, so that by autumn I had a stock of fairly-rooted plants for next year. The question now came, how was I to save them in an unheated greenhouse in the winter? To do this I purchased an old tubular boiler in good order and a quantity of rain-water pipes (these I find heat as well and are as durable, with ordinary caution, as the hot-water pipes, with the advantage of being much cheaper), and with these I constructed my heating apparatus, which kept up during the past hard winter a temperature of from 42° to 50° Fahr., and now I have a fine variety of plants of various kinds, as, for instance, 210 different varieties of zonal Pelargoniums, including the latest, twenty varieties of French and fancy Pelargoniums, besides several varieties of Fuchsias, &c.; all these I keep in the greenhouses for summer bloom. I also keep Cinerarias, Calceolarias, and Primulas for winter bloom along with Chrysanthemums. These I keep during summer on shelves fastened on the remaining wall of the garden until taken in in the winter. In the small piece of garden I chiefly cultivate Stocks, Asters, Phlox Drummondi, Golden Feather, Lobelia, and Pansies. These I find to do very well, with the exception of the Pansies, which drop off soon after blooming, the cause of which I would like to know. All my plants are grown in 6-in. pots and smaller sizes. When pot-bound I give them weak guano water (about a tablespoonful to the gallon) but twice weekly; by this treatment they do wonderfully, the trusses being very large, and the foliage fine and healthy. I shall be happy to give any of my fellow readers of GARDENING any information they require to the best of my ability. NELLA NHOJ.

Manure Tank.—I submit for the benefit of your readers a plan of a manure cistern given to me some years ago by an architect. Cesspool to be formed low enough to give a rapid fall to drain pipes, 7 ft. in length, 3 ft. 6 in. wide, and 8 ft. deep. 9-in. sides built in mortar and lined thoroughout in cement, bottom brick on edge. To have an overflow pipe from the compartment farthest from the house, to be fitted with a 6-in. flap trap. The middle part



Cistern for Manure Water.

to be fitted with 2-in. old Oak boards about 7 in. deep, placed in the grooves of brickwork for the water to drain off from the more solid parts, to be pumped up as required. An Oak frame and cover to be placed over the centre 2 ft. by 3 ft. in the clear. This will give access to both tanks. The other part to be covered over with rough flagging. An iron pump to be supplied and fitted to the Oak cover, to draw from the liquid tank. One side of the tank would hold about 500 gallons of liquid.

Glasnevin Botanic Gardens.—I would strongly recommend any of your readers who may be in Dublin during the next few weeks to pay a visit to the Botanic Gardens at Glasnevin. The fine weather has done wonders, and the display of colour out-of-doors is really magnificent. These beautiful gardens are admirably kept. They are easily reached from the city by the North Dublin tramcars, which pass the gates every few minutes, and there is no charge for admission.—W.

Notes from Devon.—In South Devon, little more than four miles from Dawlish, as the crow flies, frost cut down Clematis Jackmani to the ground the first week in June when it had made vigorous growth, and again on the 7th of August when it was just bursting into flower. On the second occasion, Runner Beans, Lonicera flexuosa, and Clematis Lady Londesborough were all struck in the same line, facing west, after a heavy westerly gale blowing all that day followed by a very brilliant starry night.—J. A.

—— I read much about a wet season and soaking ground, while in this part of Devon we have had a very dry spring and summer; so much so, that it has been next to impossible to

keep fresh plantings even of last October and March alive with any amount of watering. Potatoes are good all round, Early American Rose giving clear well-grown tubers of 18 oz. each. Late sorts are sound, but not doing so well, as we had twenty-four hours' rain about a month ago after a long drought, and this set them growing again, sending out at the same time fresh roots with tubers forming all round the crop Potatoes. The haulm of Magnum Bonum is at least 4 ft. high and ½ in. in diameter.—C. E.

HARDY FLOWERS FOR SMALL GARDENS.

JUDGING from what one sees in villa and small gardens generally, it would appear that their owners are but little acquainted with the wealth of hardy flowering plants now at our disposal for open-air decoration during the spring and early summer months. I feel convinced that the cheerless, flowerless aspect of such gardens during the early months of the year is to be attributed rather to defective knowledge than to a want of appreciation of the merits of those beautiful hardy flowering plants which bloom so freely and are so effective at that season. Allow me to remind your readers that no amount of brilliancy during the latter part of the summer and early autumn months can compensate for the almost complete dearth of colour which characterises the generality of small gardens, and which is too often observable in those of larger dimensions during the early months of the year. Whoever wishes to derive these enjoyments from his garden must create permanent interest therein, and this can only be accomplished by planting such flowering plants as come into bloom at different periods of the year, commencing with the Snowdrop and finishing with the Christmas Rose. Many have objected to hardy flowering plants on the ground that their blooming period is of short duration. This objection cannot, however, now hold good, for we possess at the present time a race of plants which unfold their cheerful showy blooms with the first glimpse of the spring sun, flower profusely and continuously throughout the summer, and are withal of such a hardy enduring nature, that they require no protection during the winter months, and demand but little cultural care throughout the flowering season. I allude to the so-called bedding

Bedding Violas.

Pansies and Violas, plants appreciated by some who have developed their capacities to the fullest extent, but which are, as a rule, too little known. What tender bedding plants, for instance, can surpass in beauty a mass of Cliveden Blue or Purple Pansy or Golden Gem Viola? Bedding plants may some of them bear away the palm for brilliancy, but for refinement and delicacy of colour they are on the whole inferior to these hardy subjects. The bedding Pansies are a most valuable acquisition to our gardens, as by their means we obtain, at a time when the ordinary run of tender bedding plants are being committed to the ground, glowing masses of colour, rendering the pleasure ground bright and gay long before these tender subjects recover from the checks and chills which they always more or less experience when placed in the open air. I would ask your readers to compare a garden in which a judicious employment is made of this pretty hardy flower with those entirely planted with the usual run of Geraniums, Verbenas, &c. On the one hand, we have brightness and beauty; on the other, flowerless plants, presenting for weeks a stunted, starved, unhappy appearance. Of both Pansies and Violas there are many varieties, some coming into bloom and creating a brilliant effect at a very early period, others more tardy of flowering, but producing a profusion of bloom throughout the summer. There are the Cliveden varieties, comprising a beautiful blue, a rich purple, a chaste white, and a bright yellow. Other varieties consist of Blue King, Cremorne (yellow), Dickson's Queen (pure white), Magpie (very pretty and distinct), and Chieftain (clear blue). The individual blooms of the Violas are not generally so large as those of the Pansy, but they are produced in such profusion throughout the summer, as to render well-grown masses highly ornamental. There are many varieties of this useful hardy flowering plant, comprising shades of yellow, blue, mauve, purple, as well as pure white. Bluebell is a highly recommendable kind, of dwarf, compact habit, flowering continuously from early spring till quite late in the autumn; Enchantress has mauve-coloured flowers, large and distinct; Loveliness is a beautiful variety, with purplish-violet flowers; and Mulberry is a distinct and effective kind, the name giving a true idea of the colour of the blooms. Of yellow, there are Queen of Yellows (a splendid bedding kind), lutea grandiflora major (pure yellow, very fine), and Golden Gem (not mis-named, and which is the most beautiful and effective of the yellow kinds). White Swan is, as the name indicates, a pure white kind; it has large flowers of good quality. Half-a-dozen kinds of Pansies and as many Violas, chosen with respect to variety and effectiveness, would alone suffice to render a garden gay and cheerful not only during the early months of the year, when the advent of sunny days brings with it a craving for bright flowers, but if afforded but a slight portion of that care indispensable to the welfare of tender plants, they will continue to flower vigorously throughout the summer.

The necessary attention consists in giving to each plant a good mulch of rotten manure, watering copiously in hot weather, and picking off decayed flowers, so that the plants do not exhaust themselves by seeding. It is at the same time advisable to put in a few cuttings every year about the beginning of June, dibbling them into a piece of nice fine light soil about 6 in. apart. These will form nice compact little plants by the autumn, and will serve to replace such blooming plants as have become exhausted or too straggling. I would indeed prefer to thus renew the stock every year, rooting up the old specimens about the beginning of October, and replacing them with these young thrifty plants, which, as a rule, produce finer blooms than the old stools. This yearly renewal will also enable the grower to well stir and well manure the soil, a point of great importance in the culture of these free and continuous blooming subjects. Those who may wish to do so may include in their collection a few of the best named show kinds, or they may sow anywhere during the summer months a little seed of the so-called fancy varieties, pricking out the plants when large enough to handle in a bed of prepared soil, and planting them in their permanent quarters during the autumn months. A bed of seedling Pansies is an interesting feature in a garden in the early part of the year, and when past its best may, if so desired, be replanted with Chrysanthemums, or a few good plants of Paris Daisy, or some seedling Petunias, which quickly grow into flowering plants, may be kept back for that purpose. The better way, however, supposing the Pansies to be planted in a bed in the Grass, would be to fill the centre with Lobelia fulgens. Japanese Anemones in mixed varieties, or herbaceous Phlox, which would form a telling feature at a later period, in which case the Pansies might remain as a bordering, or they might be replaced with Mignonette. For early spring flowering few things are more effective than

Myosotis dissitiflora, Silene pendula, and its dwarf variety. The latter plant is a gem, its extremely dwarf compact habit rendering it suitable for the smaller garden. I have remarked that the Wood Forget-me-not (Myosotis sylvatica) appears to be much more extensively grown than its congener M. dissitiflora. This I consider to be a mistake, as the latter is by far the most effective plant, either individually or in a mass. The first-named kind has a somewhat upright habit, and, after the first burst of bloom, presents a rather naked appearance, which becomes more marked as the season advances, a defect not observable in dissitiflora. The fact of M. sylvatica being of a more hardy nature may account for the preference shown it, but if young plants of dissitiflora are grown, they rarely sustain any material injury; whereas old stools, through holding a greater amount of moisture in the foliage, are generally destroyed when subjected to the vicissitudes of a severe winter. A slight protection of litter would, however, make all secure, and this plant displays such a beautiful shade of blue, as to render its presence almost indispensable in the pleasure ground, and warrants any small amount of labour which may be necessary to ensure its flowering in perfection. Both the Silene and Myosotis should be sown about the latter end of July in an open sunny situation. Prick out the seedlings when large enough about 6 in. apart, transplanting them to their winter quarters as early in the autumn as possible. Flowering bulbs of some kind should find a place in every garden. There are generally situations to be found in which some of the many beautiful varieties of Narcissus, Scillas, Crocus, Tulips, &c., may find a congenial home, where they may remain from year to year undisturbed, where their roots would not be mutilated by the spade, and where they would yearly increase in beauty and effectiveness. It is a mistake to plant bulbous-rooted plants in beds which have annually to be deeply dug. They not only do not appear at home in such places, but the yearly disturbance of the root prevents their attaining the amount of luxuriance necessary to give a true idea of their beauty. Spring-flowering bulbs of most kinds flourish best when growing in the shelter of a stronger vegetation, and should be grouped irregularly and naturally, not in rigid lines and formal circles, as is too often the case. No class of plants lends itself so ill to geometric gardening or appears so entirely misplaced when thus employed as that of flowering bulbs. The greater portion of them grow naturally amongst herbage of some kind, where the roots and bulbs are at all times well protected. The grower should, therefore, endeavour to imitate as far as may be these natural conditions. A charming plant for any garden is Anemone apennina. It should be allowed to remain and extend itself at will, and if the soil is well prepared for its reception, it will rapidly increase, producing, when its numerous mauve-coloured flowers are fully expanded, a most pleasing and cheerful effect.

There is also the scarlet Windflower (Anemone fulgens), with flowers of dazzling brilliancy, and Anemone japonica, already alluded to, a plant not nearly so much grown as it should be. Both the white and red varieties should be grown, and if planted together they will form a most pleasing picture at a time when most plants are quite past their best. Few flowering plants possess the power of resisting uninjured a continuance of inclement weather as does this beautiful Japanese Anemone. It flowers brightly and freely amidst the gloom and fogs of the autumn months, imparting colour and freshness at a time when such is sorely needed. There is also the pretty little Wood Anemone, which well deserves a place in the garden. A

very pretty effect is obtained by massing this plant with such subjects as Triteleia uniflora, the Dog's-tooth Violet, Scillas, and dwarf Daffodils. Little colonies of such plants as these, distinguished as they are for moderate growth, and not liable to encroach unduly one upon the other, will prove a source of permanent interest in a garden, and if planted in the immediate vicinity of trees or shrubs without any particular attempt at arrangement, allowing each plant to develop unrestrainedly and to mingle, if it so will, with its neighbour, the effect will be as pleasing as those natural combinations which one so much admires in our wild woodland scenery. Too little has hitherto been attempted in this way, but it is to be hoped that the time is coming when the permanent grouping of hardy plants will form an important part of the gardener's education. An extensive garden is by no means necessary for this purpose; there are plenty of beautiful plants suitable for gardens of the smallest dimensions which may be thus employed. The Lilies, for instance, may be grown in the smallest garden, and yet how seldom does one see the attempt made to render them justice. The handsome and fragrant Lilium auratum requires only to have its needs studied, and it will thrive in most places. Give it a proper rooting medium and a sheltered situation, and it will not fail to afford gratification. In cold, wet, ill-drained soils this Lily will not live for any time unless some special provision be made for its welfare. About 18 in. of the natural soil should be taken out, replacing it with some prepared compost. If good fibrous peat can be procured, this is the very best material that can be used; it remains sweet and free, and never becomes close and waterlogged, so that the bulbs when planted in it yearly increase in vigour. The only objection to its use is its expense, peat being in some localities rather difficult to procure. It is, however, far better to plant a few bulbs well, concentrating the labour and expense upon a few specimens, than to hurriedly commit to the ground a number of roots which could not well be accorded this necessary care. This remark will apply equally well to any other kind of hardy plant which it may be desired to establish. It too often happens that in the endeavour to accomplish a great deal nothing is thoroughly done, not one plant in the whole garden perhaps attaining sufficient luxuriance to give a true idea of its beauty. J. Cornhill.

Byfleet.

(To be continued.)

Improving a Lawn.—Until last autumn my garden had been much neglected—lawn 90 ft. by 40 ft., scarcely anything but weeds. I had it mown in spring and sowed 1 lb. of grass seed; have kept it cut regularly with the mower; it is now perfect. There are several Lilium auratums in the ground that have been there many years; I measured two to-day 52 in. each in height, 3 in. round base of stem, 19 blooms on one, 15 on the other.—Victor.

Wintering Hollyhocks.—If allowed to remain in the beds or borders where they have flowered, choice Hollyhocks often perish from damp or snow settling round their collars, or from its penetrating through the hollow cavity left by the too close removal of the flower-stems. It is a good plan at the approach of winter, say in October, to carefully lift all which it is desired to save, and lay them close together in a slanting direction, at an angle of about 45°, in a warm, mellow soil at the foot of a wall or hedge, where, in bad weather, shelter can easily be given them. But in wet, heavy soils it is the snow and damp that has the most destructive effect. Lifting them thus not only makes them safe, but it gives an opportunity to have the land that is to receive them thoroughly worked in winter, and then, when re-planted in March or April, if a little rotten turf is worked in with them, good spikes and large individual flowers may with tolerable certainty be expected. In the spring any strong plants that will bear it may be divided, as recommended, or if it is desired to increase any kind more largely, the plant may be potted and brought on gently in heat. Although the young side-shoots produced by old stocks will readily root in a gentle bottom-heat in spring, they may also be propagated in July, just before the plants come into flower. The side-shoots from the flower-spikes, or the smaller wer-spikes, if they can be spared, should be cut up into single joints, and dibbled in thickly in a prepared bed in a frame or pit, where they can be kept close and properly cared for by shading from bright sunshine, and sprinkling occasionally with water that has been warmed by standing in the sun. Thus treated, nearly every cutting will develop a latent bud from the joint of the base, and rapidly strike root, and make a good strong plant by the following spring; and, as a rule, young plants propagated at this season usually produce the best spikes. When cutting down the flowering stems of Hollyhocks after blooming, they should be left a good length, as they are exceedingly impatient of damp about their crowns; in spring their old stems may be removed altogether.—E. H.

Monkshoods (Aconitums).—These are stately hardy plants, well suited for wide borders, or for mixing among shrubs in large beds.

Variegated Monkshood (Aconitum variegatum).

They should, however, never be grown in vegetable gardens, as their roots, which are poisonous, have often been mistaken by inexperienced people for those of the Horseradish, and with serious results. The common Monkshood (Aconitum Napellus) will grow in any ordinary soil from 2 ft. to 4 ft. high, and, like the other kinds, is easily increased by division of the roots in autumn or spring. A. variegatum is, when well grown, a handsome plant, 4 ft. high, flowering late in summer. It flowers

Common Monkshood (Aconitum Napellus).

are sky blue variegated with white. The autumn Monkshood (A. autumnale) is a fine species, yielding from August to November spikes of large pale blue flowers tinged with white. A. chinense and A. japonicum are two of the best kinds, but they require warmer positions and soil than the foregoing; and A. paniculatum, also a handsome kind, grows best if a little peat is mixed with the soil.

Giant Musk.—We have employed Harrison's Musk successfully this season for decorative purposes. Early in the spring months, and even up to midsummer, we found it invaluable in pots for conservatory and house decoration. The most useful sized pot in which to grow it is a 5-in. one, using rich soil and good drainage. It requires a liberal supply of water, and occasional waterings with liquid manure are found to be of benefit to it. I have also used it largely for both beds and borders, and when planted in masses it is most satisfactory, being compact in habit and most profuse as regards bloom. Our beds of it were planted in April, and ever since the early part of May they have been a complete mass of flower. Heavy rains impair their beauty for a day or two, but they soon recover. This Musk flourishes best in a light, rich, moist soil, and if dry weather sets in occasional waterings will be necessary.—R., *Warwick.*

FRUIT.

Planting Apples.—Apples will thrive well on any good loamy soil on a bottom either naturally dry (that is, with no stagnant water in it) or artificially drained; on a bad sub-soil, whether hungry gravel or cold clay, the bottom of the hole should be made impervious to the roots before planting and the trees planted upon a slight mound. Where the soil is suitable, all the preparation required is to trench it up 2 ft. deep, and thoroughly break it up and intermix it. Manures, if applied at all, are better given in the shape of top-dressings when the trees come into bearing, so as to keep the roots near the surface. Where the sub-soil is unfavourable some expedient should be adopted to keep the roots out of it, either by spreading a barrowful of concrete over the bottom of the hole, 1 ft. 8 in. or 2 ft. from the surface, or paving the bottom with bricks or tiles, in order to give the roots a horizontal direction. All trenching should be done in September if possible, so as to give time for the ground to settle before planting. If at all loose the bottom of the hole should be well trodden just previously to the tree being planted. All fruit trees succeed best in a firm soil, and all planting should be completed by the end of November. Mulch with short litter or manure for 2 ft. or so round the bole of the tree as soon as the planting is finished. By early autumn-planting much time is gained, and the trees are in a good condition for heading down as soon as the sap begins to move in spring. If the planting be delayed till February or March, it would be better to leave the tops uncut till the following winter, especially if the roots have been mutilated in lifting them. Much care and judgment will be necessary in the selection of the trees, for it is preferable to plant half-a-dozen trees of a kind known to thrive well in the neighbourhood than to plant a number of sorts about the suitability of which for the soil little or nothing is known. This, of course, need not preclude any one from trying a new sort occasionally, and as it is important for the trees to be true to name, select them from some respectable nursery in preference to buying them in a market.

Gathering Pears.—During the months of September and October the bulk of the Pear crop should be taken from the trees, and should at once be placed in the fruit-room to ripen. Pears are improved in quality if ripened in the house under favourable conditions, to wit, darkness and a cool, dry, and pure atmosphere. Pears are very sensitive to surrounding odours, and if placed in a cellar with vegetables showing signs of decay their quality is injured. When the seed of the Pear has changed from a light straw colour to a dark brown the fruit may then be gathered, and will ripen without shrivelling or rot. Again, when on raising the Pear gently by hand it separates easily from its holding at the end of the stem, it may be gathered with confidence. To pluck Pears rapidly that are advanced toward ripening on the trees needs a practised eye and no small amount of experience; indeed, in many instances it will be found advisable to go over the same tree three different times in picking, and the additional labour will pay for the extra expense. Pears should always be taken from the tree by hand, and not shaken off, as is too often the case with careless cultivators. They should then be carefully placed in baskets and taken at once to the fruit-house or closet, to be laid away where the light can be excluded, with the same care, to prevent injury from bruising. There they may remain until ready for table use, with an occasional examination to remove decaying specimens. Compared with those ripened on the trees, their superior excellence will at once be evident.

Gooseberry Caterpillars.—I find that the best plan for getting rid of these is to allow young ducklings to go underneath the bushes.

They do not seem to molest the fruit, but they collect the whole of the caterpillars, and they jump up and pick off all within 14 in. or 15 in. from the ground. The following year hardly a caterpillar will be found upon the trees, as they seem to scratch out all the insects under the surface of the ground.—T. CHRISTY, *Sydenham*.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 20.—Sowing Cucumbers to be ready to plant on Dec. 20; potting up show and young autumn-struck variegated Pelargoniums, also Calceolarias, Snowdrops, Crocuses, Van Thol Tulips, and remainder of Roman Hyacinths; putting Caladiums on black flue to dry off, and putting pot Violets into a frame, Primulas into a heated pit, Tree Carnations into pits, and the earliest Cinerarias into a position near the glass; planting Roses for button-hole bouquets in a pit, the sorts being Isabella Sprunt, Cheshunt Hybrid, Devoniensis, Safrano, Niphetos, Madame Falcot, and Mdlle. Van Houtte; gathering Ribston Pippin Apples and Louise Bonne of Jersey Pears from espaliers; digging ground for Cabbage end Lettuce; clipping Yew hedges; hoeing among young Strawberry plants, Spinach, and Endive.

Sept. 21.—Potting Schizanthus, also a few Gem Nasturtiums for early spring work; putting Callas into pits, also under glass all bedding plant cuttings struck out-of-doors; planting Violets in frame; making up gaps in Cabbage bed; training and cleaning conservatory creepers; Peaches and Plums out-of-doors nearly over; hoeing among Winter Greens; picking over Rose garden; beginning to cover late French Beans out-of-doors at night.

Sept. 22.—Taking up all bedding plants intended to be saved; putting greenhouse plants under cover; planting Cabbages sown on Aug. 6; pricking out Cabbages for spring planting; staking Heliotropes; gathering Napoleon, Beurré d'Aremberg, Moorfowl Egg, and Bergamot Pears, also Brown Beurré and Gansel's Bergamot, and finished gathering Marie Louise Pears; digging border for more Spinach; earthing up Celery; keeping Cucumbers about 70°.

Sept. 23.—Sowing a border of Spinach, which will prove useful in spring; getting under cover all Tree Carnations showing flower, all Dr. Lindley and other Pelargoniums in flower, the white and yellow Chrysanthemums, and putting Bouvardias in heat for room decoration; taking up Centaureas, Carnations, Scrophularias, and Gazanias, and potting them; shifting Stocks into flowering pots; tying up Mignonette in pots; bunching up Basil and Marjoram; washing Orange trees; gathering Wine-sour Plums, also Crassane, Bergamot, Napoleon, Thompson's, Louise Bonne, Jalousie de Fontenay, and Louise Bonne of Jersey Pears; sorting seed Potatoes.

Sept. 24.—Shifting Humeas and Schizanthus into 8-in. pots; removing all Peach trees in pots from the orchard house and putting in Chrysanthemums; giving Mushroom bed a sprinkling of water and covering it with hay; preparing ground for early Peas; digging ground for Carrots to lay all winter in order to try to avoid grubs; thinning the latest Turnips.

Sept. 25.—Planting Lily of the Valley, Guernsey, and Belladonna Lilies, Schizostylis and Spiræas in sheltered positions, also Cucumbers to come on in January; making up conservatory baskets with Selaginella, Heliotropes, Centaurea gymnocarpa, Fuchsias, and Rollisson's Unique, scarlet, and Ivy-leaf Pelargoniums; potting Spiræa palmata; tying Anne Boleyn Pinks set with flower-buds and placing them under cover; finished gathering Reinette du Canada Apples; gathering the last of the Apricots; digging alleys between Asparagus beds.

Glasshouses.

Dipladenias.—To make the most of these, that is, to grow them in a way that will afford flowers for cutting over the longest period of the year, they must have no further rest than that which they get through the slower growth that is made during the winter. Allow them to get quite dry about this season of the year, and then at once cut them back to within a few joints of where the shoots have been shortened to the year preceding; then in the course of ten days, when the buds get prominent, but before they have broken into leaf, turn them out of the pots, shaking nearly all the soil away, and reduce the roots to something like the condition of large Dahlia roots when lifted in the autumn, a considerable portion of the small fibres being thus cut away. Then repot them in fibrous peat and sand. The pots used will not require in the first instance to be more than half the size of those which they have occupied during the summer whilst flowering, as towards February or March, when the roots have pretty well filled the soil, they can have another shift, which may be given without their receiving any check. They should be kept with their shoots close up to the roof and at the warmest end of the stove. Where there is only just sufficient warmth maintained to keep them alive during the winter, it would not be safe to pot them at all at this season.

Allamandas.—These may be had in flower almost all the year round by the use of several plants, encouraging some to make growth and flowers all through the latter months of the year, and drying one or two specimens off about this time. To effect this it is needful to let the soil get much drier than many plants would bear, allowing them to flag severely before any water is given, and then only administer enough to moisten the soil very slightly, for such persistent growers are they when in sufficient heat that if the soil is moistened to the extent that other plants need they scarcely can be induced to rest at all. From this time forward during the autumn months plants to be thus early put to rest must have no more water given to the roots than will prevent the leaves from shrivelling whilst in a green state.

Clerodendrons.—The climbing species of these are so manageable in a stove, that, where a sufficient number exists, they may be had in flower from March up to the middle of August. But this wide range in the time of their blooming, as a matter of course, necessitates their making growth at different periods; for, flowering as they do from the ripened wood, whatever cutting back is needed should be done immediately after blooming and before the plants start into growth. Those that flowered early will, in the course of a few weeks in most cases, have made as much growth as is necessary, when they may be prepared for resting by withholding water, much in the same way as in the case of Allamandas. The young shoots from the first having been all along kept trained close to the roof, the naturally hard character of the wood formed under such conditions is very conducive to free-flowering. Plants that bloomed later will be proportionately later in making growth, which they may be kept on making up to the end of the year. This late growth will flower just as freely as that made earlier, provided that whilst it is being formed the points of the shoots are kept close up to the glass.

Gardenias.—If all the stock of these show a disposition to set their flowers, a portion may be removed to cooler quarters, giving those that are wanted to bloom earliest more or less heat, according to the time at which they are required. Where a sufficient stock is at command they may be had in flower the whole year round by treating them so as to make growth at different times, and varying the management with different portions, so as to bring them on in succession.

Achimenes, Gloxinias, and Caladiums.—The season has now arrived when most of these will require drying off, a process which should be done gradually, keeping all in sufficient warmth, so as to admit of full development of the roots previous to the leaves dying quite off. This is best secured by withholding water by degrees, the plants during the interim being in a somewhat reduced temperature, but not lower than is necessary to induce a cessation of growth.

Guernsey Lily.—This very serviceable easily managed autumn-flowering plant is much less used than it deserves to be. Where a few dozens are grown and now placed in a brisk heat they will quickly throw up large heads of red flowers that have a handsome appearance on the plants which may be used when in bloom for the decoration of conservatories, and they are equally valuable in a cut state when mounted in the form of single flowers. They may be bought very cheaply in the market, and are excellent for windows, &c.

Roman Hyacinths.—In the whole range of bulbs for forcing there is nothing more useful than these for the production of flowers towards the end of the year; although they do not afford the diversity of colour furnished by the larger growing Hyacinths, yet it is much better to grow a portion of them than to attempt the forcing of the larger flowered kinds very early, as the Roman varieties come in with very little difficulty. They consist of white and blue, the blue being not quite so early as the white. They do not occupy much room—a 6-in. pot is sufficient for half-a-dozen bulbs—or they may be grown in pans a dozen or a score together, according to the size of the pans used. The soil, drainage, and general management do not differ from those employed in the case of ordinary Hyacinths.

Tying Azaleas.—The tying of these plants will, as a matter of course, be regulated by the purpose for which they are required. It is an unfortunate circumstance where plants have to be conveyed in bloom to an exhibition, even for a short distance, that it necessitates their shoots being secured to a much greater extent than for home decoration; for the latter purpose just a single stick to each of the principal branches is all that is needed, so as to keep them reasonably in shape without any formal training. If the tying is done now before the wood gets too hard, the leaves and ends of the shoots will assume a natural position. The whole of the plants ought to be gone over to see that they are free from their worst enemy, thrips, as if these are now destroyed along with their eggs no further inconvenience will be experienced from them during the winter, and there is a reasonable chance of the plants remaining free from them when growth again commences. After all the various remedies that have been tried, there is nothing so safe and certain of killing these insects without injuring the foliage as Tobacco water.

Paris Daisies.—The partiality which often exists for double flowers has caused many to be prejudiced against these useful decorative subjects, both yellow and white. Their single blooms being so much like those of the common Ox-eyed Daisy has hitherto been in the estimation of many much against them, but their elegant Fern-like foliage, which adapts them equally for cutting as for general decorative purposes in the form of pot specimens, with their easy cultivation and continuous blooming habit, render them amongst the most useful plants that can be cultivated for ordinary greenhouse and conservatory embellishment. Plants that have been grown with a view to their blooming in the winter, which they will do freely if placed in a little warmth, should not be allowed to remain out-of-doors too late. If they have had plenty of room in an open position, and if the leading shoots have been stopped in the early stages of their growth, they will now be strong and sturdy, requiring no support except it may be that of single sticks in the centre of each plant. Cuttings put in now in a little warmth and in other respects treated in the usual way will root quickly. They should be kept in small pots through the winter, and they will make pretty little plants in spring; or they may be grown on to a large size out-of-doors next summer.

Veronicas.—Where these are propagated in winter or spring, and then planted in the open ground with a view to lifting and transferring them to pots for autumn and winter flowering, it is not well to defer the taking them up too long, especially in a season like this when both earth and air are considerably lower in temperature than ordinary. All plants treated in this way should be turned out in soil sufficiently sandy and light to admit of their being taken up with no more mutilation of their roots than may be unavoidable. Although these Veronicas are naturally such free growers that they recover the loss of fibres much quicker than many plants, yet with those that come into flower early in autumn, such as V. Andersoni, injury to their roots more or less interferes with their blooming. They are subjects that require a good deal of water and will bear the soil to be thoroughly moistened as soon as potted in a way that would be fatal to more delicate-rooted plants; they should be set close under a north wall or similar position, so as to be out of reach of the sun for ten days or a fortnight after they are taken up; or if there happens to be room in a house or pit where they can be kept a little close, it will be still better.

Berry-bearing Solanums.—Plants of these also that have been similarly planted out should at once be taken up, using pots no larger than will admit their roots. If the soil is of a free light character, a good portion of it may be shook away and fresh material given them in the pots; these likewise should have the soil thoroughly moistened, or they will flag to an extent that will injure their leaves, a condition that must by all means be avoided, as it is to obtain plenty of healthy green foliage, which contrasts so well with their bright-coloured berries, that the planting-out system is advantageous. If pits or frames are at liberty that can be kept close and also shaded when it is sunny for two or three weeks, it will be the most suitable way of treating them. They may be placed tolerably close for the short time they are kept here, but not so much so as to injure the leaves. These plants, like everything else, are late, and in many places where there is a crop of berries on them grown to their full size, they are yet producing flowers. The points

containing these latter will be better pinched off. As soon as they are potted they should have a good washing with the syringe, so as to free them from any dirt that may have got upon them in taking up, and they may be damped overhead once or twice daily in bright weather until the roots have begun to act, after which it is advisable to discontinue anything calculated to promote top growth, as with many the object will be to get the berries of the earliest plants fully coloured with as little delay as possible. Cuttings made from the young, soft, still growing shoots of the earliest plants will strike readily treated in the usual way, kept moist in a moderate heat. This is not the usual season for the propagation of these plants, but cuttings struck now will be much in advance of and make better plants than those put in in spring at the ordinary time, or than those raised from seeds sown then.

Salvias.—There are many who treat these and other winter-flowering things of a like character on the planting-out system; in all cases they should be at once taken up and potted, treating them very similarly to the Solanums.

Flower Garden.

Carnations and Picotees.—These do not at present demand any more attention than to see they do not suffer from want of water. It easy to neglect plants out-of-doors during a period of dry weather, but if allowed to become too dry considerable injury is the result; the small roots that are forming at their callus die, and the plants are permanently injured. See that pots containing layers are fully exposed in an open position, but still they should be protected from the strong gales which are often experienced at this season from the south-west.

Hollyhocks.—Still put in any cuttings that can be obtained from the base of the plants, or eyes got from side growths from the main stem. Let all flowers with the seed-pods be removed, as they show decay if seed saving is not intended.

Pansies.—We are just now putting in cuttings of these, and it may be well to again remark that the thick, pithy flower-stems are useless for cuttings. The best are the slender growths that usually come up thickly from the base of the plants when the old stems have been pegged down or removed. These can be pulled out with plenty of small rootlets attached to them, and when carefully put into boxes in fine soil they speedily start into growth. A reddish-coloured aphis usually attacks them at this season, but it can be destroyed by dipping the cuttings in soapy water before they are inserted.

Polyanthuses.—Seed sown now will be up in about a fortnight, and in another fortnight the young plants may be pricked out in boxes or pans. Beds of seedlings or named varieties should be kept quite free from weeds by stirring the surface of the ground occasionally with a Dutch hoe. Plants in pots now well established must be well attended to with water, removing any decaying leaves and occasionally stirring the surface soil. Red spider frequently attacks the under sides of the leaves, and is not perceived until they begin to turn yellow. It can be destroyed as well as green fly by dipping the foliage in soapy water.

Pentstemons.—These are now very gay in herbaceous borders, and they will remain so for a long time. Few of our hardy flowering plants continue to brave the wet and cold so long as these do; it is, however, necessary to remove the seed pods as the flowers fade, as they seriously cripple the energies of the plants. The stems must also be supported with sticks as they require them. Cuttings may be put in now if a large stock is required, but we prefer to wait until October.

Marvel of Peru (Mirabilis jalapa).—I should like to call the attention of the readers of GARDENING ILLUSTRATED to the neglected but beautiful Marvel of Peru. It is so very easily cultivated, and with but little attention will grow to a beautiful bushy shrub; and at this time of the year it is covered with beautiful flowers of deep purple or white flowers, which open at night and emit beautiful perfume, and is well worth a place in every garden. The plant is raised from cuttings or from seed.—AMBROSE.

Fruit.

Vines.—Do not allow inside borders to want water, even though the Grapes are ripe, if there is any fear of their shrivelling from want of it; better sacrifice a few by damp than that this should happen. After watering, either cover the border with mats or dry straw, both for the sake of neatness and in order to prevent rapid evaporation. The earliest Vines, on which the Grapes are to ripen in April and May, should be pruned at once, the borders renovated, and the houses cleaned, or if they are to be painted the present is the best time to do it.

Melons.—Increased artificial heat both top and bottom will now be necessary to keep these in vigour, and the fruit must have the fullest exposure to light by tying aside any foliage that intercepts it. Though less water will now be necessary than earlier in the season, avoid dryness, which is a sure precursor of loss of foliage and consequent insipidity of fruit. Free ventilation, full exposure to light, and an equable bottom heat never fail to ensure fruit of high flavour. The blooms of late plants should be fertilised, and as the advanced season renders this crop somewhat uncertain, it will not do to wait for a number of flowers to be ready to fertilise at the same time; on the contrary, the first that appears should be set. Keep the shoots thin, and those producing fruit should be stopped at the first joint beyond the fruit. As soon as all are set encourage quick growth by closing the house very early. With sun-heat, the temperature may advantageously be raised to 90° for an hour or two.

Vegetables.

Where there are heated pits or spare spaces in Cucumber and Pine pits French Beans are easily produced, and a good quantity should be got in at once; for this purpose there is no better kind than Osborn's, though that fine variety Canadian Wonder forces at this early season tolerably well, but it requires more space than Osborn's. Seakale is yet in vigorous growth, but the first sharp frost will stop that, when a first batch of roots may be lifted for forcing. Due allowance, both as to produce and time required for forcing, must be made for immaturity of the crowns. In order to induce rest to the crowns of Asparagus that are intended for forcing earliest, cut away the stems to the ground line; these are still in such active growth that no attempt at forcing should be made for at least another month. Lettuces and Endive intended for winter use should have the protection of frames whenever frost seems imminent, for in order to prevent decay the first frost must be avoided.

Parsley and such other herbs as are in daily request throughout the winter should have immediate attention; the former, as a rule, winters safely on a dry south border, but a frame placed over it ensures its safety in all weathers. Basil, Tarragon, Balm, and Mint are all easily produced in any warm position in houses or pits, and if planted in pots or boxes they can be conveniently removed as required from one place to another. On fine days, and when the leaves are dry, tie up Endive and Lettuces to blanch, and all herbs not yet cut for drying should in like manner receive attention. Celery should also be earthed up under the same conditions as to weather, but previously remove all outside suckers, and prevent the soil from getting into the centres of the plants, either by tying or holding the stems closely together whilst the soil is being placed around them. Winter Spinach should be well thinned out, certainly to at least 1 ft. plant from plant. Canker is sometimes very injurious to this crop, and with the view of warding it off there is nothing better than keeping the surface soil loose, and taking the precaution to sow only on well drained ground. Continue to earth up Broccoli, Sprouts, Cabbages, &c., as occasion requires, and let no opportunity slip as regards killing weeds. Cauliflowers may require to have their leaves bent over their heads to evade frost, which may now occur at any time.

Messrs. Hurst & Son.—In consequence of 6, Leadenhall Street being required by the Corporation of London for City improvements, this firm has, after an occupation of nearly fifty years, removed the offices and seed shop to their extensive warehouses at 152 and 153, Houndsditch.

Notice.—We hear that many of our readers have, owing to the enormous demand, been unable to procure the number of GARDENING issued August 21, which contained a coloured plate of Roses, and also that many were charged by the newsvendors more for the number than the usual price, viz., one penny, which we need hardly say was entirely against our wishes and expectations. We would, however, remind our readers that they can still obtain the number without the plate either through the newsagents or direct from the office.

House and Window Gardening.

Berries for Room Decoration.—As soon as cut flowers become somewhat scarce in gardens, clusters of highly-coloured wild berries will be found in many cases to be a good substitute for them, and none are more useful at present than the fruit of the common Dogberry (Cornus sanguinea), to be found in many hedgerows in the southern counties, the berries of which are most effective when subjected to artificial light on the dinner table. I saw a few days ago a dinner table decorated in which these berries were employed, and with such success that I attempted to give a description of it. It consisted of a centre-piece only, and that was composed of a plateau on which stood a flower-pot of frosted glass, in which was placed a well-grown plant of Maiden-hair Fern (Adiantum cuneatum), and round the silver edge of the plateau was arranged a thick wreath of branchlets of the Dogberry; the effect of this wreath against the white of the damask cloth and frosted silver of the plateau was all that could be desired. The wreath was formed by just placing the little branchlets one partly over the other, so as to hide the stems; it was done in a few moments, and it kept fresh without any moisture all the evening. The berries of the Arbutus could doubtless be employed somewhat later in the season, in the way I have above described, with very good effect, and also others too numerous to enumerate. —H.

Hardy Plants Suitable for Outside Window Gardening.—

- Arabis albida
- Alpine Auriculas (cool position)
- Astilbe japonica
- Aubrietias, various
- Cheiranthus Marshalli, and others
- Chrysanthemums, Pompones, various
- Calystegia pubescens
- Campanulas, various
- Cerastium tomentosum
- Daisies, various
- Hepaticas, various
- Iberis corifolia
- Lithospermum prostratum
- Linaria Cymbalaria
- Lysimachia nummularia
- Musk
- Mentha argentea variegata
- Primulas, various (cool position)
- Polyanthus
- Phlox frondosa, and others
- Pansies, various
- Sibthorpia europæa
- Sedums, many kinds
- Saxifrages
- Sempervivums
- Thymus aureus marginatus
- Vinca elegantissima
- Violets, Russian and others
- Veronicas, various

GLASSHOUSES & FRAMES.

FEATHERY COCKSCOMBS (CELOSIAS) FOR WINTER.

Few plants are more striking in the dull days of autumn and winter than these lively-looking, graceful plants. Sow for a last batch of seed in August or early in September. Any light soil will do, covering but slightly, as the seeds are small. Place the seeds in pots or pans in a warm, close frame, and as soon as the plants are up, raise them near to the glass, as future success largely depends on a sturdy habit through the first stage of growth. Pot off as soon as the plants are large enough to handle, and plunge the pots in a bottom heat of 60° or so, still keeping the plants near the glass. Under such treatment the plants grow fast, and the pots will soon be full of roots. Shift into larger ones directly, until a 6-in. or 8-in. pot is reached. These sizes, unless immense plants 6 ft. high be required for lofty conservatories, will be sufficient. Properly managed and well fed with manure, a 6-in. pot will grow a Celosia 3 ft. high and almost as much through. Large plants, however, are not by any means the best or most useful for winter decoration.

Good, shapely pyramids, about 2 ft. high, in 6-in. pots, are much more useful, as they will stand on a shelf in any out-of-the way part of the stove, and yield quantities of blossom for

cutting, and also lighten up, by their many spikes of beauty, foliage or other plants. After their final shift the Celosias should gradually be removed from a tropical to a more temperate climate ; a warm, light greenhouse is about the best situation for them. This final shift should be into rich soil, composed of tufty loam and leaf-mould, with a free admixture of sand. For summer work the Celosia may have a much richer soil—half of loam and half of rich manure. But less forcing food is better and safer for those that have to pass through the winter. The chief enemies of the Celosias are thrips and red spider ; both dislike a moist regimen, and the Celosias delight in frequent syringings overhead. Hence, if the plants be shaded, the pests do not get much hold. Should they, however, do so, smoke twice at least in succession with Tobacco paper, and, in fact, continue smoking until the pests are dead. Nothing is more fatal to the health and beauty of Celosias than red spider or thrips ; these mar the beauty of both leaves and flowers and arrest growth. The spider especially delights in these plants ; and this is one reason why all their early growth should be made in bottom-heat, that from fermenting manure being by far the best.

The pyramidal flower-spiked Celosias have almost driven the old crested sorts out of cultivation, and deservedly so. The old Cockscombs were grand things in their way, but required a good deal of skill and care to grow them well, and they refused to group effectively with any other plants. There is a large crimson comb, beautiful enough in its way, but it was not and never could be made anything more than a comb. Now these new Celosias or Cockscombs group well with all kinds of plants, and are among the most useful of any for cutting for vases or bouquets. Groups of Celosias are very showy by themselves, and have a still richer effect mixed with such strikingly beautiful foliage plants as Amarantus Henderi, A. salicifolius, and A. tricolor.

There are a great many varieties of these feathered Celosias, ranging through the different shades of colours from lilac to crimson, and yellow to orange. Almost each grower has his own specially good strain, distinguished either by its superiority of vivid colouring, size, or profusion of bloom. Among the finer named sorts are the following : C. pyramidalis aurea, fine golden ; C. p. ignea, rich crimson ; C. p. aurantiaca, fine orange ; C. P. plumosa aurantiaca, in different varieties of colour, such as C. splendida and C. versicolor violacea, is a very fine strain, producing feathery-looking flowers of great richness and beauty. T.

Tropæolums for Winter Blooming.—Any of the free-blooming, climbing varieties of Tropæolum are very serviceable for the production of flowers through the winter, and for this purpose they are often trained up pillars or rafters ; so managed they bloom profusely, and produce a cheerful effect, but they are not so useful as when trained to a few sticks inserted in the pot, as in this way they can be moved about to whatever place is most conducive to their blooming. If they can be accommodated with a temperature of 50° at night, with plenty of light in the day, they will keep on flowering for months. The length of stalk possessed by each bloom, and their enduring capabilities when cut in water or wet sand, make them very useful for small vase decoration. Amateurs with limited glass accommodation for growing winter flowers will find that by employing free-growing, continuous-blooming plants such as the above they can have a much more plentiful supply than by attempting the growth of subjects that are rarer and more difficult to cultivate.

Genetyllis.—These beautiful greenhouse plants, sometimes known by the name of Hedaroma, are by no means easy to cultivate, and can only be recommended to those who can pay attention to their plants, and who have learnt how to pot a plant and how and when to water a plant, for if these plants once get dry they are seriously injured, and if they get waterlogged death is almost certain. In nurseries they are grown with ordinary care, and flower from midsummer to late in autumn. The principal kinds are G. Hookeriana, which flowers earliest in the season, G. tulipifera, which succeeds it, and G. fuchsioides, which blooms in autumn and winter. The best soil for these plants is one-half fibrous peat, one-half fibrous loam, and abundance of silver sand. They require to be potted firmly, like an Azalea, and when they require larger pots the next size to those they are in should be used. A cool, airy house is the best place for them. All the kinds of Genetyllis are easily increased by means of cuttings, made of the side shoots, put in in April and May. The pots for their reception must be prepared, so as to allow ½ in. from the rim for bell-glasses to stand on. The soil should consist of half peat, and the other half clean yellow loam and silver sand sifted fine and pressed into the pots, which must be well drained, rather firmly. Make the cuttings as shown in the accompanying illustration, put them in firmly, and give a good watering. After the lapse of an hour or so the glasses may be put on, and the pots placed on a gentle bottom-heat (a tan bed is best). In order to obviate an excess of moisture the glasses should be taken off and wiped every other morning, an operation which must receive particular attention, or the leaves will fall off. As soon as the cuttings begin to grow tilt the glasses daily for a few hours, and by degrees they may be left off altogether. The young plants thus raised will be ready for potting off and placing in a

Cutting of Genetyllis.

shady, cold frame in August, keeping them close and shaded from sunlight.—H.

ANSWERS TO QUERIES.

2891.—**Pansies in Pots.**—Last August I had some rooted cuttings ; I put them into round seed-pans, ten in each, in good mould got from a nursery. They were kept in an unheated greenhouse, given plenty of air and not much water ; in February I potted them into 7-in. pots, good drainage and a handful of rotten manure over same, plenty of water when they began to grow freely, and Florvita twice a week when the flower-buds showed, and from the first week in April till I had to put the plants out of the house to make room for others, three weeks ago, I had lovely flowers. When potting put a stake in, as they grow very tall and require to be tied up, and it only injures the roots putting the stake in afterwards.—E. G. F.

2880.—**Propagating Azaleas.**—Ghent Azaleas are propagated by means of cuttings and seed. Nurserymen keep old stools of the best kinds, which throw up from the root-stock a number of straight, strong shoots, which early in the year are bent down, cut partly through with a sharp knife, fastening that portion into the ground with a stout peg. By the end of the season roots are emitted and the young plants may be taken off. Seed should be sown in March in well-drained pans of sandy peat, covering the seed very thinly, and placing the pan in a cold frame, covering it with a pane of glass until the seedlings appear above ground. As soon as they are large enough to handle, prick them out into sandy peat, and keep them in the frame until well established, when they should be gradually inured to full exposure. The following year, having wintered them in a cold frame, they should be planted out in a bed of prepared soil about 9 in. apart, where, if carefully tended, they will make a good strong growth.—J. C.

2882.—**Soil and Treatment of Orchids.**—Cypripedium insigne and Bletia hyacinthina require a compost of fibrous peat, taking the lumpy portion only, mixing with it a little chopped Sphagnum and crushed charcoal. The Odontoglossum and Dendrobium nobile are better for about a third Sphagnum. The Bletia is said to be hardy, although we do not think that it has been thoroughly proved in this country. It would probably succeed in a cold house, but might be grown in company with the other above-mentioned species, which demand a minimum temperature of from 45° to 50° by night and 55° by day in the winter. During the summer season they should be placed in a light position in a close moist house, shading from bright sunshine. Whilst the plants are in a growing state keep the soil moist, but as soon as growth is completed diminish the supplies of water, and give air rather freely. This treatment will have the effect of maturing the bulbs, thus enabling them to produce bloom at the proper time. The Cypripedium may, if so desired, be removed to a warm room when throwing up flower ; it thrives very well in such a situation. In potting, fill the pots quite half full of drainage, and press the soil in firmly.—J. C. B.

2845.—**Mushrooms in Boxes.**—To grow Mushrooms anywhere, the manure must not be rotten, but taken fresh from the stables and fermented, permitting some of the moisture and rankness to escape by turning it over occasionally for a period of about three weeks. If the manure was used quite fresh, it would become fiery hot, and heat itself so dry that the spawn would not run in it, except round the edges. The chief difficulty with inexperienced Mushroom growers is in the preparation of the manure. It is either used so hot as to destroy the spawn, or else it has been over-heated, and the nature and strength taken out of it, so that it will not generate sufficient warmth to propagate the spawn and enable the Mushrooms to grow. I have often grown good Mushrooms without fermenting the manure by mixing one barrowful of fresh loam or soil to every four or five barrowfuls of manure just as it came from the stable, with the longest littery part only removed. The soil steadied the temperature, and consequently prolonged the heating power as well as absorbed all ammoniacal gases. Such beds, when well put together, are generally lasting and prolific. The beds must be built up firmly in layers, putting a portion in the boxes, pressing it down firm, and then add more, making that also firm, and so on, till the boxes are full. Place a stick in each box to indicate the temperature. As soon as it falls below 90°, spawn by inserting pieces about the size of a bantam's egg, 6 in. or 8 in. apart, just under the surface. When the spawn is working freely, put 2 in. of fresh sweet soil on the top, and beat it down firm with the back of the spade. The boxes should be kept in a temperature of 55°. A dark place will be best, as there will be less evaporation from the surface. No water will be required till the Mushrooms appear, unless it may be a light dewing over with the syringe.—E. H.

2883.—**Trees for Front Garden.**—A little more information as to the position of house, whether town or country, would have been useful, also as to size of forecourt, but the following list may be useful : Conifers—Cedrus Libani, Cupressus Lawsoniana and varieties, Thuja Vervæneana, Cryptomeria elegans, Thujopsis borealis, T. dolobrata, Picea Pinsapo. Weeping trees—Birch (Fern-leaved), Sophora japonica, Acacia inermis, Cratægus Pyracantha (grafted on 4-ft. stems). Japanese Privet makes a handsome little tree grafted on 3-ft. stems. The following are useful trees if there is sufficient space : The Plane, Lime, Thorn, Laburnum, Evergreen Oak, Magnolia tripetala, Mountain Ash, Hollies (many kinds), if the soil and situation suits, and the same may be said of the Rhododendron, but it is not much use planting either of these last named in a smoky confined atmosphere. It is difficult to advise without knowing something more of the locality than the question supplies.—E. H.

2879.—**Striking Rose Cuttings.**—Something depends upon when and where the cuttings are put in. If struck in a heated frame in spring or summer, then the chief requisites are a regular even state of moisture, with a close atmosphere and shade enough to keep the leaves from flagging. I have said a close atmosphere is essential, yet it must be changed as often as is necessary to prevent damping off. If the cuttings are planted in a cold frame in au-

tumn, or in the open air, much less trouble will be incurred, although the same rules apply ; and the nearer the conditions are secured the better the cuttings will root.—E. H.

2893.—**Saving Cabbage Seed.**—Seeds saved in a hap-hazard way are not often worth the trouble, and if the Cabbage is only running to seed now it will be too late to ripen. If "C. F." decides upon leaving it for seed and taking his chance about it ripening, he should thin out the clusters of pods where thick to give the remainder a better opportunity of ripening. When ripe it must be gathered and rubbed out.—E. H.

2840.—**Unproductive Potatoes.**—Let your Champion Potatoes remain by all means as long as they have a green leaf to show, as your only hope of getting any produce is to let them have all the time to produce tubers that the season will admit. Your experience with the Champion is that of hundreds of others who have been induced to plant this coarse and vastly overrated Potato. It is not disease-resisting even, as so often declared, as we have already seen it badly diseased in the tubers, whilst its competitor in this important characteristic, Magnum Bonum, is quite free and healthy, and, still further, is now turning out a splendid crop of tubers of quite three bushels to the rod. We strongly advise you next year to get rid of your Champions and replace them with the Magnum Bonum, giving the rows quite 3-ft. intervals. Don't be afraid of plenty of space ; the result always is a better crop and handsomer samples than can be got when the plants are so close together. The present season has induced an inordinate haulm growth, and so far in the Champion few or no tubers.

2841.—**Houseleeks.**—Nearly all the dwarf or cluster kinds of Sempervivums will thrive on a house roof, and one of the prettiest when in good clumps is the Cobweb Houseleek (Sempervivum arachnoideum). You will also find californicum and montanum, both kinds much employed in carpet bedding useful for your purpose. A pretty free-flowering kind is Sempervivum Boissieri, and the plant forms a large handsome rosette of leaves. The common Houseleek is Sempervivum tectorum, and formerly enjoyed the reputation of being capable of removing warts by rubbing these fleshy protuberances with the bruised leaves.—A. D.

2899.—**Flowers for Window.**—It is impossible to keep up a supply of flowering plants throughout the winter without the aid of a glass structure, but a fair amount of bloom may be had in early spring. Chinese Primulas should be sown in May and grown along in the frame until the latter end of October. Cyclamen bulbs may be potted in August, and young plants of Lobelia grown along during the summer, picking off the blooms, will flower beautifully in spring. Fuchsia Rose of Castile, Lady Heytesbury, and Mrs. Marshall are early-blooming kinds. Mignonette may be sown now, and will flower early in the year. The best use to which the cold frame could be put would be for sheltering hardy annuals in pots, such as Godetia Lady Albemarle, Nemophila, Saponaria, Myosotis dissitiflora, Silene compacta, &c. Well drain some 4½-in. pots and fill them to within ½ in. of the rim with fine soil. Sow thinly and cover lightly. Shade and keep moist until the plants are well up, and then expose them night and day until November, when heavy rains must be warded off, and the sash should be put on in frosty weather. With the exception of keeping the soil moist, no other care will be needed, so that by early spring they will be finely in bloom. I should, however, mention that not more than three plants are to be left in a pot. Primroses and Polyanthuses may also be potted ; and thus cared for, they will make the window gay and cheerful at a time when the garden in the open air is comparatively bare of colour. Hyacinths, Snowdrops, Tulips, Crocuses, &c., may be potted in November and wintered and grown in the frame ; and last, not least, the Christmas Rose may be potted and thus sheltered, as it comes much finer thus treated.—J. C. B.

2920.—**Verbenas from Seed.**—Sow the seed as early in spring as convenient in well drained pans or pots of light sandy soil composed of equal parts of leaf-mould, good loam, and silver sand. Fill to within 1 in. of the rim and water freely. Then cover with ½ in. of dry soil, and press level with the bottom of a small flower-pot. Scatter the seeds thinly on this, press gently into the soil, and cover very lightly with finely sifted soil. Place the pan in a warm frame quite level, with a piece of glass on the top, and keep moist. When the seedlings are fit to handle, pot separately into 3-in. pots, replace in heat, and keep close and shaded till established. If for bedding, they can be planted out when all frost is over, having been previously hardened in a cold frame, or under hand-lights. They will thrive under the same treatment as other bedding plants, but will require pinning down with zinc or wooden layering pins. A sandy soil and sunny situation suit best.—S. G. B.

2969.—**Plants Under Trees.**—Hardy annuals, such as Collinsia, Nemophila, Bartonia, Saponaria, and Leptosiphon, may be sown now to bloom early in spring, and may also be sown again in March for a summer display, as well as Godetia, scarlet Flax, dwarf Tropæolums (in the sunniest place), and Convolvulus minor. Silene pendula and Myosotis dissitiflora may also be sown now. In the shadiest situations we would plant Snowdrops, Daffodils, Primroses, and Polyanthuses, which succeed best when partially screened from the sun. Of the two latter seed may be sown in April in light soil, and the seedlings may be transplanted when large enough to their permanent quarters. The border alluded to should be deeply dug this autumn, forking in a little manure. In the spring any of the annuals above mentioned may be sown, from March till June, at intervals of a fortnight, thus giving a succession of bloom. We would also strongly recommend the bedding Violas and Pansies, which flower from early spring till late in autumn. For the back row we would have Honesty, Wallflowers, Sweet Williams, and Columbines, the seed of which should be sown in March in free soil, and the young plants set out where they are to remain when large enough to handle. Put one plant in a place, and attend to them during the summer, and they will flower beautifully the following spring. There are many beautiful hardy plants which may be planted either in the autumn or in early spring, such as the lovely Japan Anemone, both white and red varieties, Achillea ptarmica fl.-pl., Campanula carpatica and turbinata, Aubrietia purpurea, Alyssum saxatile, Spiræa palmata and filipendula fl.-pl., Anemone fulgens and apennina, Polemonium cœruleum, Solomon's Seal, Lily of the Valley, Pæonies of sorts, the White Lily, the Tiger and Orange Lilies, Daisies, Saxifraga granulata fl.-pl., Gentiana acaulis, Lithospermum prostratum, Iberis corræfolia, and Arabis albida. All these are easy of culture and effective. Here and there a Clematis might be planted to be trained up to a stake, and climbing Tropæolums, Canary Creeper, and Sweet Peas may be treated in the same manner.—J. C.

2967.—**Growing Bulbs Indoors.**—Tulips, Narcissi of many kinds, Scilla sibirica, Crocuses, Snowdrops, Triteleia uniflora, Jonquils, and the Grape Hyacinth may all be grown successfully in the dwelling. The bulbs should be procured at once and potted in a compost of good free soil, consisting, if possible, of two-thirds loam and one-third leaf-mould, with the addition of a little sand. Bury the bulbs about 1 in. under the soil, pot firmly, plunging the pots up to the rims and covering with 3 in. of ashes. At the turn of the year remove them to the dwelling, place in a light position, watering carefully until the plants are well in growth, when more copious supplies will be needed. Good single kinds of Hyacinths consist of L'Ami du Cœur, Eldorado, tubiflora, Orondates, Uncle Tom, and Fleur d'Or. Doubles—Alida Catherina, Princess Royal, Blanchard, Albion, Rembrandt, and Heroine.—J. C.

Tulip-flowered Genetyllis (G. tulipifera).

2971.—**Wintering Coleuses.**—As you have no warm greenhouse, we would advise you to keep the Coleus in a constantly heated apartment from the latter end of September. Keep the soil on the side of dryness, and water with warm water. The foliage may be occasionally sponged, but all moisture should dry off by the evening, and in severe frosty weather the plants should at night be placed in the warmest corner

of the room and be covered up. In this manner the Coleus may be brought through the winter. —B.

2980.—**Gloxinias for Autumn Blooming.**—Gloxinias require no artificial warmth at this time of the year; it is in spring, when making their growth, that they need a warm house. They will soon begin to die off, when water must be gradually withheld until the foliage has turned yellow, when the bulbs should be turned out of the pots, packed in Cocoa-nut fibre or sand, and kept in a warm place throughout the winter. In April pot them in the same-sized pots in sandy peat, and place them in the warmest place at command. Shift into larger pots about the beginning of June. Shade from hot sun, and water carefully.—C. B.

2994.—**Preparing Ground for Potatoes.**—Where it is purposed to plant a piece of ground with early Potatoes we would not advise the putting of any crop upon it now; indeed, it is not possible to get from it any crop that could be profitably removed in time. The best thing to do will be to work in some long straw manure and throw it up into 2½-ft. ridges for the winter; then in the early spring put a further dressing of long fresh stable manure into the furrows, fork this well in, and plant the tubers on the top of it. The benefit derived from this course is that the long manure changing its texture but little during the summer acts as drainage, keeps the tubers free from moisture, and at the same time induces free and healthy growth. We have found the most beneficial results to follow from this mode of culture during the past season, and the tubers have lifted very fine, sound, and clean. When the tubers are laid in the furrows the pulverised soil should be forked over them from the ridges on either side, and later on the forking, if possible, done with the fork, as the best implement of culture. As to sorts, there are none better for first early work than the Ashleaf Kidney, if a good stock, or Fenn's Early Market, a capital round white kind, or Beauty of Hebron, the best of all the American Rose kinds, a heavy cropper and excellent quality. Of course, what kinds are to be preferred may be very much a matter of taste, but for general frame purposes there are few kinds that answer better than the old Ashleaf Kidney. —A. D.

2988.—**Fuchsia splendens.**—Whether or not Fuchsias should be dried off at the root for the winter must depend upon the temperature of the house in which they stand. If a cold house where the frost is simply excluded the plants are best dried off if the plants are large, but if small, then let them be kept growing on. As a rule, they are dried off, because then the plants may stand under the stage for the winter, and thus make room for other things. Your Fuchsia splendens evidently is not happy in the soil in which it is, or else it has been kept too dry at the root. If the roots are pot-bound, that is the most probable reason of its failure. All Fuchsias should do well in an ordinary greenhouse at this time of the year, as most of them prefer a cool temperature. It will be time enough to begin drying off Fuchsias when the winter is really here.—A. D.

2722.—**Rusty Water.**—With reference to the incorrectness of the part of my answer to this query regarding the use of lead pipes, I beg leave to say, that in a short answer to a query on a matter where injury to health is concerned, and covering a number of varying cases, it is best to err on the safe side, and leave out the exceptions when those are few and complex. I have always understood that the principal danger in the use of lead pipes and cisterns was not the formation of soluble oxide of lead through the doubly oxygenated air which all waters in which a fish can live must contain, but the formation of lead carbonate or white lead, from combination of the metal with the free carbonic acid which most waters contain, especially those hard waters which are derived from chalk or limestone. The introduction of this salt into the human system in continued minute doses is the cause of the disease to which house painters are subject, known as painters' colic. The formation of a coating of a salt of lead which is insoluble in the acid which forms it only takes place when the acid is allowed to remain still while the coating is being formed. In etching on type metal plates it is found that keeping the acid in motion prevents the coating of the metal, and enables the plates to be bitten to the required depth. I found in making experiments that disturbing the acid every five minutes or so, and pouring it off, and substituting fresh about every twenty minutes, prevented the coating of the metal, the insoluble salt appearing in the form of grains like very fine sand. The following extract from "Elementary Chemistry," by the Rev. H. Martyn Hart, M.A., gives the dangers of using lead pipes in as few words as possible: "Lead, on account of its pliability, is much used for water-pipes and cisterns, but it should never be used for storing rain-water, for this is pure water containing air, and in such water the oxide of lead is soluble, rendering the liquid poisonous. Well-waters, containing nitrates and chlorides, act on lead, forming soluble salts, therefore they should not be brought into contact with it; but hard waters have little or no action on the metal, for a thin deposit of sulphate or carbonate is formed on its surface, preserving it from further attack. However, water charged with carbonic acid gas is capable of dissolving the lead carbonate to a dangerous extent. Water should never be kept in a lead cistern; for if it contain any carbonic acid gas, a lead carbonate would be formed, which renders the water poisonous." This extract it will be seen vetoes the use of lead cisterns and pipes for nearly all waters, except those which owe their hardness to sulphate of lime or magnesia, as waters from chalk or limestone owe their hardness to holding carbonate of lime in solution, which they could not do unless they contained free carbonic acid gas in solution also. My own experience of the injurious effects of lead pipes is limited to water pumped from the chalk. If coating the pipes inside with sulphate of lead will prevent carbonic acid from acting on them, it is a thing which cannot be too widely known.—The etching of lead cisterns by leaves mentioned by "J. B." would take place, not by the action of the acetic acid, but by that of the carbonic acid gas which escapes from all vegetable matters in the process of decay. As water is capable of retaining a considerable quantity of this gas in solution, and the more of it the more rapid will be the corrosion of the lead, it will be seen how dangerous it is to allow dead leaves and the dust of vegetable decay to get into lead cisterns containing drinking water.—J. D.

2844.—**Creeping Jenny.**—Although I have grown this plant for years under various atmospheric conditions, it is quite new to me to hear of it being affected with a white blight. Whether in London, or in a smoky Lancashire town, or at the seaside, where I am located at present—whether in the open or under the shade of trees, my Creeping Jennies never exhibit any sign of blight, but thrive most luxuriantly. With heavy soil I use a good proportion of well-rotted stable manure. Here in West Lancashire, where sand is over plentiful, I make a liberal use of cow manure, and, with plenty of water and a dose of liquid manure once or twice a week, my plants are dense masses of healthy greenery. "Marguerite" had better discard her present stock of Jennies, and obtain a fresh supply, planting them in moderately open and rich soil.—SAXON DEYNE.

2979.—**Moles in Gardens.**—I had a mole in my garden, and I procured a spring trap from the ironmonger's—price 7d. I got a friend who had had some experience in catching these animals to set it for me, and in two or three days we had him. It is said that the green leaves of the common Elder placed in their subterranean paths smell so offensive to them that they will not come near it. Or they may be poisoned by placing in their paths worms which have been left for some time in a small quantity of carbonate of barytes.—G. ROBJENT.

2835.—**Sowing Flower Seeds.**—It is too late to sow the seeds named by "J. T. M." True, the plants might be raised, but the difficulty would be to keep them through the winter, and even if that were successfully accomplished, there would be little or no advantage. Carnations sown in the open next May would bloom quite as soon as if sown now. Lobelias will be quite as useful sown next March. I have some in splendid bloom now sown last March. Pelargonium seed should be sown in the beginning of the year, but if you have only a cool frame March will be quite early enough. At the same time I think you will succeed best with cuttings rather than raising Pelargoniums from seed. Cockscombs are annuals; about March is the time for sowing seed. To grow them well requires a greenhouse. As to soil for seed sowing, it should be moderately rich, light, strong, and porous. Fibrous loam from rotted turves, decomposed manure from an old Melon or Cucumber bed, and silver sand will make a nice useful compost in which the tender rootlets will luxuriate. Grass turves cut from an old meadow now and stacked in a heap with the Grass side downwards, although best at two years old, will come in useful next year if decomposition is hastened by placing a thin layer of muriate of lime (see answer to query 2834) between the turves.—SAXON DEYNE.

2969.—**Plants under Trees.**—I have had a variety of plants under the shade of trees this year with the following results: Creeping Jennies, Pansies, and Antirrhinums have done well; Phlox Drummondi and shrubby Calceolarias fairly well; Stocks, Clarkias, Indian Pinks, Mignonette, and Geraniums very, very poor.—SAXON DEYNE.

2929.—**Tomatoes.**—Sow the seeds in a pot in the last week in March, placing the pot in a warm kitchen; when the seeds germinate place them in a window in a warm room, removing them at night; thin out and transplant into separate pots, placing the same out-of-doors in a warm place; take indoors every evening early until large enough to be permanently planted.—H. S. YOUNG.

2841.—**Houseleeks on Roofs.**—Sempervivum triste is one of the best, and succeeds well with me in the chinks of the sloping top of an old wall. The peculiar dark foliage contrasts well with that of the common Houseleek. S. arachnoideum forms pretty tufts of green and white. There are several other hardy sorts which do well on old walls, but it is not stated of what material the roof is composed.—W. D.

2966.—**Ivy for Fernery.**—There is no better kind than the small-leaved variegated variety. It does not grow very strong, and always remains charmingly fresh and bright, especially when in a shady situation.

2993.—**Blooms of Begonias Falling.**—The plant must have received some injury, probably at the root, caused by an overdose of water. The Begonia soon suffers when over-watered.—J. C. B.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

3054.—**Pruning Plum Stocks.**—I grafted some Victoria Plums this last spring; the shoots are now 3 ft. to 5 ft. long. Should they be pruned? or how treated? —W. G. K. [Let them remain till January; then prune them back to three or four eyes.]

3055.—**Placing Vines Out-of-doors.**—I have a small greenhouse and Vinery combined. The flowers are all out of it at present, and the roof covered with the Vines. The roots are outside, and the stems enter by a sash. I should like to take the heads out through the window now and supply their place with flowers which have been in a cold house since spring. Is it too early? the leaves are only beginning to get yellow.—BERTHA. [As the weather is so unusually fine you may turn them out at once with every chance of the wood ripening. Secure them to strong stakes.]

3056.—**Plants under Trees.**—There is a corner in my garden under a large Sycamore tree where nothing will grow. I have tried Periwinkle and common Ferns, but without success. The soil is sandy. What would be the best plan to adopt?—E. F. [Plant Ivy in a circle 9 ft. or 12 ft. or more from the base of the tree, and train it towards the tree. Dig out holes in which to plant, and put a little manure in the bottom of them.]

3057.—**Improving Soil.**—Having within the last two years made an extension of my lawn from an old pasture field, I find the flower borders in it have impoverished the flowers and bulbs I planted; the soil is stiffish clay. How shall I go to work to render this soil fine and rich?—E. B. D. [Take up the plants and give a good dressing of rotten manure and leaf-mould and road sand. Dig the ground deeply, and well incorporate the manure with it as the work proceeds; then replant.]

3058.—**Dielytra spectabilis.**—I have a large plant of Dielytra spectabilis which I wish to move to another position. It is more than 9 ft. round and tall in proportion. I shall be obliged to know the proper season for moving it safely.—D. S. [Now.]

3059.—**Propagating Geraniums.**—By what method can I procure slips of Geraniums? and how shall I propagate them? I have only a small space available in my greenhouse, which is without any heating apparatus.—ERNEST LLEWELLYN. [Take shoots of the firmest wood 6 in. long, cut close under a joint, remove the bottom leaves, and insert firmly in pots half-filled with broken crocks and very sandy soil. Place out-of-doors in shade for a week; then remove to greenhouse.]

3060.—**Carnations.**—What are those Carnations called which have the flakes or bizarres, as the case may be, on a red, purple, or crimson ground instead of white? —FLOS. [Red bizarres, purple bizarres, or crimson bizarres.]

3061.—**Stag's-horn Fern.**—I have a Stag's-horn Fern which has done well in my drawing-room all the summer; will it live and thrive in the same room in winter? Aspect south-west.—CLARE. [Yes, if the room is warm, and there is not much gas burnt in it.]

3062.—**Glass for Frames.**—*Light and Shade.*—Rolled cathedral glass will do for a frame in which to winter common plants like Geraniums, &c. It is, however, no better than ordinary window glass.

3063.—**Ripening Vines.**—Please say whether Vines in a cool Vinery will best ripen with the house kept closed or thrown open.—CONSTANT READER. [Thrown open.]

3064.—**Treatment of Strawberries.**—*Novice.*—Please refer to recent articles which have appeared in GARDENING.

3065.—**Rhubarb Running to Seed.**—*Novice.*—Put plenty of manure into the soil, and keep the seed stalks cut off as soon as they appear. Lifting is not advisable.

3066.—**Diseased Bark on Fruit Trees.**—*J. W. C.*—It is no disease. The branch dies first and the little red spots follow; you can find the same kind of thing on any old Pea stick. You must look elsewhere for the cause of branches dying.

3067.—**Abronia umbellata.**—*Indoctus.*—A cold frame will be sufficient protection for plants of this, unless the winter is very severe. If sown in September, grow out of doors until frosts occur; then move to the frame, and give no more coddling than is really necessary. This Abronia is, however, best sown in spring.

3068.—**Red Spider on Vines.**—*C. B.*—Red spider may be checked by sulphuring the hot-water pipes when they are highly heated, and the temperature of the house has been raised to 80°. Mix the sulphur to the consistency of paint, close all the ventilators, and apply it at night with a whitewasher's brush. Wash it off the pipes the following morning, and ventilate before the sun strikes the roof. Repeat the sulphuring once or twice at intervals of two or three days. Examine the borders and see that they have not been kept too dry. One of the most fertile causes of red spider is dryness at the roots, and the best preventive is giving them abundance of liquid manure throughout the growing stage. It should, however, be borne in mind that a heavy drenching may do serious mischief to the Grapes now about ripe. Syringe thoroughly as the Grapes are cut, and properly cleanse the house and Vines at pruning time by carefully scrubbing the rods, trellis, and woodwork with strong soap and water. Wash the walls with quicklime, and remove every particle of loose mulching and inert soil from the surface of the internal borders. This done, make a solution of Gishurst Compound, 8 oz. to a gallon of soft water, and apply it to the rods and spurs with a painter's brush. Watch the Vines closely in the spring, and should spider reappear sponge the young leaves with soapy water before it has time to spread. Any plants that may be in the house should be placed on the floor or removed outside while the sulphur is being used.

3069.—**Cauliflowers Turning Soft.**—*Souton.*—The land wants well manuring. Leaf-mould is of little use for Cauliflowers. As there are many kinds brought into Covent Garden, we do not know to which you refer, but Early London and Walcheren are the kinds chiefly grown for market.

3070.—**Propagating Epacris.**—*Vicar.*—Half fill some 6-in. pots with broken crocks, put a little Cocoa-nut fibre or Moss over them, fill up firmly with sifted peat and plenty of sand, and put ¼ in. of fine silver sand on the surface. Well water with warm water and let the pots drain for an hour; then insert ½ in. apart cuttings of the young tops about 1 in. in length, removing the bottom leaves with a pair of scissors. Water to settle the soil, and place in a close frame or greenhouse under a bell-glass, and shade from sun. Remove bell-glass for an hour each day, and keep the cuttings moist till rooted, then give plenty of air. The present is the best time for the work.

3071.—**Preserving Geraniums through the Winter.**—*R. N., Glasgow.*—These may be preserved in the window of any warm room if the gas is not too strong. They require to be kept rather dry. Sponge the leaves occasionally.

3072.—**Potting Violets for Winter.**—When ought I to pot Violets for winter flowering?—K. C. H. [Now.]

3073.—**Potting Camellias.**—Ought I to re-pot a Camellia now? The buds are well formed, and it has made a lot of new growth.—K. C. H. [No; wait till it has done flowering in spring.]

3074.—**Propagating Mulberries.**—How can I best propagate a Mulberry tree, as I am expecting a quantity of silkworms next year?—R. W. [Your best plan would be to buy plants from some good nursery, as if you propagate them yourself they will be too small to be of any service to you next year.]

3075.—**Weeds on Lawns.**—*Wm. H.*—How may I eradicate these without hand-picking? [Put a pinch of salt in the hearts of them at intervals of a few days, or try Watson's lawn sand.]

3076.—**Edging Beneath Shrubs.**—I have some walks overgrown by shrubs; would you kindly inform me how I may form an edging, the shrubs having caused the Grass to die? I cannot procure rock-stones for the purpose.—WM. H. [Plant Ivy and keep it pegged down, or St. John's-wort and Periwinkles will answer your purpose.]

3077.—**Watering Spiræas and Dielytras in Winter.**—*Mrs. D.*—The soil should not be allowed to get dust-dry, neither should it be kept wet until active growth commences.

3078.—**Growing Asparagus.**—Will Asparagus grow profitably north of London? Is a gravelly sandy soil in Hertfordshire suitable?—E. S. [Yes, if the ground be well enriched with stable manure or night soil, and it receives a good dressing of salt. Manure in winter, and plant in March.

3079.—**Moving Rose Trees.**—Can Rose trees be removed in September without its proving fatal to them? MRS. F. [Yes, if the weather is open.]

3080.—**Tenant's Right to Flowers.**—Can flowers in pots and boxes be removed from a garden without the landlord's permission if said plants were purchased by the tenant?—MRS. F. [Pot plants and those in boxes of course can be taken away, but trees and shrubs permanently planted cannot legally be moved without the landlord's consent.]

3081.—**Sowing Poppy Seed.**—When is the best time for sowing double Poppy seed?—Y. B. [March and April.]

3082.—**Bulbous Plants for Dwelling House.**—Are there any bulbous plants suitable for dwelling house culture in Scotland which come into flower after the Hyacinths?—J. B. [Tulips, Roman Narcissi, Squills (Scillas), Lilies, Vallotas, Triteleias, Anemones, Tuberous Begonias, Lachenalias, Gladioli, and many more. Procure a good bulb catalogue.]

3083.—**Runner Beans with Curled Leaves.**—*D. Moor.*—The leaves have been attacked by caterpillars, and the plants have evidently suffered from drought.

3084.—**Uses of Cocoa-nut Fibre.**—*H. S. Y.*—This is useful material in which to plunge bulbs during autumn and winter and plants in summer. It is also useful as a mulch for flower beds, and it will help to lighten heavy soils. Its great drawback is that it harbours insects to a great extent.

3085.—**Grape Vine Out-of-doors.**—I am thinking of planting a Vine against an ugly, bare, wooden fence, 6 ft. high, in an angle facing south and west. What is the best and most likely kind to ripen its fruit in such a position? Should the fence be tarred over first? and what is the proper time to plant?—NOVICE. [Royal Muscadine is as good as any. Plant it now or in March. You may tar the fence to preserve it if necessary.]

3086.—**Road Sand for Clayey Soil.**—*C. J. W.*—This is an excellent thing for clayey soil, especially when swept from streets in towns.

3087.—**Chemical Manure for Fruit Trees.**—Can Clay's fertiliser be used instead of stable manure for fruit trees? and at what time of the year should it be applied?—C. J. W. [Yes, but it is not nearly so good as stable manure. Apply it as a top-dressing with some fresh tufty loam in spring.]

3088.—**Slugs in Vegetables.**—I have about 150 to 200 Savoys, and also some Cabbages, almost full grown, and some with very fine hearts. Nearly all the leaves are riddled through like a sieve. On looking into the hearts I have discovered several large slugs and hundreds of black eggs. Can you give me a remedy to destroy them so as to save the vegetables?—DENTIST [It is as well to persevere in hand-picking the caterpillars from the Savoys, as those destroyed now will lessen their numbers next year; but when they are so badly infested there is little hope of making the present crop usable, that it would be well to cut them and give them to the pigs. If the stalks are left, the earth between them stirred up deeply with a hoe and some short manure spread among them, they will break out again, and the next crop, although smaller in size, will most likely be clean and free from insects.]

3089.—**Cutting Leaves from Strawberries.**—Some people cut all the leaves, &c., close to the ground from their Strawberry plants at this time of the year. Is this a good plan?—CANDELLUS. [No; remove all runners and dead leaves, and cover the ground with some well-rotted manure.

3090.—**Soil for Fuchsias.**—What is the proper sort of soil for Fuchsias? and the proper time to re-pot the same?—HOROLOGICAL. [Turfy loam three parts, rotten manure or leaf-mould one part, and a little road sand or oyster shells broken up fine. Re-pot when the pots are full of roots, but you would not require to pot any till spring.]

3091.—**Begonias.**—*M. S. P.*—The name of the smallest of the two Begonia leaves sent is Begonia parviflora. It can easily be propagated in a similar manner to the Fuchsia; care must, however, be taken not to overwater the cuttings; being of a succulent nature, they are very liable to rot off. As your plant is now fading, all that you can or need do is to keep it dryish at the root, and safe from frost during the winter. Then in the spring repot into good soil, and treat in a similar manner to a Fuchsia, the only difference in the culture required being that the Begonia does not want quite so much water at the root. The larger leaf sent was smashed beyond recognition.

3092.—**Wellingtonia gigantea.**—*Pansy.*—We cannot recommend the Wellingtonia for planting near London or other large towns; as a rule, it does not thrive well unless it is quite away from a smoky atmosphere.

3093.—**Twelve Early-flowering Single Tulips.** *Gang Forward.*—Duc Van Thol, Bacchus, Commandant, Kaizer Kroon, Pottebakker white, do. yellow, Kanarie Vogel, President Lincoln, Proserpine, Cottage Maid, Silver Standard, Rembrandt.

Clifton—The firm you refer to is thoroughly respectable. Neither we nor they could read your signature. The goods were sent per post to the name of "Morfau," and returned to sender as "not known."

Names of Plants.—*J. R. G., Warwick.*—Cornflower (Centaurea cyanus).——*Young Botanist.*—2, Lycopodium inundatum; 3, Lycopodium clavatum.——*Ramalho.*—The Apple is Summer Haglo.——*Oblidge.*—Hibiscus syriaca.——*H. L. A.*—Francoa sonchifolia.——*Ashtead.*—Fuchsia Earl of Beaconsfield, apparently.——*J. D.*—1, Deutzia gracilis; 2, Cytisus racemosus; 3, Azalea amœna.——*Arthur Smith.*—If you send shoots of the trees we can probably name them, but we cannot do so from single leaves.——*P. S.*—Impatiens glandulifera.——*Ashtead.*—Statice atifolia.——*M. E. R.*—1, Polypodium vulgare cambricum; 2, P. vulgare.——*Constant Reader.*—Some kind of Onion plant, but we cannot say which from a leaf.——*Mrs. D.*—Eucalyptus citriodora. It will only stand the winter in very warm sheltered localities in the south of England.——*Saxon Deyne.*—Gypsophylla paniculata.——*J. S. A.*—1, Sedum album; 2, Geranium Endresi; 3, Campanula racunculoides.——*F. Grant.*—We cannot name Pansies. Send Beans to Sutton's, who have the means of comparison.——*F. W. B.*—Verbascum nigrum.——*B. F.*—The Hoary Sheep's Fescue (Festuca ovina).——*A Reader.*—From appearance of leaves sent, seemingly a Cratægus of some kind, but cannot tell which without flowers.——*D. Moor.*—Giant Knotweed (Polygonium cuspidatum), a hardy Japanese perennial.

QUERIES.

To Querists.—*All questions are inserted or answered in these columns free of charge, provided the following rules are observed:* 1.—*Write clearly and concisely on one side of the paper only.* 2.—*Use a separate sheet of paper for each query.* 3.—*Give full name and address, with any* nom de plume *or initials you may wish used in the paper. Questions only of interest to the persons asking them should be accompanied with a post card or stamped addressed envelope for reply.*

3094.—**Plants for Greenhouse.**—I have built a lean-to greenhouse against a south wall in east London, 14 ft. by 6 ft., and have grown during the summer Fuchsias, Geraniums, Balsams, and Coleuses chiefly. I should like to know what quick-growing plant I could grow against the wall, scented preferred; what heat I should require for wintering flowering plants as Cinerarias; and what to do with old Fuchsias, Balsams, Geraniums, and Coluses.—E. P. M.

3095.—**Cactus not Flowering.**—My Cactus never flowered though potted as directed. Please give a list of those that flower freely.—S. M. G.

3096.—**German Ivy.**—Can any reader tell me where to get Ipomœa hederæfolia, sometimes called German Ivy? I have asked for it at some of the leading nurseries without success.—K. M.

3097.—**Imperfect Fuchsia Blooms.**—Can any one suggest the reason of the flowers of Fuchsia Rose of Castile cracking around the neck? I have grown several plants of it for the last three years, but have never had perfect flowers. They are grown and flowered in a cool greenhouse, and watered occasionally with weak sheep manure water. What is the best compost to grow Fuchsias in? and should they be placed out-of-doors to ripen the wood before flowering?—W. W. MARLER.

3098.—**Prickly Comfrey.**—I was intending to plant Prickly Comfrey (Symphytum asperrimum) to help to feed an Alderney cow, but I am told that cattle do not like it, and will not eat it unless they are half starved. I can only spare a small plot of ground. Ought I to plant Prickly Comfrey or Lucerne (Medicago sativa)? The latter I know gives an abundant crop, and may be frequently cut as green food. According to some reports I have read, the Comfrey, however, yields even more abundantly. I shall be glad to have advice on the subject.—C. W.

3099.—**Climbers for South of England.**—Will any reader tell me the names of quick-growing flowering evergreen climbing plants suitable for the wall of a house facing south, but rather exposed to east winds, in the south of England near the sea?—M. B.

3100.—**Scarlet Runner Flowers Dropping off.**—I want to know whether this can be prevented. I have a large quantity of healthy plants blooming well, and not an insect or grub to be seen, but the flowers droop and drop off without setting. On observing and searching closely I found that bees, both hive and humble, instead of entering at the front in search of honey, perforate the flower at its junction with the calyx, and drill holes all round with their probosces; flies follow suit, and this I take to be the cause. If any one can tell me of a remedy I shall be obliged. Some powder or odour which bees do not like might answer the purpose.—D. Y. N.

3101.—**Diseased Peach Trees.**—For the last three years my Peach trees under glass have been attacked by a disease, and though I have tried a great many authorities in such matters have hitherto not heard of any cure for it. Mr. Rivers told me to hunt for beetles, and said my experience showed them to cause the disease. I found the beetles, and so effectually cleared them out that I have not been able to find one this year, yet the disease is worse than ever, and I have just learned that though at Blickling they are swarmed with the same beetle they have not the disease. Will you kindly interest yourself in this matter, and give me any information you may obtain?—JOHN S. BOLTON.

3102.—**Autumn-planted Potatoes.**—Will some one who has practised autumn Potato planting tell me how to proceed, as I wish to try it? Full particulars as to manure, time of planting, &c., will oblige.—G. R.

3103.—**Management of Fern Case.**—I have a Fern case of which the dimensions are: length, 3 ft., breadth, 18 in., height, 38 in. The back and ends are boarded up, the front is of glass, and the top also. Which will be the best way to get the Ferns to grow out from the back and ends? I have a small one made in the same way, the Ferns in which grow very well with wire netting taken round it, and Cocoa-nut fibre and sandy loam put between the wire and the back. Can any one suggest anything better? My next question is, what will be the best way to heat it in winter?—A NEW SUBSCRIBER.

3104.—**Mosquitos in Houses.**—My house in Natal is infested with mosquitos coming from the conservatory. Can any one assist me to remove or mitigate the pest? I have tried burning sulphur, but without any good result; neither has Tobacco smoke.—DURBAN.

3105.—**Propagating the Gum Cistus.**—Will some one kindly tell me when and how to propagate this plant?—E. E. C.

3106.—**A Floral Police.**—Your correspondent "Ailenroc" asks if Broom tied round Gooseberry bushes keeps off the caterpillar. Possibly it may; I know not, but I have not referred to his question for the purpose of answering it, but because it calls attention to a branch of study which has not been fully prosecuted, I believe. Does there not exist an efficient floral police beneficently provided by Nature for the protection of the vegetable world, and furnished by members of its own constituency? We are told that in law there is a remedy for every wrong, and in medicine an antidote for every poison, though not all are at present known. So I believe there exist plants which are respectively protectors and guardians of the various other plants in the botanic world. One of these floral police is well known to many, viz., the common Pyrethrum, and I have found it of incalculable value in my kitchen garden. I wish that someone would give an article on this subject, and refer me to any book in which Darwin or Lubbock may have treated on this question. I have just heard of a case where a crop of Mustard completely cleared a field of wireworm.—LLEWELLYN.

3107.—**Plants for Small Garden.**—I will be obliged if any reader of your valued paper will advise me of the most suitable plants to grow in a piece of ground (in back-yard) about 10 yds. square; it faces south, but is partly shaded by yard walls. Also what flowers to grow in ground in front of house, facing north, and in shade the most of the day; the ground is about 6 yds. long by 3 yds. wide. When should I plant the flowers? I may mention that the ground is of a stiff clayey nature, full of worms, and has previously been covered with Grass. If suitable I would like to grow a few Roses, Mignonette, &c.—sweet smelling plants. What would be the best climbing plant to train up the walls? and when shall I plant it?—NORTH SHIELDS.

3108.—**Leafless Mulberry Trees.**—A Mulberry tree which has been in our garden for twenty years has this year no leaves within more than 3 ft. of the ends of the branches, and has no fruit instead of the usual abundant crop. We hear that a neighbour's tree is in the same condition. Is it from any preventable reason?—M. N. O.

3109.—**Keeping Potatoes.**—I shall be glad if any of your readers can inform me the best way to keep Magnum Bonum or other late Potatoes till end of May.—M. A. C.

3110.—**Colouring Grapes.**—I have seen hothouse Grapes very black, but without any bloom, and having the appearance of having been dipped in some preparation. I shall feel obliged if any one can tell me how this appearance is obtained.—R. B. M.

3111.—**Climbing Roses.**—I have just removed into a new house facing west by south, and am wishful to train up some three Rose trees, a white one under window to go directly up each side, and a red one on either side. Will some one name varieties most desirous, and soil to plant in, and any other useful information with respect thereto? I would mention that there is a border, 15 in. wide goes up in front of window, and that there is clay at 8 in —RHODODENDRON.

3112.—**Iris Seeds.**—I have just gathered splendid seeds of the Iris. Will some practical friend say how to treat them for producing future bulbs?—CANDELLUS.

3113.—**Plants Becoming Weak and Drawn.**—I should like to know how to remedy an evil that is with me. I live in a close confined place in the town, and being fond of flowers, for years have been trying all sorts of plants in pots, but have received no success. I have this year constructed a small window greenhouse, but this fails, and I cannot get a bloom on a plant, and all the plants get weak and spindly; even the plant Stonewort, commonly called Stonecrop, is becoming as fine as a hair, while some of my neighbours will have strong healthy plants. Now how to remedy this I cannot tell, for it confounds me. Can any one inform me what causes the production of green Moss on the mould? If we continually wash the pots they become covered with this green, and the wooden boxes the same; this will grow if the plants will not. I read in GARDENING what people can do with stone yards and close confined places, but as for myself all is disappointment. I may add we have the sun in our yard from eight in the morning till twelve at noon, and longer in some parts, but where the plants are the time stated?—CONSTANT READER.

3114.—**Club in Cabbages.**—In my garden I am much troubled with club in Cabbages and Cauliflowers, which is caused by a small white insect. This summer, even when the Cauliflowers are half formed, the leaves flag and further growth is stopped, and when taken up, there are about a dozen lumps from the size of a Nut to a man's finger. I generally bastard trench the ground, as it is only shallow soil about 15 in. deep. In last week's GARDENING a correspondent recommended dipping the plants in soot and earth mixed to a paste when planting. Could clubbing be prevented by watering the plants with a solution of nitric acid, say 2 oz. to 2 gallons of water, or a strong solution of salt and water? Can any one give me some information how to cure this pest? I should be very grateful, as I have been struggling with it for four or five years.—PERSEVERANCE.

3115.—**Planting Currants and Gooseberries.**—I am clearing off my garden some old Gooseberry trees. Will some one inform me how to prepare the ground for new ones? also what sort to plant, and when to do it? I should like to have them as espaliers also. Can old Currant trees be put in the espalier form?—J. HORWELL.

3116.—**Pruning Ladder.**—Can any one tell me if there is any place in England where the double ladder used so much in France for pruning trees, can be procured? They are about 14 ft. high, broad at the base and narrow at the top, with hinges and light to carry.—ROSALIE.

3117.—**Water Snowdrop.**—I once grew this with great success in an aquarium, but have not since been able to find a dealer with any knowledge of the plant. Can any one assist me?—J. G.

3118.—**Heating a Brick Pit.**—I have a large brick pit, about 20 ft. by 8 ft., and wish to utilise it for keeping bedding plants, &c., during the winter. What is the best means of keeping the frost out? Would a petroleum stove answer? and, if so, whose would you recommend? The winters are rather severe here, and gas is not available.—J. H. W.

3119.—**Unfruitful Grape Vine.**—I have a Grape Vine trained against a wall which faces the north. For several years the fruit has been blighted with mildew. It is always damp, as the waste water from the pump runs near the root. Is there any cure for it? or would any kind of Plum succeed better?—T. C.

3120.—**Fuchsia Buds Dropping.**—My Fuchsias do not come into bloom; they appear healthy, and their growth is luxuriant; but when the buds have reached the point of opening they invariably drop off by the stem. Can any one give me the reason for this?—MCGILLICUDDY.

3121.—**Annuals for Profit.**—I possess a heated greenhouse and a cold frame, and as a source of profit I am desirous of cultivating a few annual flowers for the purpose of making button-hole bouquets. Will any one of experience kindly advise me as to which are the most suitable kinds to grow, and that would last well after being cut? Also when to sow them.—G. H. P. J.

3122.—**Hollow-stalked Celery.**—My Celery, a white variety, was planted early in July in a well-manured trench, and I have given it manure water several times. It is now from 2½ ft. to 3½ ft. high, wrapped in paper to bleach it, but the stalks are all hollow and tough. Can you or any reader explain this, that I may avoid such a disappointment in future?—R. S. VENABLES.

3123.—**Diseased Hollyhocks.**—My Hollyhocks have been totally destroyed this year by a fungus in the leaf. They began to be affected about the end of June, and there is neither leaf nor flower left. Can any one tell the reason, and how to guard against it in future?—J. L.

3124.—**Dressing Carnation Blooms.**—Will any one be kind enough to give me full practical directions on the art of dressing Carnation blooms for exhibition?—FLOS.

3125.—**Trees for Shelter.**—Will some one say what would be the best trees to plant—first, to break the force of the east winds, and, second, for ornament—along a wall 32 ft. long and facing south? They would, of course, be required to grow considerably higher than the wall. The ground inside the garden is 3 ft. higher than the road. Would fruit trees, such as Apples, answer he purpose?—J. W.

3126.—**Mites in Drying Paper.**—Can any one tell me how to destroy and prevent mites which are developed in the drying paper which I use for pressing botanical specimens?—S. A. S.

POULTRY.

Vermin in Geese.—I keep a great number of geese, which are so infested with vermin of different kind, that I am at a loss to know what to do. Can some reader give me good advice to help me out of my difficulty?—LUPUS.

Chicken Dying.—Could any reader of GARDENING tell me the reason why one of my Leghorn chickens have died? It was hatched about the beginning of July, and was healthy till about ten days ago, and then it pined away and died. I gave it some Parrishe's Chemical Food, and fed it with bread and milk with Corn mixed in, but it was no good. The reason why I gave it Parrishe's Chemical Food is as follows: My next-door neighbour has a large number of chickens; some died off, and I was asked if I could do anything. I recommended the food, and the chickens quite recovered, but mine did not. I can see no apparent reason for the chicken having drooped so.—W. KIDDLE.

Fowls with Coughs.—Can any of your readers tell me of a cure for a nasty shrill cough my poultry have had for some months? It seems to trouble them most when eating grain. We have tried damping it, but that makes no difference. It does not affect their appetites or looks, but one hen had it so badly, we thought it better to kill it.—F. H. A.

Pure Bred Hamburghs.—What are the characteristics of a pure bred speckled Hamburgh cockerel? and of a pure black Hamburgh pullet?—WOOD B.

HOME PETS.

How to Keep Doves.—I have kept a pair for some time, and find the following treatment of them answer perfectly. Give them a wicker cage large enough to allow them to exercise their wings as much as possible, or else let them out every day for a flight in a room; this will also tame them. Clean out their cage every morning regularly (I find a long-handled plate-brush will do this most effectually with plain water, and twice a week soap and water). Fresh seed and water every day is most important, and they like dry bread. I feed my doves on Hemp seed, Buckwheat, and canary seed mixed, and in summer I give them occasional green food in the shape of Chickweed or blades of green Corn. Keep them from cold and draughts, damp and heat. I hang mine out-of-doors all day when fine, but take them in at night. A potted-meat jar or dish is the best water vessel for them, as they can take a bath in it. If troubled with vermin, sprinkle some Hardeman's Beetle Powder among their feathers, which is harmless to taste and touch. Keep them out of the way of dogs or cats. Doves lay two eggs at a time, which produce a pair of birds, and these, when old enough, should be mated. My doves, though no longer young, lay assiduously from early spring to autumn. When hatched, put in the cage a finely chopped-up hard-boiled egg mixed with a little dry bread or Hartz Mountain Bread for the parent birds to feed their young with. They are stupid birds, and the cock very "touchy" and easily provoked, but they can be tamed easily, and are devoted parents to their young.—K. C.

Keeping Jays.—Having caught two young jays under my Pea netting, and wishing to keep same in a cage, I should be glad to know the proper food to feed them upon?—J. V. M.

Birds in Fern Cases.—I have a large Fern case, 7 ft. square and 6 ft. high, well stocked with various Ferns. Might I with safety turn in among the Ferns, say, half-a-dozen canary birds? There is plenty of room, and the case is very well ventilated.—LIVERPOOL.

Book on Goats.—Can any of your readers inform me of the best shilling book on goats, and the address of the National Goat Society?—KID.

AQUARIA.

Stocking a Bell-glass Aquarium.—*Campion Dawson.*—Not knowing the contents of your propagating-glass, I cannot say the exact quantity of stock it will hold. The proportion of plants to fish must depend on the size of both, and upon the amount of confervoid growth allowed. It is best to have a few fish and see them doing well, and then add to their number. Let the plants be well rooted, and encourage the growth of confervæ, and moderate the amount of light. The cloudy condition of the water arises from floating particles of vegetable matter, produced by too much light. See No. 60. In No. 67 you say you do not feed your fish. Give them vermicelli and small red worms.—T. CHADBURN.

Plants for an Aquarium.—"Ferry Hill, Durham," requires too much for his aquarium; he wants to make a shrubbery of it. I would recommend him to read Shirley Hibberd's little book on the "Aquarium and its Contents," published at Groombridge & Sons, Paternoster Row, where he will find the best means of management.—HYDROUS PICCUS.

—— *G. A. W.*—In your case we think you had better make a fresh start, and begin by setting your plants well rooted. Make a small box of thin wood about 1½ in. deep inside. Fill 1½ in. deep with well-washed sand. In this plant Vallisneria and Anacharis, and then cover the surface with small pebbles. Place this in the centre of your tank bottom on the glass, and cover the rest of the bottom with shingle or small stones. Let the plants get rooted, and if there is a bit of spar on the bottom, it will soon be covered with confervæ. Then introduce the stock, beginning with few. If your fish come to the surface and gulp in atmospheric air, you will know something is wrong, and they are too crowded, or too hot, or something equally wrong.—T. CHADBURN.

—— Can any reader of GARDENING answer the following: I have a small aquarium with wood ends and sides of glass, ends and bottom lined with zinc. I should like to have some water plants; would zinc hurt them? What kind of plants are most suitable for an aquarium about 8 in. deep?—STICKLEBACK.

Making Aquariums.—I have lately seen several hints in GARDENING as to making aquariums of various sorts, but which are unsatisfactory, inasmuch as they do not state (as the old cookery books did) how to "catch your hare." In other words, I would ask where to get, what to pay, and how to apply solder. My own plumber would, I feel convinced, send in his "little bill" at once if I was to ask him.—GUDGEON.

Self-acting Fountain.—I am anxious to know how to construct a self-acting fountain for an indoor Fernery.—FOUNTAIN.

Cement for Aquarium.—I would like to know a suitable putty or cement to fix glass in an iron frame aquarium?—A CONSTANT READER.

Gold Fish.—Can any one tell me the reason that the gold fish and minnows in my bell-glass aquarium go so much to the top of the water, not lying lazily along the top as if weak and languid, but with their mouths pointed upwards, swimming round and round? I have green weeds and molluscs in the glass, and often renew the water, keeping it clear; the glass is also shaded from the strong light. Also where can Robert's food for gold fish be procured?—UNA.

Honeydew.—"H. D." persists in holding to the belief that honeydew is a plant product, and not the excreta of aphides. How is it that it is never found totally dissociated from the aphis, which seem to have the power to eject it a long distance? Further, it is never found on the undersides of leaves, and if it were a natural exudation, why should that be so? It is also always found on leaves that are beneath the points occupied by the aphis; and as now may be seen on some Rose leaves here, the excreta has passed into a decomposed mouldy state, that will wash off and leave the surface of the leaf quite intact. It is very cool on the part of "H. D." to call upon "Sir John Lubbock and other writers to correct their erroneous impressions" on this matter because he chooses to hold they are wrong and he is right; but his believing as much does not prove it, rather in his case it seems to prove the reverse.—A. D.

Killing Slugs.—In my note in a recent issue of GARDENING ILLUSTRATED under this heading there is a mistake likely to mislead, viz., Gas lime should have been Lias lime, as gas lime would be likely to taint anything it touched.—H. SLINGSBY, JUN.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, doz	..	..	0	3	0	0
Arum Lilies	..	..	0	0	0	0
Bouvardia	..	..	1	0	3	0
Carnations, doz bun	..		4	0	9	6
Carnations (Tree) doz			1	0	3	0
Cornflower, doz bun	..		3	0	6	0
Eschscholtzia	..	..	2	0	6	0
Eucharis, doz	..	..	5	0	6	0
Ferns (various) doz bun			4	0	9	0
Fuchsia	..	..	..	4	0	6	0
Gardenia, doz	..	..	3	0	9	0
Heliotrope, doz bun	..		0	0	6	0
Mignonette, doz bun	..		2	0	6	0
Myrtle, doz bun	..		0	0	6	0
Pelargonium (znl) dz bun			3	0	6	0
,, (large flower)	..		6	0	12	0
,, (double)	..		6	0	12	0
,, (Rose-scented leaf)			3	0	6	0
Phlox, doz bun	..		6	0	9	0
Pinks	..	..	..	4	0	9	0
Primula (dbl) dz sprays			0	9	0	0
Roses, doz bun	..		4	0	9	0
Stephanotis, doz trusses			3	0	6	0
Sweet Peas, doz bun	..		3	0	6	0
Sweet Sultan	..	..	4	0	6	0
Tropæolums	..	..	1	0	3	0
Tuberoses, doz	..	..	1	0	3	0

Pot Plants.

Arbor-vitæ (golden), dz			9	0	18	0
,, (common)			6	0	12	0
Aralia Sieboldi, doz	..		12	0	30	0
Begonias, doz	..	..	6	0	12	0
,, (fine-foliaged)	..		6	0	12	0
Berberis	..	..	4	0	9	0
Bouvardias	..	..	12	0	18	0
Clematis	..	..	9	0	18	0
Crotons	..	..	12	0	42	0
Dracæna (green)	..		12	0	30	0
,, (variegated)	..		18	0	60	0
Echeverias	..	..	4	0	6	0
Euonymus	..	..	6	0	12	0
Euonymus (variegated)			8	0	18	0
Ferns	..	..	..	6	0	18	0
Ferns (small) per boz			3	0	5	0
Ficus elastica, doz	..		18	0	60	0
Fuchsias	..	..	..	6	0	12	0
Gardenias	..	..	18	0	36	0
Mignonette	..	..	4	0	6	0
Nasturtiums	..	..	3	3	6	0
Palms (large) pair	..		15	0	42	0
Palms (small) doz	..		18	0	60	0
Pelargoniums (scarlet)			2	6	9	0
,, (double)			6	0	13	0
Selaginella	..	..	3	0	4	9

Fruit.

Apples (culinary) bush			4	0	5	0
Grapes (English) lb	..		2	0	5	0
Lemons, box	..	..	30	0	35	0
Oranges, 100	..	..	8	0	16	0
Pears (dessert kinds), dz			2	0	3	0
Pine-apples (St Micls) ea			5	0	15	0
,, (English) lb			2	0	4	0

Vegetables.

Beans (French), lb	..		0	2	0	6
,, (Runner)	..		1½	0	0	2
Cabbages, tally	..	..	1	0	2	4
Carrots, doz bun	..		4	0	5	0
Cauliflowers	..	..	0	4	0	6
Celery, bundle	..	..	1	0	2	0
Corn Salad, half sieve			0	0	2	0
Cress (plain), doz pun			0	0	2	0
,, (Watercress) dz bun			0	9	1	0
Cucumbers, doz	..	..	2	6	5	0
Endive	..	..	..	2	0	3	0
Garlic, lb	..	..	0	0	0	6
Horseradish, bun	..		3	0	5	0
Lettuce, score	..	..	0	4	10	0
Leeks, doz bun	..	..	1	6	3	0
Mint	..	..	..	4	0	0
Mushrooms, pottle	..		1	3	1	9
Potatoes (rud knds) ton			100s. to 200s.			
,, (Kidney), ton			120s. to 180s.			
Parsley, doz bun	..		2	0	4	0
Radish, doz bun	..		1	6	3	0
Spinach, bus	..	..	0	0	2	0
Turnips, doz bun	..		4	0	5	0

GARDENING
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TUBEROSE GROWN IN THE OPEN AIR NEAR LONDON.

TUBEROSES.

OUR frontispiece this week represents a spike of flowers of an unusually well-grown Tuberose produced in the open air in a garden near London. Though a native of the East Indies, strong imported bulbs of the Tuberose will flower well in the open air during the month of August in warm soils. It must, however, be remembered that, like Hyacinths and similar bulbs, Tuberoses will not flower so well the second year as they do the first year. Sufficient strength to flower well is only found in bulbs grown and matured under the sunny suns of Italy and France, from whence most of the Tuberoses grown in this country are imported. For greenhouse culture Tuberoses are greatly prized on account of their wax-like perfumed flowers. London bouquet makers especially seek for blooms of the Tuberose on account of their white, waxy appearance, their durability, and perfume. Thousands of bulbs are imported yearly from France; one grower for market imports from 25,000 to 30,000 bulbs annually. These are divided into batches, in order to obtain as long a succession of bloom as possible. The beginning of November is the time when the first batch is usually started. The bulbs are potted in small pots and placed in a warm house supplied with a good bottom-heat bed. When the shoots have attained an height of 9 in. or 10 in. the plants are potted into 6-in. pots, and pushed rapidly into bloom. As the spring advances less bottom-heat as well as top-heat are required to bring the plants into bloom, and after April they are grown in pits and frames fully exposed to light and sun, and abundance of air is given in fine weather. Forced plants when in bloom are placed in a cool house to harden them before being cut, in order that they may stand longer when sent to market. In the best of the season, which is from May to August, good plants often bear as many as six large and fragrant blossoms, but during dull weather two or three inferior ones only are produced. Light, rich mould, to which plenty of sand has been added, is the kind of soil used for Tuberoses, but they will succeed in any good garden mould. Nearly all the year round a good supply of Tuberoses may be obtained by good management. The flowers from which our illustration was prepared were sent to us by Mr. Ware, of Tottenham. The botanical name of the Tuberose is Polianthes tuberosa.

Carnivorous Insects.—Being busy with my Tobacco water and brush in the interests of a fly-infected Fuchsia, I became aware of the presence of a tiny creature of about ¼ in. long, whose action is best described by likening it to that of a leech—the same grip of the tail and blind, helpless manœuvring of the head. Removing the leaf for further examination under the magnifying glass, I came to the conclusion from the formation of the head that he was carnivorous, and, offering him an aphis, it was seized with avidity, and in about ten minutes was sucked dry, the dried-up skin (similar to those to be seen on fly-infected plants) being then tossed away. As my new friend has polished off twelve aphides and a small green caterpillar since the morning, I shall be glad to know more about him, as the introduction of a few into a conservatory might be worth a trial. The head and thorax are translucent, as, indeed, more or less, is the body. The body is white and the back fawn-coloured, with brown markings, the body being in six segments. If the insect and its habits, however, are not very generally known, this letter may be interesting to your readers, and also serve to open the question as to whether it is well to kill friend and foe alike by wholesale syringing.—H. H.

FRUIT.

MAKING BORDERS FOR FRUIT TREES.

LAND naturally porous, and indeed often too dry in summer, is not unfrequently in a waterlogged condition in winter. Therefore, all properly made fruit borders should have a drain along the front, with a good clear outfall that would be free in times of flood; in some gardens it would only be in times of sudden downpour in autumn or winter that the drains would be required, and in all cases the sooner all excess of water in the land is passed away the better, as it lowers its temperature so much. In preparing borders for wall trees, width, and in some measure depth, must depend upon the height of the wall.

Width of Border.—A tree that is expected to cover a large space must be allowed a correspondingly wide root-run. Thus, in most gardens, it has been the custom to allow the wall borders to have the same width as the height of the wall, and it should be over rather than under; and then the front might be cropped with dwarf-growing vegetables or salads. These borders are so valuable for early crops that they cannot be dispensed with. The present time, before the autumn rains set in, is the best time to make new or remake old fruit borders. The work can be done more expeditiously when everything works cleanly. Another and more important advantage is, it gives a period for the soil to settle before planting; and it is a great advantage to the well-being of all deciduous trees to be planted by the end of November.

Depth to Plant, &c.—For a tree that is expected to live to a good old age, to lead a steady, regular, and consequently a fruitful existence, not excited by stimulants, or unduly crippled by poverty through being confined too much in its feeding bed, 3 ft. may be taken as a good average depth. In some places where the subsoil is very inferior a few inches less will suffice, and the border should also be raised a few inches above the natural level. No doubt good crops of fruit have been grown in shallow borders, but in this case more care and labour are involved; and, unless there be a positive necessity through the subsoil being of a cold, wet character and the neighbourhood low and difficult to drain, a depth approaching to 3 ft. will give the best result, if lasting fruitful powers are sought in combination with fully developed trees. Where chalk abounds, 5 in. or 6 in. of it placed in the bottom and rammed down firmly makes a good foundation; or 3 in. of tempered clay placed on top of the clay, and well kneaded and trampled in, and rolled when approaching dryness, also forms a good hard floor. A layer of concrete answers the same purpose, or the bottom may be paved with tiles or bricks laid on cement; in short, the materials that can be most easily obtained should be used in each case. The bottom of the border should have a fall of 1 in. in 8 in. or 10 in. to carry off the water to the drain in front, which should be made at the same time the border is excavated, laying the pipes along its front and a few inches below its level. The soil for the different kinds of fruit will not vary much in the same locality.

Peaches should have a good sound loam, neither heavy nor light, with as much fibre in it as possible, and if soil of this quality and texture cannot be had, secure the best and nearest approach to it. From 4 in. to 6 in. thick of the top of the sheep pasture is the soil sought for by the cultivator, and where success is aimed at it is a mistake to refuse the means to do things properly. Apricots will thrive in rather a lighter soil than Peaches; and Cherries, again, thrive best in soil of a gravelly or a stony nature rather than heavy or close. Plums, Pears, and Apples succeed very well in well-drained mellow, loamy soils. S. W.

Cherries in Small Gardens.—The May Duke and the Morello are the kinds best suited for a small garden; they may be grown in the bush form on the Mahaleb stock or fan-trained on a wall. In a warm corner against a wall the May Duke comes in early and often bears profusely. Not far from where I am writing there is a May Duke Cherry against the front of a cottage; I believe when it was planted little or no preparation was made for it, and the immediate space over its roots is partly paved and gravelled; yet the crop of fruit that the tree annualy bears is something marvellous. No doubt the soil is suitable, and the hard, firm surface has much to do with its prolific habit. What I have seen in this way leads me to the conclusion that there cannot be a greater fallacy in fruit culture than to suppose that it is necessary to dig and delve over or amongst roots. It may do no harm the first few years, or rather, I should say, no perceptible injury is done, but if anything beyond a surface cultivation be carried on it must drive the roots downwards. When once a tree settles down into a bearing condition the roots should not be disturbed in any way, and no implement beyond the hoe should be used during summer, and where a little mulching can be put on in spring the use of the hoe may become unnecessary. What we require in a fruit tree is a medium annual growth—in fact, just af air amount of extension in order to keep up the tree's health and vigour. And this is best secured by a firm soil and light annual top dressing, but no manure should be placed in contact with the roots, as the chances are the growth will become too gross, and if so, farewell to fruit bearing till the tree has been lifted and root-pruned. It is better to avoid the necessity for this if it can be done, which it may be, by a fine soil and judicious summer pinching. The Morello is a very prolific Cherry, seldom fails to bear, and is especially adapted for a north aspect. In September, when the fruit is ripe, it is sometimes worth 1s. per lb., and the trouble required is but small. The fruit is produced on the young wood, and the disbudding and pruning recommended for the Peach are quite suitable for this Cherry. One of the chief faults in its management, observable almost everywhere, is laying in too much wood. Overcrowding the wood does not produce more fruit, but the reverse, and it tends also to debilitate the tree, and is often the cause of branches dying off in summer.—H.

Pruning Peach Trees.—As soon as the fruit is gathered, all the small shoots should be unnailed, and all the fruiting wood cut back to the point whence the young wood starts; unless there are vacancies to fill up, there is no occasion to wait for the falling of the leaves to do this, as I believe the sooner this is done in autumn the better the young wood will ripen; but shortening of the young wood had better be delayed till February for two reasons: First, because after the buds have swelled a little there will be no difficulty in distinguishing the flower-buds from those that produce wood only, and it is important to cut each shoot back to a wood-bud, as without a leader the fruit, even if it set, will be flavourless; and secondly, leaving the shortening till the buds are pushing, and leaving the tree unnailed till the last moment, has a tendency to retard its flowering, and a few days' delay in the case of severe weather sometimes saves the crop. The young wood should be cut back one-third, one-half, or two-thirds, according to its strength and firmness; always cut back to well-ripened wood.—E.

Sawdust in Gardens.—I have used a great quantity of this mixed with manure for some years in my garden near Harrow, where be it known the soil is a hard yellow clay. It tends greatly to loosen the soil and make it work easier, and such vegetables as Potatoes, Radishes, &c., are finer and cleaner, and also less affected by disease in wet seasons. I also think that it is the resin in the wood (sawdust) which keeps the long thick earthworms away, as I have also found that they are very scarce where the sawdust is used.—BORONIA MEGASTIGMA.

Caterpillars on Cabbages.—I am informed that covering Cabbages with the fronds of the common Bracken (Pteris aquilina) is a certain and easy way to get rid of caterpillars

My informant made a trial of the remedy himself. and he assures me that in one hour after the Bracken fronds were laid on not a caterpillar was to be seen. Elder leaves are said to be equally efficacious.—E. M.

VEGETABLES.

Easy Way of Growing Horse-radish.—Is the plan of growing this by placing a common round drain-tile with it, and set 2 in. in the earth, filling the tile with fine earth, and planting a set near the top of the tile and 10 in. above the surface, sufficiently well known? It is an admirable plan; digging for the product is saved, and a fine clean stem is the result.—V.

Pruning Tomatoes.—Many find much profit in pinching back the branches of Tomatoes, and it is a good practice when judiciously done. It may, however, according to an American writer, be overdone, and injury be the result. In the first place it is of no use to attempt it after the flowers have fallen. The idea is to force the nourishment into the fruit at the earliest start, for it is at that time that the future fate of the fruit is cast. A few leaves beyond the fruit is an advantage. It is only the growth that is to be checked; and then much damage is done by taking off the leaves as well as the fruit. The Tomato plant needs all the leaves it can get; it is only the branches that are to be checked in their growth. No one who has not tried it can have any idea of how valuable the leaves are to the Tomato plant. One may for experiment take off most of the leaves of a plant, and he will find the flavour insipid and in every way poor. Of course it is the peculiar acidity of the Tomato that gives it so much value to all of us, but the acid from a Tomato that has ripened under an insufficient amount of foliage is disagreeable to most tastes.

Tarragon.—This is so constantly required in a green state, that some special care is necessary to ensure an abundant supply of it. Its roots should, therefore, be potted in October, and introduced into a greenhouse or warm frame heat as required for the winter supply. Out of doors, when the soil is not naturally favourable to its growth, it should be mixed with a few barrow-loads of road scrapings and thoroughly decayed mortar-rubbish, and the beds should be raised a little above the level of the surrounding surface. By cutting portions of the plants for drying at different times we are never short of a supply of it.—J. G.

Town Gardens in Autumn.—Just now, when Oaks are turning brown on hill-sides and Chestnuts are shading off into yellow and russet; when Grapes are purpling on sunny walls in suburban districts all around us; when the Chilian Passion-flower drapes our warm walls with its golden egg-like fruits, and the Virginian and Japanese Creepers are ablaze with crimson and gold, we long to see our town gardens made more interesting by the intelligent use of trees and shrubs which assume varied tints as their leaves decay in autumn. And we have a great wealth of material for this purpose, if we will only use it in the right way. The Sugar Maple (Acer saccharinum) is one of the most beautiful of all autumn trees; so is Pavia flava, the foliage of which, late in the year, is of the richest shades of orange and russet, while the leaves of the common Scotch Laburnum, when they die off in autumn, are the colour of burnished gold. With these might be associated that hardiest and most graceful of all trees, the silvery-barked Birch, of which we have now numerous distinct forms. There are few trees in autumn more effective when planted among other kinds than Birches, and this may be seen any afternoon in Kensington Gardens, where their slender trunks stand out as clear and as bright as shafts of burnished silver, and their graceful branches droop with spray-like elegance. With these we might associate the Liquidambars and the double-blossomed Cherries, the leaves of which die off bright yellow, and by wreathing the stems and branches of our ornamental trees with Virginian Creeper, Grape Vines, Wistaria, or green and variegated Ivies, additional foliage effects may very readily be obtained. Another source of beauty in autumn is found in our ornamental berry or fruit-bearing trees and shrubs, such as the Mountain Ash, large fruiting Hawthorns, the yellow and scarlet-fruited Siberian Crabs, Cotoneaster frigida, C. Simmondsi, Pyracantha japonica, Aucubas, and many others, not forgetting the common Arbutus, bearing its bright orange-red Strawberry-like fruits among glossy leaves and Lily-of-the-Valley-like flowers. How is it that the large fruiting forms of Cratægus are so little grown in town gardens? They are as hardy as the common Hawthorn, and their fruit and foliage are both larger and more distinct than those of that well-known variety. Some of the varieties of Berberis Aquifolium are very beautiful in autumn and throughout the winter; and the American or Ghent Azaleas are nearly as beautiful in the autumn, when their foliage is changing to crimson and gold, as in the spring, when covered with fragrant flowers. Pampas Grass and stately Yuccas, too, must not be overlooked, for both are useful and permanent. Those trees which remain fresh and green when others around them are changing into the "sered yellow leaf" are also useful, both for contrast and for enabling us to retain the freshness of summer as long as possible. To this class belong the Lombardy Poplar, the Ash, the Plane (just now the greenest of all town trees), and the Fig. This last-named tree is one of the best small-growing large-leaved trees for town gardens, its foliage equalling that of the Paulownia or Catalpa, while it is far hardier and makes a more luxuriant growth than either as a standard or trained on walls. The Fig is quite at home in deep rich soils, and it makes a good fence if trained and tied down occasionally, while its leaves remain fresh and green until the frosts cut them off late in autumn. On protected patches of fresh green turf we might have tufts of hardy Cyclamens, autumnal Crocuses, and Colchicums, which would look more beautiful among the herbage, the latter also preventing their delicate flowers from becoming splashed by heavy rains. One of the hardiest, showiest, and best of all autumnal flowers, however, is the Chrysanthemum, and it is to this plant and its innumerable varieties that we must look for bright autumnal floral displays in town gardens. That Chrysanthemums can be grown in town is demonstrated in the Temple Gardens, where we have annually fine displays of these flowers, both under canvas and in the open air.

ROSES.

NOTES ON ROSE CULTURE.

A good yellow loam, inclined to clay, is the best soil for Roses; this, well drained and trenched 2 ft. deep, with a mixture of rotted cow manure, will insure a firm, vigorous growth. To every barrowful of manure may also be added half a bushel of ½-inch bones. This will give a more lasting supply of nourishment to the roots. Planting may be done at any time between the fall of the leaf and the swelling of the buds in spring, though autumn planting is to be preferred to that done in spring. In any case the plants ought to be obtained early. During the dull season they are less liable to injury than at any other time in transit, and they can be laid in the ground in a sheltered place until the situation in which they are to grow is ready for them, and to which they should be transferred without undue exposure.

Pruning is an operation which requires judgment both as to manner and time. Newly-planted Roses should not be pruned until the points of the shoots have burst into leaf. The period of blooming will be somewhat later than with established plants pruned earlier, but good blooms may nevertheless be expected, and, what is more important, the future health of the plant will be promoted. In the case of dwarfs or standards, a cup-like form is the best shape at which to aim, each shoot springing away equally outwards and upwards from a common centre. Therefore, prune back to a bud pointing outwards, whether it be the second, third, fourth, or fifth bud from the base, in the case of an established plant, and afterwards, when the growth is more advanced, disbud all shoots having a tendency to unduly crowd the centre, or cross or interfere with the others. This is a rule which should guide the inexperienced not only in Rose pruning, but also in that of all other kinds of bushes. In the case of newly-planted Roses prune back to three, four, five, or even six buds from the base, bearing in mind what has been said. This applies to the larger section of Hybrid Perpetuals and others commonly known as standard, half-standard, and dwarf Roses.

Planting.—In planting dwarf Roses put the junction of the scion with the stock at least 1 in. below the general surface of the soil. The tendency of the stock to throw up suckers is thereby checked, and the emission of roots from the scion itself is greatly promoted. The sécateur is the best pruning implement for an amateur, though nothing can beat the knife for speed, precision, and cleanness of cut in the hands of a practical operator.

Insects.—Green fly is the greatest pest with which the Rose grower has to contend, and nothing is more effectual in the way of destroying it than Tobacco smoke, where its application is practicable. I have seen a hood made of oiled paper, stretched over a light wicker-work frame, placed over the plant, and by the introduction of the nozzle of the fumigator through a hole at the bottom the application of Tobacco smoke has been most effectually done. Fowler's Insecticide is also a useful composition for destroying green fly. There are likewise some species of caterpillar which in the earlier part of the season are pests to Rose growers. The best remedy for these is to nip them between the finger and thumb. Next to green fly, mildew is the greatest enemy with which the Rose grower has to contend. To cure this, when the sun has lost its power in the afternoon, damp the affected trees with the syringe, then, with the sulphurator or a dredging-box apply flowers of sulphur or sulphur vivum perfectly dry. Another way is to take 1 lb. of sulphur vivum, and put as much water to it as will work it up into a paste; it will be easily dissolved in about 3 gals. of water, and should be applied with a syringe, keeping the mixture well stirred. It is of importance to use sulphur vivum, which is more effectual than common yellow sulphur.

The tendency of modern gardening seems to be to isolate whole families of flowers into groups, and the Rose has doubtless so many charms of its own, that we cannot have too much of it, and a large bed of Roses in full bloom is certainly a grand object; but their beauty is short-lived, and I like best to see them in mixed borders, where, when in bloom, their charms are heightened by contrast with other flowers. Climbing Roses have a pleasing effect when associated with Honeysuckle in a hedge, or on a rustic porch, and in many unexpected situations and combinations which will readily suggest themselves.

B. S.

Carlisle.

Cuttings of Roses Under Cloches.—Cuttings of Roses are easily taken from September till the last week in October. Choose a well sheltered spot, at the foot of a wall if possible, and which can be easily shaded from the direct rays of the sun. Prepare the ground thus: First make it firm and level, then spread over it evenly 6 in. thick of short dry stable manure; over the manure place from 3 in. to 4 in. of sharp sand, the sand to be slightly moist. Prepare the cuttings in lengths of from 2 in. to 6 in. each, according to the strength of the shoots. The best cuttings are those taken off with a heel. The sections are made immediately below an eye. Cut off all the leaves to one-third of their length, the leaf-stalks to be left attached to the cuttings. Now press down the cloche on the sand, so as to leave the mark of its circumference, and within this mark put in the cuttings at about 1 in. apart, and to the depth of from ¾ in. to 1¼ in., according to their diameter. Then lightly syringe and cover over with the cloche. In winter fill up round the cloche with dry leaves, and cover with a mat in frosty weather. In favourable situations these cuttings may be planted out in May at 1 ft. apart. In less favoured districts it is well to leave them alone until June; then take off the cloche and transplant in October. Many of the cuttings put in in September and October should bloom in August next year. I have Roses now in bloom that were put in as cuttings last October under cloches. The cloches in France cost less than a franc each; the nurserymen here charge 2s. 6d. for them.—Ombu.

HYACINTHS IN BEDS AND BORDERS.

THERE is no better situation for the culture of the Hyacinth in the open air than a sheltered bed or southern border, with a sharp slope to the south; in any position it is important that the surface should be convex or pitched, so that no stagnant water in the winter can rest on the surface; thus made, the bed will be dry.

Soil and Manure.—The soil should be light, rich, and sandy. Though many assert that Hyacinths seldom do so well anywhere as under the influence of sea-spray, our experience proves that they grow as well without it; while it is equally certain that salt is a dangerous fertilising agent, unless for such decidedly saline plants as Seakale or Asparagus. If the soil be stiff and clayey, have it removed to a depth of 2 ft., and fill up with a mixture of leaf-mould, peat, and well-rotted manure, and if possible silver sand; in any case the soil should be rich and dry when prepared. In the place of horse manure, old cow manure may be used.

Planting.—The best time for planting is from the beginning of October to the latter part of December; if planted too soon the Hyacinth will be too forward before the hardest of the winter is past; if too late, the bulbs will be partially exhausted before they are put into the earth. By planting in succession through these three months, we have Hyacinths also in succession for several months in the spring. As to the manner of planting, perhaps the worst mode is that of dibbling in the bulbs, as the pressure of the dibble is apt to leave the ground hard, whereas the soil at the base of Hyacinths should be rather loose, so that the roots may start and grow away freely. When this precaution is neglected, we often find that the mass of roots lifts the bulb out of the ground. For planting make a shallow trench with hoe or spade 3 in. deep and of a uniform depth; place the bulbs at the bottom and replace the soil, pressing it firmly at the top. Sometimes 3 in. of soil are taken off the surface of the bed, and the place of the bulbs marked at distances of 6 in., 9 in., or 12 in. apart, 9 in. being a good average; place a small handful of river-sand for each bulb to rest upon, and return the soil. It is a good plan, perhaps, to place stakes to the bulbs before covering them, as if this be not done the bulbs are often staked through when the flower-stems need support; it is also a good practice to cover the beds over with 2 in. or 3 in. of Cocoa-nut fibre refuse, which renders the surface frost-proof.

Protecting the Flowers.—The bulbs need no more attention until the flower-stems are much advanced, unless very severe weather intervenes, when they should have a mat or some oiled calico thrown over them. Waterproof calico is also useful in very wet weather, excess of water, especially when iced by February frosts and March winds, being by no means good for Hyacinths, which will thrive all the better for being sheltered by a waterproof covering. Hyacinths in the open air hardly ever require artificial watering, the natural moisture of the soil and the strength of the manure mixed with it being sufficient to carry them through. Tie up the flower-stems as soon as they rise above the foliage, and have protection at hand, as sleety frosts may destroy the flower-stems during severe weather.

Treatment After Blooming.—After blooming, the bulbs, if expected to flower again, must be left undisturbed until the leaves wither or die of their own accord. The bulbs should then be taken up and dried in a stack for a week or two, and finally placed in the sun for a few hours, and the dry leaves pulled off. Offsets should be removed likewise from the bulbs, and stored in dry sand or earth till planting time comes again. Hyacinths especially deteriorate if left in the soil, and it may be laid down as a maxim that the more liberally the bulbs are treated after flowering, the more useful the bulbs will be for another season. Offsets, if carefully cultivated in a rich piece of light soil for two or three years will then produce a good many flowering bulbs, but, as a rule, imported bulbs are best; however carefully they may be cultivated in England, they seldom or never flower again so well as the first season, and so generally is this admitted that many throw the old bulbs away annually and procure new supplies. A good plan is to plant in the mixed border, when they often make a good show amongst herbaceous plants, or skirting the fronts of shrubberies. Selections for bedding in distinct colours of red, yellow, blue, white, or mixed, are to be bought at a cheap rate from any respectable seedsman or nurseryman, and a comparatively grand display may be made on a large scale with little outlay.

Godetias.—These are among the most beautiful of hardy annuals for spring flowering. They require to be sown now in order to secure strong plants before severe weather sets in, and if well thinned out and the soil be rich they will give a grand display of blossom during

Godetia rubicunda.

May and June, and if seed be sown again in April a succession of bloom may be easily kept up. As pot plants for window culture these Godetias are excellent. They require to be grown out-of-doors or in a cold frame till they show bloom, when they may be placed in a sunny window, where if kept well watered they will bloom for many weeks. The flowers should be clipped off as soon as they fade in order to

Godetia Whitneyi.

prolong the season of blooming. Among the best kinds are G. Whitneyi, G. Lady Albemarle, G. Lindleyana, G. The Bride, and G. rubicunda.

LILY CULTURE.

MANY of the common Lilies, such as the old White, the Tiger, the Orange, &c., will thrive in almost dry soil, and are not fastidious as regards situation, although they prefer a certain amount of shade and shelter. Even these free-growing kinds, however, give better results when some provision is made to meet their peculiar requirements. If the natural staple is very heavy and retentive, lighten it by the admixture of river-sand, leaf-mould, or anything of a like nature; if, on the contrary, light and parching, add thereto some sound loam, or good, free, rich soil of any kind, and mulch around them with short Grass or something of a like nature during the summer months. If the culture of such kinds as speciosum, auratum, Krameri, japonicum, or any of the more rare and beautiful kinds is to be attempted, then a thorough preparation of the soil must be made. There are but few kinds of Lilies that might not be grown with success in almost any part of England were their special likings more carefully considered. L. auratum and speciosum will thrive for a season or two almost anywhere, and will then, in nine cases out of ten, completely disappear. Why is this? Why, is often asked, do they flourish for a time and then die away? Simply because, being planted in unsuitable soil and in an ill-drained situation, the roots and bulbs perish through excess of humidity. Lilies do not like full exposure to the hot sun, and they never appear so much at home as when pushing up through dwarf evergreen or deciduous shrubs, where the greater portion of the stem and the roots are protected against its scorching rays. They also dislike rough or cutting winds, and rejoice in a cool, moist atmosphere during the summer months. Beds or borders occupied by Rhododendrons, Azaleas, &c., where the soil is pure peat, is found to be just the place where the Japanese species flourish best, and where they do not appear to wear out. Supposing, however, that such natural advantages do not exist, then we must choose a position in the shadiest and most sheltered part of the garden. Excavate the natural soil to a depth of 18 in., and should the situation lay low and damp, ensure good drainage by placing about 4 in. of brick rubble, or bushes, or anything likely to serve the purpose, at the bottom, filling up with good peat. This may appear to many to be too expensive, but almost everyone who owns a garden might carry out these details on a small scale, and the grower will certainly find that a dozen bulbs well planted will give greater pleasure than hundreds could do if the proper means are not taken to ensure their well-being.

Plant the bulbs some 6 in. deep in the soil, and allow them to remain undisturbed, and they will yearly increase in luxuriance and effectiveness. Some recommend a mixture of loam and peat for planting them in. This is undoubtedly the best compost for pot culture, but our winters being generally moist, it is imperative that the soil for outdoor culture should be of a free and porous nature, and that every facility should be afforded for surplus moisture draining away. I therefore counsel the exclusive employment of peat for the rarer kinds, and if it should be of a somewhat sandy nature so much the better; in any case, the addition of some coarse silver sand cannot but prove beneficial. Having planted the bulbs and marked the places, the next step is to plant some low-growing evergreens, which may carpet the soil, and thus preserve it cool and moist. Such things as Skimmia japonica and oblata, Pernettyas, Gaultheria procumbens, Daphne Cneorum, Menziesia polyfolia, Heaths of kinds, and Rhododendrons of the Alpine section, such as chamæcistus, hirsutum, and præcox, are all excellent for the purpose, and are exceedingly ornamental in themselves.

A portion of the garden thus arranged cannot fail to be a source of constant pleasure, as if planted with a variety of Lilies, a succession of bloom will be maintained throughout the summer months. For pot culture a good heap of compost should be prepared, consisting of loam, peat, and leaf-mould in equal proportions. There are some species which demand pure peat, but the beginner should limit himself to the more well-known kinds, of which the culture may be said to be well understood, such as auratum, speciosum and varieties, longiflorum and varieties, canadense, superbum, and Thunbergianum atro-sanguineum. Procure the bulbs in the autumn, and pot them either singly in 6-in. or three together in 8-in. pots. Give good drainage, water moderately, and plunge the pots quite to the rims in a cold frame, there to remain until they commence to grow, when air should be freely admitted. When all danger of frost is past, place them in a sheltered and cool position in the open air, watering freely when in full growth, and syringing the foliage in hot weather. When the blooms begin to expand remove them to an airy and cool greenhouse.

Byfleet. J. C.

A very Free-flowering Everlasting.—When ordering my flower seeds in spring I got among others a penny packet of Xeranthemum, which sowed about a square yard. It is now a dense mass about 2 ft. high, with hundreds of flower-buds on it. I have already gathered a great many, and many new ones are opening every day. The flowers are purple (dark and light) and yellow, double, semi-double, and single. I have also gathered a splendid crop of Rhodanthe maculata, and have as good a one of Helichrysum—some of it gathered, and most of

it nearly ready. All were sown in the open border.—PED.

Shrubby Gromwell (Lithospermum fruticosum).—This singularly beautiful little plant is a real gem on outside rockeries in spring and early summer, the intense blue of its flowers being quite equal to that of any of our alpine Gentians. It is a compact-growing, old-fashioned little plant, and the freedom with which it may be increased places it within the reach of everybody. It may be propagated either by means of division or by cuttings inserted in a warm border under a hand-light in summer, and shaded for a few days with a piece of mat or other material. The following is, however, the best and most certain mode of increasing it: A few of the plants should be lifted and potted early in autumn, so that they may have time to get well established before the winter, and have the protection of a cold frame after the middle of November. The sashes should, however, always either be drawn completely off, or tilted up on the side opposite to the direction from which the wind blows, unless the weather is too severe to permit of such being done. Towards the end of February these plants should be looked over, cleaned, top-dressed, and introduced into the propagating pit. This sudden change induces them to make young growths rapidly, which may be taken off and inserted as ordinary cuttings. They strike root readily, when they should be potted singly into 2½-in. pots and again plunged in bottom-heat, where they soon establish themselves, and after they make another 2 in. of growth, their points should be cut off for a similar purpose. A week or so after being deprived of their tops they should be lifted out of the plunging material, and, after being levelled, set for a day or two on the top of it; then they should be placed on a side shelf near the light. Unless it is necessary to obtain a large stock of this plant, it is not advisable to take more than one cutting off each cutting; but the old plants, from three weeks after they are brought in until a sufficient quantity of young plants has been obtained, will, if properly treated, continue to yield cuttings abundantly. No flowers should be permitted to develop themselves during the season of propagation, as their presence only hinders that work, as well as exhausts the plants. Thus treated, compact little plants may be had in about two months, and before planting them out they should be gradually but thoroughly hardened off; indeed, I do not think they can ever be safely trusted outside before May. Six or eight good plants started in this manner in February should, by the end of April, furnish at least three hundred good young plants.—W. F.

Cineraria maritima.—This, though an old inhabitant of our gardens, is not so often seen as it ought to be. The whole plant is of the purest silvery white, with the exception of the upper surfaces of the leaves, which are greenish, although in a degree covered with wool, and perhaps in the whole vegetable kingdom no leaf is more beautifully cut. It is of a shrubby habit and may be freely used in the outsides of choice masses of shrubs; those, too, who edge their masses of shrubs with some particular plant will find this a very striking plant, as it may be kept to any height that may be required, and a mass of this plant edged with some dark green dwarf shrub would be a sight, and, if properly attended to, would equal, if not excel, any of the Centaureas. It is a fine plant for toning down masses of blue or purple; a few plants might also be introduced with advantage into the conservatory. In short, from its peculiar whiteness, it is attractive in any place, and is a most charming window plant.—T. W. O.

Wintering Pelargoniums in Cellars.—Take up the plants, shake off the earth from the roots, trim off the longer ones, and head back the tops freely; then place as many of these trimmed plants in a box or small tub as can be crowded in without much pressure in the same position as they would stand when planted in pots. Then pour in among the roots as much dry clean sand as will compactly fill all the interstices, occasionally shaking it to settle the sand till the tub is nearly full; place them in a cellar where they can receive as much light as possible, and keep the sand slightly moist by occasional watering. In very damp cellars no watering will be required. The roughest boxes will do. The plants will require a little occasional attention during winter, to see if all is right, and that they are not suffering from any cause, which a little experience on the part of the attendant will enable him to ascertain.

Gilias.—These are hardy annuals growing from 1 ft. to 2 ft. high, and bearing for a long time in succession abundance of blue, white, lavender, or rose-coloured blossoms. The seed

Gilia laciniata.

may be sown in autumn for spring blooming, and in April for summer and autumn display. They should be grown in masses to be effective, and the soil should be light and well enriched

Gilia tricolor.

with decomposed horse or cow manure. The flowers are useful for small bouquets or vases, and last for a long time in water. The best kinds are G. achilleæfolia major (blue), G. a.

Gilia capitata.

alba (white), G. capitata (lavender), G. tricolor (white and purple), G. rosea splendens (rose), and G. nivalis (white). A mixed packet of seed will also give a fine variety of colours.

Wintering Half-hardy Bedding Plants.—Most kinds of half-hardy bedding plants are readily struck from cuttings inserted about this time (September), but they succeed much better if struck earlier, say the first week in August. All sections of the Pelargonium family, including the variegated and tricolor kinds, will root readily in pots or boxes filled with light, sandy soil and placed in the open air, or they may be inserted in the open border and taken up and potted about the beginning of October. In the absence of a greenhouse or glass structure they may be wintered in a light room as near the windows as possible, setting them back during severe frosty weather, and giving very little water during the dull days of winter. Frost should, of course, be excluded by fire-heat or otherwise, although 3° or 4° will not injure them. Verbenas, Calceolarias, &c., may be inserted in the form of cuttings in a mixture of sand and finely-sifted leaf-mould using well-drained pots some 6 in. in diameter, and these should be placed in a frame, which should be kept quite close until the cuttings are fairly rooted, when air may be freely admitted whenever the weather is fine. Such plants may generally be wintered in an ordinary garden frame, but care must be taken to cover the frame with mats or litter during very severe frosty weather, when water should be given very sparingly, and only when the soil is found to be dry. Those not in possession of glass structures should trust more to annual plants for furnishing their flower beds than they usually do. Annuals may generally be sown where they are intended to flower about the end of April or early in May, or, what is better, they may be sown in pans, pots, or boxes about the beginning of April, and placed in a frame on a slight bottom-heat, pricking the young plants out when large enough into other pots or pans, and gradually inuring them to the open air, finally planting them in their beds soon after the middle of May. Many annuals make excellent bedding plants. Nothing can surpass in beauty some of the varieties of Phlox Drummondi, Dianthus Heddewigi and its varieties, some of the dwarf Marigolds, Asters, Stocks, &c., all of which will remain in great beauty throughout the greater part of the season.—P.

THE SHRUBBERY.

A Fine Hedge.—The prettiest Quick-set hedge I ever saw was in Ireland, forming a boundary fence between some pleasure grounds and the public road. It was straight and impervious as a wall, and as thick and close at the bottom as at the top. When I saw it in winter it had quite a brilliant effect; being made of Beech or Hornbeam, with Hollies at intervals of 12 ft. or more, it was much less monotonous and warmer to the eye than Evergreens alone would have been, the bright warm brown of the Beech contrasting finely with the shining green of the Holly. This fine hedge must have been very old, being about 7 ft. high, and it extended for a considerable distance, doing much credit to the Irish workmen, who had inarched the young branches well from the beginning.—H.

Sowing Broom Seed.—Most kinds of Broom, but more especially those of the largest growth, known as Portugal Broom, flower early in May, and ripen their seeds by September; and the sooner these seeds are committed to the ground after they have been gathered, the better plants will they make the following summer. They may, however, be sown with Gorse in the spring, or transplanted among it as seedlings. It is difficult to say in what proportion these seeds should be sown together for ornamental purposes, but we would recommend a trial of 1 lb. of Broom to 3 lb. of Gorse.—A. J. B.

Garrya elliptica is a dark-foliaged, handsome evergreen, of free, quick growth after the first two years, or when well established. It should be planted in good well-prepared soil, and will then speedily cover an unsightly wall. Its long catkin-like inflorescence is at this season both singular and interesting.

Eucalyptus globulus as a Disinfectant.—It seems to me a fact worthy of recording that, having planted about a fortnight ago a small plant of the above, 4 ft. high, close to a cesspool, so that the roots might gain some nourishment from it, and sheltered by some Fir trees, all offensive smell, even in this hot weather, has disappeared. I mean to give this plant a trial as to whether it will stand the winter here (the east coast of Scotland).—H. K.

Garden Ornaments.—I made a handy little table for my garden in the following manner: I obtained from a cheesemonger the lid of a cheese box, round the edge of which I nailed pieces of the hoops (purchased at the cooper) 3 in. long, pointed at the ends. For the stand or pedestal I used broom-handles nd Dahlia sticks, and with the exception of

the rustic edging I painted it green, and then varnished the whole. The table is very firm, and will stand any amount of knocking about without injury. A very pretty and useful little box (rustic) for in or out-of-doors I made as follows: For the foundation I got an empty blacking box 13 in. long, 5 in. deep, and 7 in. wide; I then cut pieces of the old hoop (previously alluded to) into lengths of 7 in. and painted them top and bottom; I then fixed them on with French nails clenched inside. I made plenty of holes in the bottom for drainage. The stand, in form of a tripod, I made of thick pea-sticks with two pieces running the whole length of the box, so that the pressure on the stand should be equal. The stand itself I ornamented with pieces of cork; I then varnished the whole once or twice, and very well it looks. Last winter I had it full of Ferns in the sitting-room, and this summer I have in it Lobelias and a fine crimson Geranium.—A. H. B.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

September 27.—Potting Double White Feverfew from borders; also a quantity of Selaginella in 3-in. pots for room decoration; potting up Pinks on account of wireworm. Putting first batch of Roman Hyacinths and Roman Narcissus to force in very slight heat; putting Myrtles and Orange trees into conservatory; also Heliotropes in pits for winter flowering; taking up and potting Hollyhocks, and placing them in a cold pit; pricking out Cauliflowers, also Red and Green Cabbage, and more Lettuce; nailing in Peach trees a little; syringing Peach trees with soap-suds and Tobacco-water for green-fly; also Azaleas for thrips, using 4 oz. of soft soap to a can of water; cutting Marjoram, tying it in bundles and putting them in a Vinery to dry; roping some Onions to put in loft for keeping; getting up Carrots and Beet-root.

Sept. 28.—Potting Japan Lilies; also Solomon's Seal for forcing; getting scented leaved Pelargoniums into pits; putting in cuttings of Viola cornuta in cold frame; pricking out Cauliflowers under the protection of a south wall; putting cases over French Beans in the open border; gathering Winter Nélis, Winter Bon Chrétien, Gansel's Bergamot, Brown Beurré, and Thompson's Pears.

Sept. 29.—Potting Pelargoniums, consisting of old plants of Mrs. Pollock, Goldfinch, Cloth of Gold, and Golden Chain, from flower beds; putting Primulas into lean-to pits, keeping them at from 55° to 60° at night; putting Eucharis into Cucumber pit for winter flowers; gathering Marie Louise, Napoleon, Beurré Superfin, Jersey Gratioli, Zephirin Grégoire, Beurré Diel, Crassane, Colmar, Beurré d'Aremberg, and Louise Bonne of Jersey Pears; also Golden Pippin and Broadling Apples; getting up all root crops; getting Onions under cover; making a frame ready for Calceolaria cuttings; spreading manure on land for spring Cabbages; earthing up winter Cucumber plants.

Sept. 30.—Sowing Cucumbers for planting in January; taking up some seedling Lobelias and putting them in well-drained boxes; getting all Mignonette, Salvias, and Pelargoniums under cover; taking up Cauliflowers and putting them into a cool place to keep; planting Maréchal Niel Roses in greenhouse, also a large quarter of Cabbage out-of-doors for spring use; gathered all fruit except Easter Beurré Pears and Nonpareil Apples; putting some fresh soil to Peach trees; putting lights on Peach-house and Vinery, not shutting them up, however, except in bad weather; keeping Cucumbers at night about 70°, and Mushroom-shed about 55°.

October 1.—Potting Magnolias, also late Tulips and Anemones, and plunging them; getting Callas under cover, also Carnations into pits for winter flowering; housing all greenhouse plants which had been placed out-of-doors for a time; putting Achimenes beside pipes in stove; re-arranging Orchid-houses; planting last year's forced bulbs to bloom in spring; pricking off four lights of Cauliflower plants in frames; gathering Peas sown July 10.

Oct. 2.—Cleaning June-struck Heliotropes and putting them in greenhouse; laying in a large quantity of Cerastium; clearing scale off Peach trees; putting rough frame together for the protection of half-hardy plants; beginning to make turf pit; cleaning autumn-sown Onions; pulling up and burning all vegetables in garden as they get useless.

Glasshouses.

Double Primulas.—These are not nearly so much grown as the single varieties, which, to some extent, may be accounted for by their much less showy character and liability to damp off unless somewhat differently treated from the single kinds, but where the flowers are needed for cutting, the advantages are very much in favour of the double ones, as they do not drop nearly so quick. Where a little more warmth can be given them all through the winter, little difficulty will be found with them. Nothing answers so well as a small pit or house where they can be kept to themselves, or in company with Cyclamens that are wanted to flower early, kept near the light with a moderate admission of air on fine days and a night temperature of from 45° to 50°; damp will not give much trouble, and the plants will keep on thriving, making double the progress possible in ordinary greenhouse warmth. Such persistent flowerers are they that the smallest examples keep on blooming, but where the plants are not wanted until later on, the flowers should be picked out as soon as formed, which will much accelerate their attaining size. Weak manure water will be found of great use to them.

Lilies.—As these die down whatever potting or renewal of the surface soil is required will be much better carried out now than later on, as when they are put in out-of-the-way places where many are compelled to accommodate them, the re-potting and consequent disturbance of the roots get deferred until fibres are being made, when much injury is done. All the kinds that form young bulbs on the lower part of the flower-stem that is under the soil, but above the principal bulbs, should be gone over now with a view to remove these, whether the main roots require potting or not, as if the young bulbs are allowed to remain, the pots in a single season get so crowded that the soil is not capable of sustaining the flowering bulbs in the way they require. Strong loam with a little admixture of leaf-mould, rotten manure, and sand will grow all the strong-growing kinds stouter, and so to enable them to produce a greater number of flowers than peat, and also to induce them to increase faster. The weaker-rooting, less free-growing kinds peat seems to suit best. Attention as to re-potting soon after the tops have decayed is particularly advisable in the case of bulbs that have only this summer made their first growth after being imported. These, especially L. auratum, frequently make growth and sometimes even produce a flower or two, at the same time forming little or no roots. Bulbs of this description very seldom live beyond the first season, and they are usually such as have begun to push roots after arriving in this country previous to being potted, and the young tender fibres being injured before or at the time of potting died right back, when through inability in the bulbs to push more roots there was nothing to support them, the shoot growth they made generally being the exhaustive and last efforts the plants were able to make. All who purchase imported Lilies, and this species in particular, should get some, and as soon as the first importations arrive pot them at once, as these generally give the most satisfactory results. Another matter we would impress upon young cultivators is the absolute necessity for using small pots; even in the case of established plants, that is, those which have been grown in the country some time, it frequently happens that they are over-potted.

Scented-leaved Pelargoniums.—Many of the winter-flowering plants, forced or otherwise and required for cutting, are weak in perfume, and a handsome-looking bouquet is all but scentless. This is easily remedied where a sufficient quantity of the sweet-leaved Pelargoniums are grown to meet the requirements of the very different tastes in this matter, from the rose-perfumed P. graveolens and the varieties of P. capitatum to the ordinary citron and lemon-scented kinds; these, if well managed, so as to get stout healthy growth in them with ample clean foliage that has never been allowed to get infested with aphides, and if kept under glass early in the season and then turned out in the open air during the latter part of summer, will get their leaves hardened enough to keep fresh in a cut state for some days, but though so easily grown they need sufficient attention to have them in the best condition.

Callas.—Where these are grown on the system of division in the spring, and planting in the open ground with a view to their being potted up in the autumn, they should at once be lifted and placed in the pots in which they are to bloom; these need not be larger than will just admit their roots and a moderate amount of soil without too much cramping, as when they have flowered through the winter and spring they will again be turned out-of-doors as before. They are water-loving plants, and will bear the soil well moistening immediately they are potted; grown in this way their leaves are very stout, and the petioles consequently are much less likely to be broken, and their handsome foliage, when perfect, adds so much to their appearance when in bloom, that it is worth a little extra labour to keep it whole. A single stick to each pot, so as to just support the leaves, will be found sufficient to ensure this. The plants when potted may be placed close in any house or pit available, where they can remain till the roots have got established, and after a time be placed in the greenhouse to bring them into flower as required.

Flower Garden.

Bedding Plants.—In cases in which it may have been difficult, or even impossible, to obtain at an earlier period a sufficiency of cuttings of any variety of bedding plants, this deficiency may now be made good, and the propagation of all such plants should be brought to a close as speedily as possible. Even bedding Calceolarias, which are always found to succeed best when the cuttings are inserted somewhat late, may soon, or even now, be commenced with. These plants are most successfully propagated in cold pits or frames, either in pots or otherwise. If pots are used they may be some 8 in. in diameter, and should be well drained, and the soil may be composed of one-half leaf-mould finely sifted, while the other half may be sharp river or pit sand, which will answer the purpose quite as well as the best silver sand. They may be wintered in the pits or frames in which they have been struck, and will of course require the protection of mats, &c., when the weather is severe. Treated thus, they will generally be found by the end of March to be in good order for transplanting into temporary pits or trenches, where they can have the necessary protection which they may require during very severe weather; from such quarters they may be transferred to the flower beds in May.

Carnations and Picotees.—Arrangements must now be made to remove all layers and pot them either singly in 3-in. pots or a pair of plants in pots of a larger size. The compost that seems to answer best is four parts good sweet maiden loam, one part leaf-mould, and one part sharp sand. When the plants are potted place them at once in a cold frame, water with a fine-rosed watering-pot, and then place the lights over them, keeping them rather close and shaded for a week until they have formed fresh roots.

Dahlias.—The blooms should still be thinned out, and the stems should be tied to the sticks as they advance in growth, as the plants are very heavy and easily injured by winds. Shade the flowers, especially the light-coloured and pink ones, and see that the ground is kept stirred with the hoe.

Gladioli.—The ground between the rows should be well stirred with a hoe, or if it is wet, the surface may be lightly forked over, in order that there may be a good opportunity for the bulbs to ripen. It is not likely that they can ripen well when the soil is trodden hard between the rows, the surface quite wet, and in places covered with a growth of green Confervæ.

Pinks.—If pipings of these have done well, now is the right time to prepare a bed in which to plant them. When a Pink is lifted out of the ground it does not seem as if the roots run far from the main stem, but they do. They run well into the ground, and it is best to trench the beds 2 ft. deep, working into them some good rotted stable manure, some of it at the bottom of the trench, and some of it 6 in. under the surface.

Tulips.—If the ground intended for these has been cleared from other plants the beds may be prepared at once. Growers who make a speciality of them take infinite pains to prepare the beds well, excavating the soil to a considerable depth, and then filling the space with good loam mixed with rotten manure. Those who cannot afford this would do well to trench the ground to a considerable depth and manure it well; then at planting time they should place about 6 in. of rotten, chopped-up turfy loam on the surface, and in that plant the bulbs with a little sand under and over them.

Fruit.

Apples and Pears.—Most kinds of these will soon be ready to gather, and the moment they seem ripe enough let it be done, as we may soon expect high winds, and ungathered ripe fruit will be either destroyed or fit for use only as windfalls. Pears, especially late kinds, if gathered too soon are rendered worthless, as they never ripen either to be fit for cooking or

dessert, but shrivel and become hard and dry. A good criterion by which to decide whether a Pear is fit to gather or not is to gently raise the fruit, and if it parts readily from the tree, it is fit to gather. Another plan is to cut open a fruit, and if the pips be brown, the crop may be gathered. The same rule applies to Apples, though none but the very late kinds suffer from early gathering to the same extent as Pears. After housing the fruit the room will require to be freely ventilated for a week or two until the fruit is dry and inured to the temperature of the house; sudden fluctuations more than anything else induce damp and decay. Fruit showing the slightest signs of decay should be instantly removed, for if left an atmosphere is thereby engendered inimical to the good keeping of the remainder. If space permit let the fruit be placed on the shelves in single layers; any extra labour involved in so placing it will be more than repaid by the despatch with which it can be examined in order to detect bad fruit.

Peaches and Nectarines, and also late Plums, should be gathered a day or two before they are fully ripe, and placed in the fruit room. Fruit so gathered is much more highly flavoured than when used direct from the trees. As soon as the latter are cleared of fruit wash well any that are affected with red spider or mildew. Plenty of clear water applied with force for the former, and soapsuds for the latter, are two simple and effectual remedies.

Raspberries may now have all their old fruiting canes removed and the new ones finally thinned out in order that those for next season's fruiting may derive the fullest benefit from what sunshine we may yet be favoured with. After thinning let the ground about them be "pointed" (not dug deeply), then mulch thickly with well-decayed stable manure. The fruit tree planting season is at hand, and preparation should therefore be made for new plantations, and for lifting, root-pruning, and renovating any trees requiring such operations.

Vegetables.

The general crop of Celery for winter use should now be examined; all suckers should be removed, as well as a few of the smallest outside leaves, and then the foliage should be tied together loosely; after that a thorough soaking with manure water should be given, and then about 6 in. of soil from the ridges should be drawn to the plants, an operation which not only keeps the leaves from being broken down by wind, but tends to promote growth, and where too much soil is not applied, it has no bad effects in preventing rain from reaching the roots. The Celery maggot is now in some places active; it may easily be detected by the brown patches which it produces on the leaves. The only remedy is crushing it between the thumb and fingers. The Cabbage caterpillar is also now attacking late Cauliflowers. They get into their hearts as soon as they begin to form, and for these no dressing can be applied that would not spoil the heads; consequently hand-picking must be resorted to, otherwise the larvæ will continue their work of destruction until the occurrence of sharp frost.

House and Window Gardening.

Spleenwort as a Room Plant.—The common Spleenwort, sometimes called English Maiden-hair, is one of the prettiest Ferns that can be grown for indoor decoration. In its wild state it is a favourite and pretty Fern, but its wiry stalk is so brittle, that even in a sheltered Devonshire lane the fronds are seldom perfect, and generally disfigured by what look like a number of black pins stuck among them. When grown under a bell-glass it is a different plant. I have seen the fronds 12 in. in length with perfect rows of vivid green pinnæ arrayed on the shining black stems, and making beautiful luxuriant plants grown in a bedroom with a northern aspect, and where a fire is never lighted. Though the Adiantum trichomanes is known as the common Spleenwort, it is not really very abundant, and I would beg of those who may wish to carry some of it away from its native haunts not to be spoilers, but to take tenderly only what can be spared and what they can use. But this much I would say for the very commonest Fern in England.—H.

Dwarf Hyacinths in Sand.—I get dwarf Hyacinths from Holland in five different colours; they must be of the sort which "feather"—those growing with an upright stem are not fitted for the purpose. I take five deep dishes—say pie dishes or China dishes—putting about ½ in. of fine sand at the bottom of the dish, one of the bulbs in the centre, and seven round it; I cover the whole with sand, merely up to the crown, damp it well, and put it in the dark, in the same manner as other bulbs in pots. They must be looked at occasionally, and must be kept damp. When they are found to be about 2 in. above the sand they should be brought into the light; and when about 1 in. higher the sand should be taken off the top, and be replaced by fresh, short Moss. They are then in order for blooming, and are an exceedingly pretty ornament for a table. It is essential that the eight bulbs in each dish should be of the same colour; I generally have them of white, pink, dark blue, red, and yellow. I am aware that this is by no means a new way of growing dwarf Hyacinths, but it is one which I have never seen adopted in England. It is very effective if they be carefully treated.—W. B.

Duration of Passion-flowers in a Cut State.—I cut on July the 29th last from our greenhouse two long branches of the Blue Passion-flower plant. The leaves of both remained quite fresh and green for more than a month in water, and now (September 4) more than half of one graceful spray is fresh and green. They had plenty of water and were long branches. I think this useful to know. Can any reader give similar instances?—C. D. E.

GLASSHOUSES & FRAMES.

Hoya bella.—The Hoya has been mentioned lately in GARDENING, and it may interest some of your readers to learn that there is now a Hoya bella in full beauty in a cool greenhouse in the south of Devon. It was raised nine or ten years ago from a small cutting in silver sand under a wineglass. Four years ago, being unable to attend to it, I sent it to a friend who had all the appliances for growing stove plants. It was then a sturdy little bush, and had flowered beautifully two or three years. Last April it was returned to me, the foliage showing the effects of artificial heat. There were many flower-buds formed on it, but the change seems to have checked it, and the buds for the most part withered and dropped off. As the season advanced it began to shoot vigorously, and covered itself with fresh green foliage crowded with flowers. It is now a bush measuring about 2 ft. 6 in. every way, and I think it will be under rather than over the mark to set down the number of clusters at 300. My friend's gardener trained the branches to hang down, and must have managed the plant very well; still, I think it would have prospered in my cold greenhouse (a lean-to at the back of the drawing-room chimney), and there would probably, too, have been the convenience of less rapid growth, for it now takes more room than I can well afford it.—M. M.

Gladioli for Late Flowering.—Bulbs of these that were kept long out of the ground in spring, with a view of their being potted for flowering in the greenhouse in autumn, should this month be taken up and potted. If the ground be at all dry give them a good watering previous to their being got up, otherwise the roots are certain to get broken. Do not use larger pots than will hold the roots without undue pressure, say 6 in. or 7 in. in diameter. Any ordinary garden soil will do for them. The usual advice, not to give water for some days after potting, must not be adhered to in the case of these and anything of a similar character, otherwise the foliage would be certain to suffer. As soon as they are potted give as much water as will moisten the soil, and put to each a neat stake to support it; place them in a cold frame or Vinery, or wherever room can be found where there is no fire-heat. Thus treated, they will come into flower in succession for some weeks, and are very useful for greenhouse or room decoration. Expensive sorts are unnecessary, but such should be selected as naturally flower late.

Propagating India-rubber Plants.—I find cuttings of the India-rubber plant (Ficus elastica) root best in spring. Any light, sandy soil will answer the purpose, and a bottom-heat of from 70° to 80° greatly facilitates the process of rooting. Side branches or tops, 6 in. or 8 in. long, root equally well. Some cut the branches to single eyes, leaving a leaf to each, and these root readily on a gentle bottom-heat in a moist atmosphere.—H. B.

Greenhouse and Conservatory Climbers.—Such of these as flower in the summer and admit of their being cut in at this season possess an advantage deserving of consideration in making a selection of plants for the purpose, for during the bright summer months where not allowed to cover the roof too closely, they, to some extent, supply the place of ordinary shading to keep the general occupants of the house, when in flower, from being too much exposed to the sun. Those that thus bloom during the summer months, and will bear cutting in more or less yearly, should now have their shoots shortened, an operation necessary to admit as much light as possible to the other occupants of the house through the winter. Amongst them will be found the summer-flowering Bignonias, Hoveas, Hardenbergias, Kennedyas, Passifloras, Tacsonias, Plumbago capensis, &c. The beautiful sweet-scented Mandevilla suaveolens, although a plant very subject to red spider, is well worthy of all the attention necessary to keep it clear from this pest, for when it has attained a considerable size it will continue for many weeks through the autumn, producing a succession of its white trumpet-shaped flowers. Swainsonas, Habrothamnus elegans, Jasminums, Clianthus puniceus, Chorozemas, and Acacias are also all good. It is not desirable at this season to cut more away than is absolutely necessary, as whatever branches are removed will tend to lessen the quantity of flower they are likely to produce in the spring, but where these have grown too large for the situation they occupy either trained on pillars or on the roof they should be judiciously thinned out; so treated they are much better both in appearance and reality than where an attempt is made to tie them in so close as to make them look stiff and formal. All plants of the above character should, where they require it, now have a thorough clearing from insects, as from their position overhanging other plants they are certain to communicate whatever they may be affected with to the plants standing beneath them. Should any happen to be infested with that worst of all pests, white scale, the most effectual method of dealing with it is to cut them in so far as to admit of their being taken down from the wires that support them, and have the whole of their heads immersed in liquid insecticide sufficiently strong to kill the insect; the application of any liquid by sponge or brush, however effectual it may be for the destruction of this species of scale, can scarcely ever be used so as to completely eradicate it, from the difficulty of so getting the dressing to reach every part infected, whereas if dipped overhead the entire surface of the plant is reached. This insect is so hard to kill, that even when the plants are close cut in, so as to leave nothing but the hard wood, it often takes several applications before all are destroyed. Now when growth has ceased, by beginning early and repeating the dressing through the winter, affected plants may be cleaned.—B. A.

Cut Flowers and Packing them.—Having had much experience of the above, and seeing advice asked in GARDENING ILLUSTRATED respecting it, I beg to offer a few remarks. Of Roses, some kinds are useless for vases; having over 100 sorts, I can speak to the following being always good, by which I mean lasting from two to ten days, according to texture: Safrano, Madame Willermoz, Niphetos, Céline Forestier, Gloire de Dijon (gathered half or full-blown buds of this I find will not open in water), Fisher Holmes, Marshal Vaillant, Lord Raglan, John Hopper, Paul Neron, Charles Lefebvre, François Fontaine, Maurice Bernardin, Souvenir de la Reine d'Angleterre, and Gloire de Sautenay. All these will last well, and some improve in water, but care must be taken that no portion of the old wood is cut. As to the implement, I find that a matter of perfect indifference; I use my nails as often as scissors or knives; Selby's flower-gatherer is undoubtedly the most convenient article. Having about seven-

teen flower-vases about my rooms, I cannot, of course, be at the trouble of cutting the stems daily. My plan is to fill up all that want water every day, to pick out all decayed flowers, and in winter cut the stalks about once a week. Geraniums, Mignonette, and Phlox Drummondi, gathered in November, have often lasted into the new year treated thus. I do not have gas, and never allow the vases to remain near the lamp in winter. Now as to packing: I gather the flowers half-an-hour beforehand and put them immediately into a basin of water; if there are any very choice ones, I get some wool or morsels of sponge soaked in water, and secure round the bottom of the stems with a scrap of oiled silk or waterproof cloth. The despised draper's boxes are the only ones I ever use, except for cuttings, as the tin cases are so heavy; but the simple precaution of writing the address on a luggage label, so fastened to the box that the stamps can be put in the P.O. marker without the box, suffices to prevent all smashing.—J. B. T.

Habrothamnus elegans argenteus.—This is one of the most beautifully variegated of greenhouse plants, and one that may be grown for covering a wall or pillar. In the latter situation it is especially ornamental; the leaves, as will be seen by the annexed illustration, are about 6 in. in length by 1 in. in breadth; nearly the whole of the surface is soft creamy-white, beautifully tinged with rose, and relieved by irregular blotches of pale green; the flowers are produced in dense racemes, tubular, about 1 in. in length, and deep reddish-purple in colour, affording a striking contrast to the delicate white of the foliage. It is not so rampant a grower as the well-known H. elegans, and consequently it may be used for covering small columns or pillars, where the green-leaved kind would not be suitable. It has been grown in Mr. Williams' nursery at Holloway for several years past, so that it is now probably easily obtained. Any good, rich, sandy soil will suit these plants, and the oftener the flowers are cut off the longer will the plants continue to make new growth and bloom.

ANSWERS TO QUERIES.

2890.—**Plants for Shady Situation.**—Ferns (hardy) of all kinds, Myosotis dissitiflora, flowering bulbs, such as Daffodils, Snowdrops, Crocuses, &c., hardy Cyclamen, Saxifrages, such as crassifolia, Andrewsi, sarmentosa, and umbrosa, the common Columbine, the Gentianella (Gentiana pneumonanthe), Ramondia pyrenaica, and the whole family of Primrose and Polyanthus, including the beautiful P. cortusoides amœna, P. denticulata, and P. capitata. The Christmas Rose would also be likely to do well, and the small-leaved variegated Ivy thrives admirably in such a situation.—J. C.

2748.—**Furnishing a Plant Case.**—The dimensions of the case will have to be regulated by the amount of space at the disposal of the grower. It may be from 1 ft. to 2 ft. in height and of any desired length. One side of the case should be made to open, so that its contents may be easily examined, and to admit of giving a change of air now and then. The bottom of the case is to be of zinc, thickly pierced with holes, so as to admit of perfect drainage, the surplus water discharging itself into a shallow tray of zinc, so arranged that it may be drawn out easily, independent of the case itself, thus providing a means for emptying away surplus moisture. That portion of the case containing the soil will, of course, have to be of zinc, the depth of the same to be about 6 in. The bottom should be covered with crocks or pieces of brick, the compost to consist of turfy peat, adding to it some silver sand and a little crushed charcoal. I should also mention that in the top of the case it is advisable to fix a small ventilator, so that the atmospherical conditions may be better regulated. We do not see that there can be any objection to Ferns; some of them are amongst the choicest and most beautiful subjects for the purpose, and they thrive better than most plants in such circumstances. No plant case should be without one or more of the Filmy Ferns, such as Todea superba, T. pellucida, and the Killarney Fern. The confined atmosphere of a case just suits them, and with care they last in beauty for years, and when in good health they are surpassingly beautiful. Then there are the Mosses, so charmingly fresh and verdant, such as the neat-habited Selaginella apoda, the elegant S. circinalis, and the climbing species cæsia arborea, the metallic hue of which renders it at once distinct and beautiful. Cyperus alternifolius variegatus is a pretty plant, and Fittonia argyroneura is a pretty variegated little plant, very distinct and attractive. There is also the Venus' Fly-trap and the little Pitcher-plant (Cephalotus follicularis), both interesting and manageable. Other suitable subjects consist of Sonerila margaritacea, Eranthemum sanguineum, Vriesia psittacina, Tradescantia zebrina, and the Artillery Plant (Pilea mucosa).—J. C., *Byfleet*.

2877.—**Improving Clayey Soils.**—If "A. O. A." will get road sweepings well mixed with horse droppings and throw on the ground pretty thickly, and let it remain for a month, or until the rain has carried the mixture well amongst the clay, then fork the whole over, well mixing as he goes along, he will find his land much lighter. If plenty of leaves can be spread over and forked in at the time, that will still further lighten his soil, and act beneficially as well. The above is the mode I adopted with a piece of very stiff clay for two or three years, and now it is friable and yields good crops.—R. B.

2897.—**Saxifrages Dying off.**—We know that some Saxifrages, especially those of the mossy section, are liable to go off in the manner described, but have always thought that the main cause thereof lay in the soil. Is yours of a retentive nature? if so, replace it with very sandy mould. We would advise that any plant showing signs of decay be at once taken up, cutting away all decayed parts, and pulling the plants to pieces, and dibbling them in freshly prepared beds. This will give them a renewal of life, and will in all probability stop decay.—C. B.

2830.—**Greenhouse Carnations and Pinks.**—It is very easy to grow any of the Carnation family in a greenhouse if layers be made now, and the newly rooted plants lifted and potted in November. These will soon get established and make strong plants, but it must be understood that unless they belong to the tree or winter flowering section they will not flower in the winter. To obtain these you had better apply to some good florist who is an extensive grower of these kinds, and will supply them well established in pots at about 18s. per dozen. There are about 50 kinds in commerce of all colours and markings. To name a few only would be useless, because these might be the most costly, though perhaps the best, but an order for a dozen plants of various colours would be the best method of securing a variety, and no doubt a good selection.

2835.—**Sowing Flower Seeds.**—If Carnation seed were sown at once plants might be induced to flower next summer, but it is uncertain, as properly the seed should be sown in April or May. Calceolaria seed may be sown at once, as also may be Lobelia, Pyrethrum Golden Feather, and Pelargonium, but this latter would no doubt be best if left till the spring, and then be sown in a gentle warmth. Even if the seed were now to germinate it might be difficult to preserve the seedling plants during the winter. Cockscombs are only tender annuals, and the seed must be sown in heat in the spring. The soil used should be one half sweet turfy loam, and the other half composed of either leaf soil or well rotted manure and sharp silver sand all finely sifted.—A. D

2990.—**Botanical Drying Paper.**—I purchased mine in a large paper warehouse in Edinburgh (Messrs. Cameron, Blair Street). The same kind is sold in Glasgow, but I am totally unacquainted with England, neither can I say at present if the paper is the same as that used in letter copying books. However, I will send a sample of what I have to "Novice," or any other one who may wish it, if they will send me their address. It is prepared specially for the purpose, and I believe is about the best. As to preserving the colours of flowers, every one who has tried it knows there are many flowers whose colours will not keep when dried, and in many cases the whole plant (flowers, leaves, and stem) turns quite black. But as far as the thing can be done I think I have been fairly successful, reds, yellows, blues, whites, &c., being still wonderfully good after being in my herbarium for years.—PED ARCHIBALD, *Kilmalcolm, Greenock, N.B.*

2913.—**Wintering Cuttings and Ferns.**—Such a frame as you state can be used for cuttings of Geraniums, Fuchsias, and other half-hardy plants. Make a bed inside of cinder ashes 4 in. to 5 in. deep; into this plunge your cuttings, &c. Let the ashes come nearly to the top of the pots. The principal thing is to avoid the cold from the outside; therefore, put plenty of cinder ashes all round the frame, and during frosty weather cover over the lights with bast mats, two or three mats according to the weather. Be careful not to water your plants too often during frosty weather.—JOE MILLER.

2834.—**Garden Refuse.**—"Amateur" will find muriate of lime to answer his purpose. Obtain some fresh burnt lime; to every bushel take about 6 lb. of coarse rough salt, and dissolve in a couple of buckets of water. Make the lime into a heap, and throw the salt water over gradually. In a short time the lime will break and fall into a powder. Prepare the vegetable refuse by making a layer 6 in. or 9 in. deep, treading it down well. Then spread a layer of the muriate of lime on that about ½ in. thick, then another layer of refuse, and so on until a depth of 4 ft. or 5 ft. is gained; then cover in with soil, or, better still, with Grass turves or sods, the Grass side downwards, and allow the heap to remain undisturbed until next spring.—SAXON DEYNE.

2989.—**Plants for Frames in Winter.**—Sowings of Lettuces and Cauliflowers to stand the winter might well prove the most profitable way to utilise an empty frame now, or else planted with strong roots of any kinds of Violets. It would be useless to plant or sow anything that required heat, or was too tender to withstand frost. As to a frame in which to preserve cuttings for the winter, a little warmth may be useful just now to assist in striking the cuttings, but the warmth will soon subside and be of no avail. Unless there is some other means of heating the frame, the tender plants could only be kept alive by excluding frost by the use of thick coverings and linings of long stable manure or straw. A concrete bottom may do if there is proper inside drainage, and it would keep down the moisture that will come up in the winter. The great things to do are—permit plenty of air, keep the plants and atmosphere dry, and exclude frost.—A. D.

3001.—**Carnations and Picotees.**—Unless you get plants of the winter-blooming or tree Carnations you can hardly hope to have Carnations and Picotees of the ordinary kinds in bloom in the spring, even under glass. July is the usual month of flowering, and it would need considerable forcing to induce plants to bloom so long before the customary period. Both Carnations and Picotees may be struck from cuttings, but the safest and surest way is to layer the side shoots in the soil where the plants grow, and when they are well rooted lift and pot them. Good turfy loam, with one-third mixture of well-decayed manure and sharp sand makes a good compost for these plants. A cold frame is the best place to winter them in, or else a shelf in a greenhouse where there is plenty of light and air. Yellow kinds, so-called, are merely French white kinds shaded with yellow, and may be had of almost any nurseryman who trades in plants of this kind. All the yellow ground kinds are more tender and difficult to grow than are the other coloured varieties.

2981.—**Hydrangeas not Flowering.**—Does not the lack of bloom on your Hydrangeas of which you complain result from the practice of cutting all the wood back each year? You say, "The plants are of course cut back every year after flowering." Why "of course?" If the severe weather cuts the wood back, there is no help for it; but to cut it back without reason is to invite failure. If the winters are severe then mat the plants over, and thus try to save the wood; but that can hardly be the case in the Isle of Wight. Thin out now all weak shoots such as would not perhaps produce bloom, and let those that remain have every possible chance to get well ripened; then, when the winter sets in and you do not fear frost, let all remain, and then see what will be the result next year; and we think you will be able to make a good report.—A. D.

2992.—**Hardy Edging Plants.**—Cerastium arvense, Herniaria glabra, and Veronica repens, all dwarf-growing dense creeping plants, make excellent permanent edgings for beds needing only occasional trimming. In the same way the hardy Sedum glaucum, lydium, and acre aureum are very useful and enduring. The first-named is silvery, the second green, and the third green in the summer, but charmingly tipped with creamy-yellow in the winter and spring. Of other plants, the common Thrift, the hardy wire Grasses (Festuca glauca and viridis), also the large woolly-leaved Stachys lanata, make good edgings and give a pleasing variety. The latter plants are most suitable for large beds.—A. D.

3000. — **Gloxinia crassifolia.** — Admit plenty of air and light to the plants from this time forward, watering when needful, but somewhat sparingly until the foliage shows signs of decay, when water must be gradually withheld. As soon as the leaves have turned yellow, turn the bulbs out of the pots and store them away in Cocoa-nut fibre or sand in a warm place until March or April, when they are to be potted in small pots in a compost of two-thirds peat and one-third leaf-mould, adding thereto some silver sand. Water very carefully, and keep them in a temperature of 55°. When they start into growth shade from hot sun, and as soon as they are seen to need it shift them into 4½-in. pots. Place them in a light position, give air on favourable opportunities, but avoid chilling draughts, and in hot weather maintain atmospherical moisture by means of frequent syringings and damping down the paths and stages. When the flower-buds appear remove to a cool greenhouse.—J. C. B.

3002.—**Ageratums not Flowering in the Usual Way.**—From the fact that your Ageratums assume such a squat, bushy habit it is evident that you have a variety known as Tom Thumb, which is more noted for this sort of growth than for blooming. The most free-blooming and beautiful kind we have seen is Cupid. It is this year in beds a perfect mass of bloom, and not more than 12 in. high. Countess of Stair is also a good kind. Both can be had in plenty through any florist no doubt, as these things may be propagated like weeds in heat. Whilst there are many objections to masses of brilliant colours in flower-beds because their frequent reduplication becomes tawdry and unnatural, this objection can hardly apply to the Ageratum, as its tint is soft and very beautiful.—A. D.

2979.—**Moles in Gardens.**—Moles are difficult to trap at this time of the year, because, owing to the surface of the soil being so dry the worms and grubs go deep and the moles work deep to find them. When the runs are near the surface it is easy to catch them alive by watching for the moment when the soil is seen to heave; then with a fork quickly lift the little animal from its run, and it may be either killed or caught. Where the runs are so deep that spring-traps are of no avail it is a good plan to saturate some rags tied to a twig in paraffin, and having set it on fire thrust it a little way into the run, so that the smoke and fumes may reach the holes. This is termed stinking them away, and is sometimes successful.

2987.—**Russian Violets.**—We should say that no course could be more destructive to Violets than the lifting and starving the plants in the autumn. We have had a grand season for Violets; plenty of moisture during the growing period and plenty of warmth and sunshine at the end of the summer to ripen the flowering crowns, and wherever the plants have been properly grown they will certainly carry an abundance of bloom next year. In the Middlesex market gardens, where Violets are grown in great quantities, the old plants are pulled to pieces in April and dibbled out again 18 in. apart. These make fine clumps during the year, and next spring produce an immense quantity of flowers, standing for about three years.—A. D.

2799.—**Keeping Rain-water Pure.**—Your correspondent "S. L. C." gives a description of "keeping rain-water pure in a simple, cheap and practical manner," as carried out at Knockholt, near Sevenoaks. The method adopted, which he explains, is almost general in every provincial town. The underground cistern with its pump in the yard, garden, or scullery is everywhere to be met with. But so far from keeping rain-water pure, it is in many instances the primary cause of rendering it unfit for use. Given an underground brick tank, cemented, &c., you must provide an overflow pipe for times of heavy rainfall, and this overflow pipe the builder connects with the house drains or sewer, for which latter it then becomes a simple ventilating shaft for polluting the water of the cistern; or, as I have sometimes seen, a stoppage occurs in the drain below the junction of the overflow pipe, and the sewage is backed up into the rain-water. When we recollect that rain-water gathered from gutters and downspouts of houses has first of all acted as the scavenger of these channels, in removing soot, the dung of birds, and decayed leaves of trees, beside other filth, we see at once the difficulty in procuring pure rain-water from these tanks where it must simply lie and decompose. In all cases I should recommend an above-ground receptacle, which admits of frequent inspection and systematic cleansing without the possibility of sewage contamination. If required for domestic consumption the filter must be regarded as a *sine quâ non*.—J. M., *Loughborough*.

2972.—**Cucumbers not Fruiting.**—Most of the Cucumber failures I have met with of a similar nature to "Enquirer's" were owing to planting in soil that was too light and rich, "deficient in minerals," and although such soils produce foliage, yet they seldom produce fruit in a satisfactory manner. Turfy loam enriched with a fourth, or in some cases a third, of old manure forms a good compost for Cucumbers.—E. H.

A Greenhouse Pillar Plant (Habrothamnus elegans argenteus); flowers red. (See p. 358.)

2900.—**Law Respecting Greenhouses.**—The questions whether greenhouses come under the Metropolitan Building or any other similar Act, and also whether they therefore come within the surveyor's jurisdiction, have just been decided by a case in the police court here. This case establishes conclusively that a greenhouse comes under the exempted buildings mentioned in the Act (18 & 19 Vict., cap. 122, p. 1144), even if it have a stove and piping for heating purposes. The Act specifies that "party walls and greenhouses, as far as regards the necessary woodwork of the sashes, doors, and frames," are exempted; and the magistrate in his decision particularly laid stress on the objects for which the structures were intended, viz., the growing and keeping of plants. The surveyor contended that it was a dwelling-house, because it was of a certain size, and because it had a stove and flues in it, and also because it had "brick panel walls," these walls, be it understood, being really the party walls of the garden, of which the house was built independently. All this was overruled by the magistrate's decision, and, as a penalty for being in the right, I have been mulcted in the cost of my defence, amounting to 30s.—T. BOOTH, *Hathershaw, Oldham, Lancashire*.

—— In reply to the query in last week's issue, surveyors have a right to interfere "within the limits of the Metropolitan Buildings' Act" with greenhouses, and they will not allow any portable greenhouse to be erected. I put up one and had to sink a foundation 24 in. under the ground and put 9-in. brickwork up to the sashes. I allowed

myself to be summoned first, and the magistrate at Worship Street distinctly stated that greenhouses came under the Act.—JOHN BELLINGHAM.

3037.—**East Lothian Stocks.**—Unless the weather should be very severe, the mats will be a sufficient protection, but it is damp that injures them more than cold. If the Stocks could be potted carefully, and when established introduced to the greenhouse, they will bloom very early in spring. But no matter how saved they will certainly bloom well next spring and summer.—E. H.

2974 and 2990.—**Drying Flowers.**—In answer to "Janet" and "Novice" respecting drying and preserving flowers, I beg to offer the following suggestions: Collect only good representative plants, taking leaves, flowers, and both kinds of buds if possible. This should be done in dry weather. Place the plants so gathered between sheets of absorbent paper. A very good sort which I have used with much success is that called Tobacco paper; it is easily procurable from any paper warehouse. Lay a sheet of this paper on a stout board; on this place enough plants to just cover it with a single layer; then add more paper and another layer of plants, and so on until all your specimens are disposed of, and place another stout board and about 80 lb. weight of stone or metal on the top thereof. The paper should be changed in twenty-four hours for some that is dry; afterwards change the paper every two or three days. When dry the plants may be stored away between sheets of newspapers till they can be mounted on cartridge paper. Flowers with very delicate corollas should be placed when fresh in a fold of tissue paper, and kept in it until dry. This saves them from getting torn. Plants so dried will keep their colour pretty well, generally speaking. There are certain plants which cannot, however, be dried so as to retain their original colours. Such plants as Sedums are best dipped in boiling water before being placed in absorbing paper, otherwise they are difficult to dry. They will even go on growing in the paper. When mounted the plants may be brushed over with a solution composed of 2 drachms of corrosive sublimate in 1 pint of spirits of wine. This keeps insects away; as it is very poisonous it must be very carefully used.—BOTANIST.

3046.—**Overgrown Wall Trees.**—The strength of the tree has gone upwards, and the sap, having made a channel there, can only be brought back by cutting the wild growth off, or bending it over the top of the wall and training it down the other side. The latter plan will be best if it can be done, but the tree would have to be headed down to induce it to break from the bottom and furnish the lower part of the wall.—E. H.

2902.—**Eucalyptus in Winter.**—Sometimes large plants of this stand the winter unprotected; your soil and situation must be unfavourable and cold. After your experience of the two last seasons I would by no means advise you to trust your large plant to the tender mercies of an ungenial climate, especially as by going to some little trouble you can safely protect it. I have seen trees and shrubs more tender than Eucalyptus protected successfully during severe frost in the following simple manner: Stick poles in the ground all round your tree about 3 ft. apart and 1 ft. taller than the tree is itself; now nail laths from the inside of one pole to the outside of the next pole crosswise about 6 in. apart all round. A couple of laths should also be nailed across the top to keep the framework together. The latticed space thus formed round the tree must be packed with a sufficient quantity of Moss or dry Fern to keep out the extreme cold. When severe frost sets in the top can be covered over with a mat or two. This if carried out will save your tree, a fact that should be of sufficient value to repay you for your trouble.—P. J. KANE.

2991.—**Vine Suddenly Dying.**—As the other Vines in the house are looking well and bearing a good crop, there must be something quite local for the Golden Queen to die in so strange a manner. I should think it might be ascertained by an examination of the border and the plant. Has anything interfered with the stem or main roots? A rat or even a mouse has been known to cause the death of a Vine by nibbling off the bark of the stem close to the collar.—E. H.

2801.—**Grass Going Brown.**—Almost any good gardener on the spot could advise you better, as the cause would most likely be easily perceptible. If it arises from poverty in the soil, top-dressings of manure will be serviceable; soot and guano applied in showery weather will do good. Are there any insects present at the roots of the Grass? You had better examine it.—E. H.

2715.—**Melons Rotting.**—They are probably kept too close. Ventilate as soon as the sun strikes full upon the frame in the morning; perhaps, as the days have been often dull, the plants have not had much air.—E. H.

2745.—**Moss on Gravel.**—Sprinkle salt all over the surface of the carriage drive, using from 2½ lb. to 3 lb. per square yard. It is best done in dry weather. The following is an effective dressing for destroying Moss or weeds: 14 lb. of salt and 14 lb. of sulphate of copper; dissolve in 30 gallons of boiling water and apply it hot.—E. H.

2887.—**Water Lilies in Bouquets.**—I should recommend "M. A. C." to try my plan, which has answered admirably. Put the buds into a basin of water, and stand in the sun or a warm place where they will soon come out; then take them out and pour a little thick gum arabic into the centre; it must be thick, so as it will dry soon, and when once dry the flower will not close, but remain open until it dies. I have also closed the end of the stalk with a little sealing-wax, which I find keeps them fresh.—N. C. W.

2836.—**Magnolia not Flowering.**—We think that the cause of the Magnolia not flowering will be found to lay in the sunless nature of the two last seasons. The wood has not matured; a hot summer would probably set things all right again.—C. B.

2996.—**Striking Roses in Water.**—Last year, about the end of August, I put four or five Rose cuttings in a bottle in water, and at the end of three weeks they were all rooted, when I put them into small pots, using a very light, turfy soil, giving them a liberal supply of water; in fact, keeping the soil as moist as possible until the plants had shown growth. Great care must be taken in potting the rooted cuttings, the soil to be gently placed over the roots. I have two nice plants treated in the above way.—J. C., *Whitley*.

2999.—**How to Improve Lawns.**—"A Learner" did not evidently pay any attention to consolidating the seed-bed sufficiently before sowing the seed. If the turf is sufficiently good it may be taken up where the ground has sunk, the place levelled up with earth, and the turf relaid, a few seeds being sown over it, and a light covering of leaf-mould given. If the turf is not worth lifting, level the sunken places with earth, sow seed thickly, and cover with leaf-mould.—CARTER & CO.

2982.—**The Bury Bug.**—Trombidium autumnale, the bury bug or harvest bug, is a minute Arachnid, which buries itself in the skin, causing what are commonly termed heat-lumps, which are accompanied by great itching and irritation. The best remedy is to examine the spot as soon as discovered, when a minute white speck will be found, which should be punctured and well pinched or squeezed. A drop of serous fluid will exude, and further irritation in a great measure prevented.—W. L. J.

—— In reply to your correspondent respecting the best way to cure the bite or sting of bury bugs, or harvest bugs as they are sometimes called in this neighbourhood, I have suffered from these pests recently, and found Spratt's Dog Soap a certain cure after one or two applications. Wash the parts affected, using plenty of this soap, and the itching will soon cease.—PRO BONO PUBLICO.

—— This appears to be what is more commonly known as the harvest bug, being rather numerous at harvest time. The insect buries itself in the skin, causing much irritation, and often sores. The best application is a warm decoction of the woody Nightshade (to be met with in many shady roadside hedges) or a little sal volatile, or else Goulard water, with a few drops of laudanum added.—CHAS. NEVISON.

Gloire de Dijon Rose.—I should advise "G. E. T." to bring down one of the strong shoots of his Rose to within a few feet of the ground, and next year, if it is budded on a Brier, to allow a shoot to grow from the root and re-bud it, leaving the old tree standing.

Slugs in Larder.—Put a saucer of milk or bread and milk on the floor when dark. An hour or two afterwards you will find the slugs feeding—perhaps six or eight round the saucer; catch and kill.—A. B. C.

Striking Roses in Water.—I have never found any difficulty in planting my Rose cuttings. I take them out of the water when the roots are about ½ in. long, and put them at once carefully in the centre of a small pot, making a hole for them, and covering lightly with mould about 2 in. deep, watering them freely afterwards, and protecting from the sun for a few days.—S. M. M.

2998.—**Cankered Roses.**—Maréchal Niel is, unfortunately, very subject to canker, and we know of no effectual remedy, and where a plant is badly infected we would prefer to destroy it and replace with another. You might, however, try the French remedy for canker in fruit trees, or burning with a hot iron. This may stop it, but we would certainly prefer to replant. It is not advisable to occupy good space with a diseased plant.—C

2973.—**Cactus Cuttings.**—Do not disturb the cuttings now, but wait until next April before potting them off. They may be kept in a cool greenhouse, from whence frost is excluded, or they may be wintered in a room. Sandy loam mixed with a little brick rubbish is the best compost for them. Pot firmly, and drain the pots well. Water moderately, and expose to the full influence of the sun during the summer, giving plenty of air. Cacti require a good roasting to mature the wood for flowering.—C.

2983.—**Propagating Clematis Jackmani.**—The Clematis Jackmani and all its fellow kinds are generally propagated either by means of layers—that is, pieces of the growth pegged down at the joints into the soil, and thus induced to root, or worked as grafts upon the roots of some common kind. The plants, when strong, may also be propagated by lifting and dividing the roots. Little growth is made after the bloom, as that is usually the termination of the season's product of shoots.—A.

2977.—**Cucumbers Being Eaten.**—Rats, in all probability; I suffered from the same last year.—H. S. YOUNG.

2984.—**Begonias Going to Seed.**—The seed-vessels of most kinds of Tuberous Begonias are very prominent before the flowers open, but the flowers themselves should last quite a week. Perhaps they have suffered from want of moisture at the root.—B.

2887.—**Water Lilies in Bouquets.**—The Water Lily closes naturally in the evening, but should remain open when cut during the daytime. To prevent its closing we have been informed that it is a good plan to slit the calyx all round, a method which is effectual in the case of the Gazania, which shuts up in the evening.—C.

2783.—**Gooseberry Caterpillar.**—Chaffinches and cuckoos destroy them; perhaps the cuckoo is the most voracious, but the chaffinches continue all the season feeding upon them. All small birds, or nearly so, with the exception of sparrows, eat them. I have 4000 Gooseberry trees, but very few caterpillars. Encourage small birds.—H. S. YOUNG.

2901.—**Mezereon Daphne.**—This is generally raised from berries sown in spring in a mixture of heath mould and rich sandy loam; border with a south aspect suits it best.—P. J. KANE.

3047.—**Insects in Manure Tanks.**—Insects will generate in stagnant water. If the liquid manure tank cannot be emptied try a little chloride of lime.—H.

3045.—**Fuchsia Buds Dropping off.**—Probably the roots are too well supplied with water. If the soil gets sour from stagnant moisture the buds will fall. Are there any worms in the pot?—E. H.

3048.—**Woodlice and Earwigs.**—Place a toad or two in the greenhouse to eat the woodlice; also trap them by placing a handful of dry Moss or hay in a few empty flower-pots laid on their sides under the stages. Examine the pots occasionally, and kill the insects. Cut pieces of Beanstalks 8 in. or 9 in. long, and lay where the earwigs congregate. They will hide in the hollow stalks, and may be puffed out into hot water and destroyed.—H.

3040.—**Unfruitful Grape Vine.**—It is a common practice to plant Grape Vines without making any preparation or doing anything to improve the site, and, of course, under such conditions the Vines are long in gathering strength to bear fruit, especially on a west aspect. As the soil is gravelly, mulch with some old manure to be forked in in November. When the leaves fall prune back to firm wood.—H.

3041.—**Plants not Flowering.**—The bulbs named like all bulbs generally require a season of growth, and then a resting-time with cooler, dryer treatment. If they fail to flower it is through some error in attending to their wants. Turfy peat and loam with some sand and charcoal will grow them well.—H.

3035.—**Annuals for Spring.**—Sow at once the following; it is full late: Limnanthes Douglasi, Nemophila insignis, N. maculata, N. alba, Saponaria calabrica, S. alba, Silene compacta, Virginian Stock (red and white), Collinsia verna, Bartonia aurea, Asperula azurea setosa, and Myosotis dissitiflora. In future sow the Myosotis about the end of July.—E. H.

2995.—**Peaches and Nectarines Failing.**—Are the Peach trees free from red spider? Their presence would cause the leaves to fall, and when that happens, from whatever cause, the fruit would be worthless. Overdressing with manure water, so as to close up the pores of the soil and cause stagnation, paralysing the action of the roots, will produce pretty much the same effect.—E. H.

2997.—**Nasturtium Pods for Pickling.**—The seed-pods of the dwarf Tom Thumb Nasturtium may be safely used for pickling if gathered young enough.—E. H.

3050.—**Soluble Phenyle.**—Write to Morris, Little & Son, Doncaster, and they will direct you to the agent most suitable. The price is 10s. a gallon in a 2-gallon iron drum, but 1s. bottles are to be had.—E. G. H.

—— The soluble Phenyle enquired for is perhaps absolute Phenol, which consists of carbolic acid in a state of extreme purity.—J. F. M.

3051.—**Drying Tobacco.**—"Tobacco Culture;" practical details published by Orange Judd, editor of the *American Agriculturist*, 41, Park Row, New York, 1863; price 25 cents. This publication gives the information required by "Good Hope."—OMBU.

2982.—**Berry Bugs.**—If these are the same as what are called harvest bugs I can recommend mercurial ointment rubbed into the places where the creatures have buried themselves. Many years ago I suffered severely from their attacks, and used the above remedy by the advice of a doctor with perfect success.—E. G. H.

—— In answer to your querist, Thos. Lockhart, I would advise him to apply sweet salad oil, previously made hot, to the bites of the insects he mentions, which I should say were what are called about here harvest bugs; the oil to be well rubbed on the bitten places with the hand.—OXONIENSIS.

3039.—**Berries for Winter Decoration.**—Put any berries clean and dry into a strong pickle of brine and water in a deep pot with a layer of mutton fat on the top to exclude air; in this way they will keep for months. When wanted take out and dip in fresh cold water and dry on a cloth.—C. H.

3052.—**Daisies on Lawns.**—A pinch of salt on each root is the quickest and most effectual way of killing Daisies, &c. The Grass will look shabby for a time, but rain will restore it.—C. H.

3001.—**Carnations and Picotees.**—Carnations that have done blooming, taken up now and potted in good rich soil and wintered in an ordinary greenhouse temperature, will bloom freely in April. To ensure an earlier bloom the perpetual varieties should be used. Of ordinary Carnations the golden-yellow variety Florence will be found very free and strong, combining size of flower with quantity of bloom.—J. A. B. W.

3127.—**Tomatoes in a Vinery.**—*R. H. M.*—Tomatoes can be grown in a Vinery, but the shade of the Vine leaves will generally prevent a very good result being obtained; to do them justice they should have a little glass compartment to themselves.

3128.—**Carnation Cuttings.**—*H. B.*—Carnations can be propagated in the way you name, but for general purposes layering is the most certain method. Tree Carnations should be propagated by cuttings taken in the months of April or May; with the assistance of a little heat they strike root freely then.

3129.—**Pelargonium Cuttings.**—*H. B.* — These should no longer be exposed to heavy rains, but place them at once in the greenhouse, and give them abundance of air.

3130.—**Liquid Manure for Maiden-hair Ferns.**—*Rose.*—Liquid manure is dangerous unless applied with great judgment to Maiden-hair Ferns, and we do not advise you to use it. Re-pot your plants in the spring, using a mixture of some good fibrous peat, loam, well decayed leaf-mould, and sharp silver sand as a compost for them, and put plenty of drainage in the bottom of the pots.

3131.—**Camellias Losing their Flower-buds.**—*J. B.*—Although you say your plants have not suffered from want of water at the root, we are of opinion that drought is the real cause of the buds falling off from otherwise healthy plants. The ball of earth surrounding the roots may appear moist on the top and yet be as dry as dust in the middle. See into this matter, and if you find such to be the case, stand them in a tub of water until thoroughly soaked. Are the plants in bad soil, or in very small pots?

3132.—**Hot Water not Circulating.**—*Constant Reader.*—We should say the cause of your hot-water apparatus not working satisfactorily is to be attributed to a lodgment of air in an elbow or syphon. Have it inspected by a competent man, and additional air pipes added thereto if requisite.

3133.—**Lobelias and Musk.**—*Dicky Sam.*—Lobelias and Harrison's Musk can be propagated with the greatest ease from cuttings, and the Musk can also be increased by division of the root.

3134.—**Vine Shoot.**—*Fylde.*—From the appearance of the Vine shoot sent we should say your Vines are infested with black thrips. These insects are most injurious and difficult to eradicate. After you prune the Vines, dress the stems over with a strong mixture of Tobacco water, soft soap, and sulphur, and thoroughly cleanse every portion of the interior woodwork of the Vineries with hot soap and water.

4135.—**Potatoes Eaten by Insects and Slugs.**—*Potato.*—Apply copious dressings of soot and lime, and in the winter trench the ground roughly, so that the frost may penetrate freely. This probably will do good.

3136.—**Unhealthy Muscat Grapes.**—*W. C. M.*—Your Muscat Grapes appear to be suffering from a bad attack of "rust," a state of things generally brought about by cold draughts of air or by careless handling when the berries are thinned, and we also think the roots of your Vines must be in a cold, uncongenial soil. Muscat Grapes require a warm well-drained border for the roots to grow in, together with a high temperature for the top.

3137.—**Hollow Celery.**—*One Interested.*—Celery often becomes hollow or pipy, as it is termed, from having had an insufficient supply of water at the root during its growing season. A good well enriched loam is the best soil for it.

3138.—**Primroses Dying.**—*Rustoni.*—From what you say your Primroses are evidently planted in very poor ground, and are therefore starved. Take them up at once, and well manure and dig the land; then divide the Primrose roots if they are large, and replant, and you will probably have better success in the future. Your other queries are of so trivial a nature, that we cannot afford space to notice them.

3139.—**Wintering Alternanthera.**—*F. D. W.*—To winter this plant well it should be afforded during the cold months a temperature of 50° or 55° of heat, and placed near the glass. If kept in a much lower temperature the chances are that you will lose your stock.

3140.—**Humea elegans and Salvias.**—*Datchett.*—Neither the Humea nor the kinds of Salvias you name are hardy, and therefore, of course, cannot be grown out-of-doors during the winter.

3141.—**Small Greenhouse.**—*Lincoln Amateur.*—In a greenhouse of the dimensions given, and with the present heating power at command, it would be useless for you to attempt to force the vegetables, &c., you name. Balsams do not bloom in the winter.

3142.—**Fixing Hot-water Piping.**—*A. B. T.*—The best way to fix hot-water piping together so as to be easily taken apart again is to use the vulcanised india-rubber rings. They can be obtained from any hot-water engineer, who will also no doubt show you how to use them.

3143.—**Dirty Leaves on Lemon Tree.**—*G. C.*—Your Lemon tree is evidently infested with brown scale. The best remedy you can adopt is to thoroughly wash the foliage with a sponge, using plenty of soft soap and warm water. This operation should be frequently repeated.

3144.—**Cuttings of Fuchsias and Geraniums.**—*Novice from the Cape.*—Fuchsias and Geraniums struck now can be easily wintered in the window of any ordinary sitting-room. During the dull winter months they will not require water more than once a week.

3145.—**Greenistas, Camellias, and Azaleas.**—*Constant Subscriber.*—It is not safe to leave these and similar greenhouse plants growing in pots out of-doors longer than the end of the present month.

3146.—**Geranium Cuttings Turning Black.**—*A Learner.*—From what you say about your Geranium cuttings we should think you have given them an over-abundance of water. Try the effect of keeping the soil moderately dry, and carefully remove all decaying foliage as soon as it is observed.

3147.—**Soil for Fuchsias.**—*Horological.*—The best soil for Fuchsias is a mixture of, say, two-thirds light sandy loam and one-third decayed manure and leaf-soil, with the addition of just a little sharp silver sand. When potting your plants use plenty of drainage, as although the Fuchsia delights in moisture, it greatly objects to any stagnant water about its roots.

3148.—**Soap-suds.**—Are soap-suds any good for greenhouse plants? or would they be injurious?—M. P. [Soap-suds carefully used in a diluted form are excellent as a wash to destroy insects on plants, but certainly dangerous to water the roots with; by no means use them for that purpose.]

3149.—**Figs and Tomatoes Cracking.**—*Evelyn.*—The cause of this is generally to be attributed to either excess of moisture in the atmosphere or at the root. Avoid either extreme.

3150.—**Cinerarias.**—*C. A. B.*—Suckers should certainly be removed from Cinerarias, and if you wish to increase your stock these suckers will quickly strike root and make excellent plants.

3151.—**Cabbages and Cauliflowers Clubbing.**—Can you suggest a remedy for Cabbages and Cauliflowers clubbing at the roots? mine have all gone so this year. Can anything be put in the land to prevent the same?—SUBSCRIBER. [Plant as much as possible on fresh land, but where this cannot be done good dressings of soot and lime should be dug into the ground before planting.]

3152.—**Cutting Down Geraniums and Fuchsias.**—*W. H.*—You may cut down Geraniums now, but leave the Fuchsias until spring.

3153.—**Calceolarias Dying off.**—*Accrington.*—Very probably you over-water your Calceolarias and allow them to become infested with green fly. These causes would both tend to destroy your stock.

3154.—**Chrysanthemums and Wallflowers.**—*R. C. S.*—Cuttings of Chrysanthemums had better be kept in their pots during winter. Wallflowers may be planted out.

3155.—**Exhausted Soil.**—*S. A.*—You should endeavour to have a portion of the old exhausted soil carted away from your garden and replaced with some fresh turfy material, and then well and deeply dug over and manured. Bulbs might then be planted, and should do well.

3156.—**Passion-flower Leaves Spotted.**—*A Constant Reader.*—The leaves sent show evidently that your plant is attacked with red spider. You may check it by copious and frequent syringings with clean water, and also see that the roots are well supplied with moisture.

3157.—**Cutting Down Pelargoniums and Fuchsias.**—*G. M. F.*—Pelargoniums should be cut down in the month of August, and when they have made a little fresh growth should be repotted. Fuchsias may be kept rather dry during the winter, and cut back and repotted in the spring.

3158.—**The White Anemone** (Anemone japonica alba).—*Usurious.*—We should say you will have no difficulty in obtaining this Anemone from some nurseryman in your neighbourhood, and the price should not be large.

3159.—**Grub on Fuchsia Leaves.**—The leaves of my Fuschias have this season been attacked with a small brown grub. I have had also a quantity of them on other plants in my Vinery and greenhouse, and wherever they are present the foliage seems to be killed. They are found in most instances rolled up in the leaves in a kind of cocoon, and grow about ½ in. long, and about as thick as fine twine. Can any one suggest a good mode of extermination and prevention?—G. S. [Try syringing with rather strong Tobacco water, or, where practicable, dust the foliage affected with soot.]

3160.—**Propagating the Cardinal Lobelia.**—Will you inform me how to propagate Lobelia cardinalis?—EDITH ATTWOOD. [Divide the roots in early spring.]

3161.—**Brussels Sprouts.**—*W. B.*—These require no special treatment at this season of the year; to remove any of the large leaves would be the worst thing you could do.

3162.—**Heating a Greenhouse.**—I have a greenhouse 31 ft. long and 9½ ft. wide, and would feel obliged if any one could recommend the best kind of paraffin or other oil stove or lamp for heating the house during the winter; also if more than one would be required for the size of the house, which is built in an exposed situation.—L. [The only efficient way of heating a greenhouse of the size named that we can recommend is either by a well constructed brick flue, or, better still, by hot-water pipes attached to a small saddle boiler.]

3163.—**Mildewed Peas.**—*T. D. W.*—The Peas have become mildewed through insufficient depth of soil, manure, and moisture.

3164.—**Glazing Without Putty.**—*A. W.*—This is said to answer well; you had better try and see a house glazed in this system before you attempt it yourself.

3165.—**Rubbish in Water Tank.**—*C. M.*—It is simply an accumulation of leaves, sticks, and dirt, which have been washed in from the roof of the house, and which may be found in any rain water tank which has not been cleaned out for some time.

Names of Plants.—*R. C. S.*—Achillea Ptarmica fl.-pl.——*G. F. W.*—We cannot name Coleus.——*Barrowby Lane.*—French Lavender (Lavandula spica).——*L. C.*—Impatiens grandulifera.——*Novice.*—We cannot name Coleus.——*J. J.*—Tropæolum speciosum.——*J. S.*—Chrysanthemum Leucanthemum var. maximum.——*B. B.*—The fine pods of Peas sent appear to be of the old matchless Marrow type, but such things cannot be named with any certainty.——*W. R. T.*—Maurandia Barclayana.——*F. D. W.*—Eupatoria ageratæoides.——*Heather.*—Tropæolum speciosum.——*Constant Reader.*—1, Fuchsia globosa; the other flower sent was dried up beyond recognition.

Names of Fruits.—*J. R.*—Apples: 1, Dumelow's seedling; 2, Yellow Ingestre.——*R. T. (Weymouth).*—No one could tell you the name of your Apple without seeing specimens of the fruit.

QUERIES.

To Querists.—*All questions are inserted or answered in these columns free of charge, provided the following rules are observed: 1.—Write clearly and concisely on one side of the paper only. 2.—Use a separate sheet of paper for each query. 3.—Give full name and address, with any nom de plume or initials you may wish used in the paper. Questions only of interest to the persons asking them should be accompanied with a post card or stamped addressed envelope for reply.*

3166.—**Lycopodium Moss.**—How can I grow the above and increase it for hanging baskets? Also what treatment does it require to keep it alive during winter? Can I do so in a cool Fernery? Or will it do better in a glass case inside the window of a living room?—J. B. M.

3167.—**Winter Salads.**—I am desirous of using part of a greenhouse for growing a few winter salads and vegetables; can any experienced person tell me the kinds that can be readily grown? I have one bed about 10 ft. by 3 ft., soil varying from 9 in. to 15 in. deep, with hot-water pipes beneath, light, and near the glass, and others smaller and more shaded.—A SUBSCRIBER.

3168.—**Varnishing Window Boxes.**—I am making some window boxes and covering them with Virgin cork; will any reader tell me how to varnish the cork of a light Oak, or its own natural colour, so as to resist the weather, and prevent it getting black with dirt?—G. M. WEEKLEY.

3169.—**Keeping Window Plants in Winter.**—Will some one give me information how to keep Geraniums, Calceolarias, and Fuchsias during winter without heat? They are at present in a parlour window where there is no gas, and seldom any fire in winter. I have a spare room, but with only a small window.—SYDNEY RANDAL.

3170.—**Colouring for Fruit Walls.**—I am now having about 50 yards of fruit wall built; aspect a little to the east of south. I intend to colour it black, and I should like to gas tar it, as I believe that nothing will keep away insects so well as gas tar. Will you kindly say whether there is any objection to using this on a fruit wall? I may add that I shall train the trees on horizontal wires on the French system, and iron brackets 2 ft. wide will be built into the wall at distances of, say, 5 ft., just below a 3-in. coping. On these I shall place in spring, when the buds are showing, light, movable wooden frames, covered with oiled or varnished calico, as defences against frost. May I ask for criticisms on my scheme?—J. E. VAUX.

3171.—**Flowers for Fern Case.**—What flowering plants would be suitable for growing in fern case indoors, and which of them ought to be purchased at this season? The case is 36 in. by 20 in., and 24 in. high. Could any of the cheaper Orchids be got to flower in such a case?—CLYDESDALE.

3172.—**Failure of Ixias and Sparaxis.**—I have grown these beautiful Cape bulbs for the last four years with success, as regards the growth of the foliage, but not a single flower have they produced. The bulbs I was growing were those mixed varieties, which are mostly very small roots, and which look as if they were unable to produce flowers. As I am going to grow them another season, will any one give me a few hints how to induce them to flower?—J. HENRY.

3173.—**Climbing Rose Trees not Flowering.**—I have a climbing red Rose tree which has not blossomed for two or three years, the leaves all falling off very early in the autumn. I should like to be informed of some remedy. It is situated in rather a confined position, and is facing east.—G. M. F.

3174.—**Cutting Rhododendrons, &c.**—I have in a small plot of ground in front of my house a rather large Rhododendron and two Aucubas, all of which I wish to reduce in size. Will it be right to cut them down, say some 5 in. or 6 in., and if so, at what time of the year?—G. M. F.

3175.—**Renovation of Soil.**—I have a piece of ground which is rather heavy, although it looks like good loam, and is infested with worms and slugs. I intend digging in some ashes, soot, lime, and salt, to lighten it and clear it of vermin. Would it be doing any good to dig in a quantity of leaves from a Pear tree which I have in an undecayed state? If not, what is the best thing to do to utilise them?—ALPHA.

3176.—**Conservatory Plants.**—I have a conservatory 20 ft. by 14 ft., and 14 ft. high in the centre. All four sides and roof are glass and wood. At present it is empty. I shall be very much obliged for any hints as to filling it up with effective plants, and what evergreens, Ferns, creepers, &c., to get, so that it may look well all the year round without constant expense in manual labour. There is a good supply of water in my conservatory. Would some large plants, such as Tree Fern, India-rubber, and Palm look well planted in the centre? Any information will be thankfully received. The house is thoroughly heated by hot-water pipes, and the floor is tiled.—A CONSTANT SUBSCRIBER.

3177.—**Kitchen Apples.**—Can any of your readers living in the fens of Lincolnshire or Cambridgeshire tell me from their own experience about six of the best kitchen Apples to grow as standards in that district?—A. B. G.

3178.—**Cloches or Bell-glasses.**—Will any one kindly inform me where the cloches or bell-glasses so much used now by the market gardeners near London are manufactured? or at what retail shops they can be obtained at a reasonable price?—J. S.

3179.—**Removing Rose Trees, &c.**—Is it the proper time to remove Rose trees, Ferns, and Lily of the Valley? The Lilies will be removed from a west aspect to a shaded south-east one.—W. D.

3180.—**Quick-growing Plant.**—Will some reader kindly inform me of a very quick-growing plant that would keep green all winter? and also, if now is the right time to plant Honeysuckle?—W. D.

3181.—**Brier Stocks.**—Can any reader inform me where I can obtain Dog Rose or Brier Stocks? and the cost per hundred?—F. J. R.

3182.—**Treatment of Eucharis amazonica.**—Can any one inform me how to treat Eucharis amazonica? Will it do in a greenhouse—as that is the only place I have to grow it in? When is the time to divide it? and what kind of soil is the best for potting it in?—AMAZON.

3183.—**Spiræa japonica.**—How am I to treat these so as to have them in flower about March?' I have very little heat at command. What time in the spring would they flower if left outside, or kept in a cold frame?—BERKS.

3184.—**Coping for Walls.**—What is the best kind of cheap coping to cover the top of a garden wall—to protect it from the penetration of wet? I recollect seeing somewhere that a mixture of boiling tar and, I think, lime and sand forms a good covering, but I cannot remember particulars or the proportions.—HORTUS.

3185.—**Seedling Calceolarias.**—I am about potting into 3-in. pots some Calceolarias raised from seed sown in July last, and, having no frame or greenhouse, should be glad to know if they would do in a back room of my dwelling-house, close to a sunless window, and what is the proper soil for them and treatment through the winter, and when should they bloom.—HORTUS GRAL.

3188.—**Insecticide.**—Your correspondent "J. W." states that he has found castile soap an effectual insecticide, but will he kindly say the quantity of water to 1 oz. of the soap. I tried 1 oz. to a bucketful, but the thrips next morning seemed to have treated their immersion therein as a practical joke, and were grazing as actively as ever.—J. ROBINSON, *Southport*.

3189.—**Digging up Parsnips on Strong Land.**—Is there any tool by means of which Parsnips grown in strong land can be raised without injury? I have some acres, and they have penetrated to such a depth that I anticipate much trouble in digging them up.—E. L.

3190.—**How to Collect Lobelia Seed, &c.**—Can any reader inform me the proper way to collect, and the best time to sow the seeds of Lobelias, Phloxes, Balsams, and Perilla?—A YOUNG BEGINNER.

3191.—**Pruning Gloire de Dijon Rose.**—Writing of the adaptability of this Rose for walls, your correspondent "Hartside" says it needs special pruning to bloom well. Perhaps he will kindly explain of what the special pruning consists.—QUERCUS VIRIDIS.

3192.—**Pine Trees and Shrubs.**—Will any of your readers kindly tell me what Pine tree is considered the hardiest and best suited to a very exposed aspect quite close to the sea and facing the east? I should be glad also to know what shrubs do best for seaside planting? Are Phillyreas very hardy?—SUBSCRIBER.

3193.—**Striking Cuttings without a Greenhouse.**—Having no greenhouse, I have potted cuttings of Geraniums and Calceolarias, and distributed them throughout my house upon the window-sills. Will they do there? and if so, ought the windows to be left open daily? How soon ought they to be potted off singly into their own pots?—CHAPLAIN.

3194.—**Keeping Rain-water Good.**—I have two water barrels at the end of my cottage for the purpose of catching and storing the rain-water. The water, however, after a time gets very bad; a greenish slime gathers round the sides of the barrels, and laterly the water has become full of minute living forms. How can this be prevented?—J. B.

3195.—**Climbing Plants.**—Will any of your readers of experience tell me the names of some climbing plants (evergreen preferred) to grow round and to cover the uprights of a large summer house so as to shade from the sun, and also partly keep off rain?—P. P.

3196.—**Flowering Gladiolus.**—Will you or some reader kindly tell me how to make Gladioli expand the whole of their flower-buds at the same time? I have seen several lots of Gladioli, and they were one mass of fully expanded blooms from bottom to top of spike, the bottom blooms looking as fresh as the top ones. Mine (in pots), three bulbs in a 10-in. pot, have had splendid individual blooms; three bottom buds on each flower-spike expanded beautifully, and lasted three or four days, and then began to fade, and as they faded the three buds above them began to expand, and so on to the top of the spike. I never had more than three buds fully expanded at the same time on one flower-spike.—A LEARNER.

3197.—**Insects in Fern Cases.**—I find that some of my cases, although well ventilated, are ravaged by some small insect; I notice a very small cast on the surface of the earth. How can these be destroyed without damaging the delicate fronds?—J. F. M.

3198.—**Gloire de Dijon Rose Withering.**—I should be obliged if any one would tell me why the flowers of my Gloire de Dijon Rose suddenly wither without any reason before they are full blown. The tree gets sun most part of the day, and has no sign of insects or such like upon it.—BUTTERFLY.

3199.—**Tortoise Stove.**—Can any of your readers tell me from their own experience whether the smaller size No. 1 of the tortoise stove may be depended on to burn (with proper management) through the night, or nearly so, in winter?—A. B. G.

3200.—**Properties of the Auricula.**—I am grateful to "J. C." for his clear and valuable description of the essential points of a really good and correct flower. I, however, fail to comprehend the meaning of these words: "In the Alpine class the flowers have no paste." For the raiser of the Alpine Auricula Queen Victoria thus refers to that word, "good circular straw-coloured paste, bleaching to white," and the word is also used in the description of many other Alpine Auriculas. Perhaps you will allow me to repeat my question in part. What is the exact dividing line or difference between a "Self" Auricula and an Alpine Auricula?—BERG.

3201.—**Hardy Annuals.**—Will any reader kindly inform me what hardy annual seeds I can sow now for spring flowering in the open ground, having no greenhouse of any kind?—NOVICE FROM THE CAPE.

3202.—**Tea Roses.**—I have some Tea Roses in pots but they have been a failure this year. They are grown in the front room of the house and get the morning sun; no gas is burnt in the room, and they receive plenty of air, and are watered regularly. If any one can give me some advice I shall be very glad.—HOROLOGICAL.

3203.—**Gloire de Dijon Rose.**—"Hartside" says "Gloire de Dijon I should think one of the best wall Roses, though it needs special pruning to bloom well." Will "Hartside" oblige me by telling when and how to prune it? Is a different method of pruning required for each of the systems of growing it, viz., when on its own roots, or budded on the Manetti standard or seedling Brier stocks?—W. W. R.

3204.—**Cauliflowers in Covent Garden.**—Will any one kindly inform me the name of the large white Cauliflowers now selling in Covent Garden Market? and any hints respecting growing them in north Yorkshire will oblige.—J. D.

3205.—**How to Destroy Slugs.**—I should be thankful to know what is the most merciful way to destroy slugs and snails.—E. G. H.

3206.—**Plants for Baskets.**—I have a window facing due south which gets the sun from morning until evening every day, and would like to furnish it with hanging baskets. Will any one tell me what plants to fill them with that will bloom in winter? I should like them to trail down from the basket.—BUTTERFLY.

3207.—**Overgrown Wall Fruit Trees.**—Can any of your readers help me out of a difficulty with regard to two wall fruit trees of mine? The trees in question have evidently been left unpruned for two or three years, and the consequence is they have grown wild and possess very few side branches, whilst at the top they are covered with large shoots which overhang the wall. I do not know whether to cut the shoots at the top of the tree back to the stock, or to prune them off entirely by cutting through the stock just below them. The stock at that point is about 1¼ in. in diameter. If it is advisable to prune, when should it be done?—E. H.

3208.—**Winter Decorations.**—I want a plant (not flowering) to look fresh and green all winter for the table. Would the Golden Feather keep its colour?—B. B.

3209.—**Weeds on Gravel Walks.**—Will any reader kindly tell me a remedy for weeds on gravel walks? Refuse salt has been tried many times, but it only apparently kills the weeds, and they soon appear again stronger, and in greater numbers than before.—BUTTERFLY.

3210.—**Moving Apple Trees.**—Would it be safe to remove to another part of the garden a row of Apple trees about 9 ft. high which have been planted nine years, and have never been root-pruned? What would be the best time for doing it?—AVE.

3211.—**White Lisbon Onions.**—I have over 2 acres of Onions, the seed of which was purchased as White Spanish; they prove, however, to be White Lisbon, and although they are with this glorious weather swelling a good deal, very few will, I fear, be marketable. Will any one advise me what to do with them? If I trench them in will they be useful next spring as Scallions?—E. L.

3212.—**Cucumber Disease.**—Can any of your readers of experience in Cucumber growing give me the benefit of their advice as to the best course of treatment for the eradication of the Cucumber disease or murrain? I never saw it before I came into this part of England (Lincolnshire), and have now suffered with it for six seasons running.—K. W.

3213.—**Culture of Bouvardias.**—Will one of your contributors kindly inform me through the medium of your paper the best method of propagating and growing Bouvardias?—E. R. T.

3214.—**Window Plants.**—I am anxious to know what plants can best be grown in a window-box during the winter. Perhaps one of your numerous subscribers may be able to inform me.—A SUBSCRIBER.

3215.—**Climbing Red Tropæolum.**—"Heather" will be glad to know how the small red climbing Tropæolum which flourishes so well in Scotland can be cultivated with hope of success in a garden in the north-east of Somersetshire.

3216.—**Herbaceous Plants to Blossom in Autumn.**—"K. S." would be very glad if any one would give her a list of herbaceous plants to blossom in autumn. During the summer, a bed skirting the lawn at a distance facing south with high fence at back has been gay with Nasturtiums, Sweet Peas, Mignonette, &c., but now their beauty has gone, and the bed looks ragged and unsightly; therefore, "K. S." would be very glad if some one would tell her what plants could take their place.

POULTRY.

Remarkable Egg.—A day or two ago a buff cochin hen of medium size laid such an enormous egg, that I weighed it, and found it to be 5⅛ oz. As it was of an unusual shape (both ends being nearly alike), I wished to blow it, so as to preserve the shell. In pricking the ends for this purpose the needle came against a hard substance, and after blowing out the white and yolk, I chipped away one end, and found within a perfect egg with a very hard shell; this I have also blown to preserve it. The circumference of the outer shell is 7⅛ in., and 8⅜ in. round the oval. That of the inside egg is 5 in. and 5⅞ in. respectively.—A. Z.

Minorca Cock.—"Wood B.'s" Minorca cock to be a good one should possess the following points: Comb large, firm, and perfectly upright, of a bright red colour, and evenly serrated; ear-lobe pure white, and of a neat round shape; face bright red, instead of white, like the Spanish, and not so largely developed as the latter breed. His carriage must be bold, and tail large and full and carried very upright, with sickles well curved. Legs short and of a dark leaden colour. Prominent breast; short broad back; rather long neck, but well covered with hackle. The plumage should be entirely black with plenty of green lustre.—AUDALUSIAN.

Houdans.—"Constant Reader" will be wiser to depend on Brahmas for eggs in winter than on Houdans. The former are without doubt our finest winter layers, although they are run pretty close by the Plymouth Rocks and Dominiques. But Houdans are not, strictly speaking, winter layers; in fact, by many are not considered first-rate layers at any season of the year; but a great deal depends on the locality and conditions under which they are kept. Whatever breed be kept for winter laying, they must be young; old birds never lay well between moulting and spring time.—AUDALUSIAN.

Vermin in Fowl's House.—Use a quart of paraffin to a gallon of limewash, and apply to the perches under and over, as well as the walls, and scatter sulphur freely in the nests.—MAUD.

Ducklings going Lame.—Having purchased a number of ducklings this summer, I found after having kept them for a period of three months that two of them were quite unable to walk in any way; it is not the cause of any blow or any other wilful damage. The whole batch were in a state of good health and were perfectly strong when purchased. I would feel greatly obliged if any reader would give cause and remedy.—IGNORAMUS.

Broody Hens.—In answer to "J. H. B." I beg to say when my hens want to set I put them in a rabbit-hutch that I have for a few days; it is only 14 in. in height, so is a rather uncomfortable place for them, and I think stinting food keeps them on the alert.—D.

—— Keep the hen wishing to sit well away from her nest for two or three days, and if it can be arranged let her sleep out-of-doors for a couple of nights.—M. T.

BEES.

Taking Honey from Bees.—Last week I wished to take some honey from a hive we have left untouched the last two summers. I tried the plan of driving the bees. It was easily done, and in twenty minutes they had vacated the old hive without loss of bees or stinging anyone. The hive I found full of very thick comb, nearly black, and almost empty, excepting a few inches round the top, which was light, and contained about 2 lb. of good honey. The bees, in number about equal to two or three swarms, have settled in the new hive. Will some one kindly inform me if the comb is usually so dark and empty after a good summer? Ought the comb to be left the first season, as I have another hive and should like advice before disturbing them?—AMATEUR BEE KEEPER.

Starting Bee Keeping.—Would "Apiary" kindly tell me whether the present month is a suitable time to commence bee keeping? and whether, with the aid of a super, honey could be obtained this year (bee food being supplied)? also the average cost of hive and swarm?—KENSINGTON.

Hornet, Humble Bee and Wasp.—Cacynen, Gwenynen wyllt, Gwenynen meirch, are the vulgar Welsh equivalents to the above respectively; but in different parts of Wales they are known by other names, there being in the language nine different words to represent the same.—LLANILAR.

AQUARIA.

Aquarium Difficulties.—I am under an obligation to E. Step for replying to my inquiry. He asks if I am certain no other enemy was placed in my aquarium, and to this I reply in the affirmative—simply three river minnows and a few tadpoles. I had removed them into a bell-shaped glass from my largest tank, as I feared it was overstocked, and they had only been together for a day and a night. Had I introduced any insects or beetles I might have drawn my conclusion at once, as I had done on a very recent occasion, when I placed a great water beetle in its larvæ state amongst my favourite fish, which was attended with fatal results. May this be a caution to all keepers of the aquarium. With respect to the sticklebacks, they certainly travelled a long distance in a limited space, but were only confined for about 2½ hours, and when put into the large tank none of them had died in transmission, and for a few days seemed to thoroughly enjoy their new habitation, and then began to die off one by one, till now and since my communication was made they have all shared the same fate. As this is the fourth attempt at keeping these lively inhabitants of the water without success, it passes my comprehension where the direct fault lays, for they were fed frequently, principally with worms, an ample supply of vegetation was provided, and a fountain almost continually playing to keep the water fresh.—NEWT.

HOME PETS.

Cage Birds Out of Health.—I have kept, bred, and studied cage birds for the past fifteen years or more, and I have necessarily at times been somewhat perplexed as to what course to adopt when some of them have been on the sick list. Now one of the most troublesome complaints from which birds so frequently suffer, and which, unfortunately, if not taken in time carries off so many, is inflammation of the bowels. This may be caused from a variety of causes, viz., cold, through exposure to draughts, &c., eating stale or unsound food, drinking impure water, eating stale green food, &c. I have tried numerous remedies with very doubtful or partial results. During the present year, however, I have tried a (to me) new remedy, and proved it most effectual. I have this summer cured five birds, and my object in now writing is to ask "A. d'A." or any other correspondent equally interested in the feathered tribe, if they have not already done so to give it a trial, and let us know the result. Directly I see a bird sitting moping and all of a heap on the perch, I mix as much Epsom salts as will cover a shilling, magnesia to cover a sixpence, and carbonate of soda to cover a threepenny piece, each piled up, in about a breakfast cup full of water. I then give one half in the water glass, and if it is very bad I give the remainder the next day; if not very bad miss one day, and give the remainder on the third day with clean fresh water between, but in this matter I am guided entirely by the apparent severity of the symptoms, and continue this treatment just as long as requisite, that is, until the bird resumes its wonted sprightliness, which I have found to be in about four or five days.—F.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

NATURAL GARDENS.

RESPECTING the accompanying illustration, it is not necessary to write much, for the engraving itself teaches more than the pen can describe. It teaches us that in order to have a beautiful, natural, and enjoyable garden, we must neither have sharp edgings nor formal borders or beds, but a perfect harmony of luxuriant vegetation, which must be allowed to have pretty much its own way. It also shows us that arches of Roses over walks are among the many

A GARDEN OF ROSES AND HARDY PLANTS.

beauties of a garden when made in a proper manner. They are usually made about 4 ft. wide, the width of the walk, and 6 ft. or 7 ft. high. This is wrong. They should be at least 12 ft. wide at the bottom, and 8 ft. to 10 ft. high in the centre; there is then room for Roses or other climbers to extend themselves, and pruning and training become to a great extent unnecessary. We have seen such arches used with excellent effect over borders of hardy plants. The borders were, say, 6 ft. or 8 ft. wide, with a walk 4 ft. wide between them; at the back of each border a trellis 6 ft. high, covered with Roses, Clematis, &c., and from these trellises sprang arches at intervals of, say, 20 yards. These were covered with luxuriant Roses, Honeysuckles, Jessamines, Clematis, &c., and thus made a kind of covered way through the hardy flower garden.

ROSES.

SCENTED AND SCENTLESS ROSES.

Sweet-scented Roses.—Having ascertained that I had sixteen varieties of scentless Roses in my garden, I made out a list of these, and, at the same time, another list of the most popular kinds grown which really did possess the fragrance so much sought after in the queen of flowers. This list—in which the first thirty mentioned are those which, in my opinion, are superior in this respect—may be useful for the guidance of persons intending to improve or enlarge their collections. I have said nothing about the Moss, Provence, Gallica, or Tea-scented varieties, which are all more or less highly perfumed. Amongst the Tea-scented kinds, Maréchal Niel is decidedly the sweetest and most powerfully scented of all. My list embraces Hybrid Perpetuals only.

La France	Maurice Bernardin
Marie Baumann	Exposition de Brie
Alfred Colomb	Velours Pourpre
Sénateur Favre	Duke of Wellington
Monsieur Woolfield	Madame Victor Verdier
Louise Van Houtte	Le Rhone
Bessie Johnson	Leopold Hausberg
Souvenir de Julie Gonod	Madame Moreau
Madame Thérèse Levet	Mdlle. Julie Peread
Baroness Louise Uxkull	Jules Margottin
Duchess of Edinburgh	Duc de Rohan
Alexander Dickson	Mdlle. Marie Rady
Sénateur Vaisse	Princess M. of Cambridge
Duke of Edinburgh	Miss Laing
Pierre Notting	Madame Knorr

The above thirty varieties may be depended on as being amongst the most highly perfumed Hybrid Perpetual Roses in cultivation; the following are, however, little inferior:—

Madame de St. Pulgent	Dupuy Jamain
Duchesse d'Orleans	Baronne Haussmann
Souvenir de Spa	Gabriel de Peyrouny
Vicomte Vigier	Madame Clotilde Roland
Prince Humbert	Mdlle. Marguerite Dombrain
Abbé Girandier	Claude Levet
Madame Auguste Verdier	Felix Généro
Ferdinand de Lesseps	Anna Alexieff
Fisher Holmes	Alpaide de Rotalier
Annie Wood	Marguerite St. Amand
Charles Lefebvre	Semiramis
Madame Charles Wood	Madame Boll
Jean Cherpin (Bennett)	Prince Camille de Rohan
Emilie Hausberg	Madame Rousset
Cheshunt Hybrid	Gloire de Santenay
Camille Bernardin	Madame George Paul
Lord Clyde	Adolphe Brogniart
Captain Christy	Souvenir du Général Douai
Madame Marie Finger	Elie Morel
Madame Derreux Douville	Edouard Morren
Xavier Olibo	Beauty of Waltham
Duchesse de Caylus	
Leopold Premier	

Scentless Roses.—During the last twenty years a quantity of new Roses has been introduced into England from the Continent, most of them of the class known as Hybrid Perpetuals, and all remarkable for their sweet fragrance. Since 1869, generally known as Castellane's year, a change has taken place, and many of the Roses introduced since that time are entirely without fragrance. A large number of the scentless varieties, a list of which is subjoined, will be found amongst the finest exhibition Roses of the present day. Although, as regards form and colour, many of these are perfect, the entire absence of perfume is a great drawback, and the only way to get over the difficulty, when using them in a bouquet, is to place some highly-scented varieties amongst them. In giving this list of scentless Roses I may state that they have all been introduced during the last six years except one, viz., John Hopper, which came out about ten years ago; this Rose is scented, but so slightly as to be scarcely perceptible:—

Marquis de Castellane	Henri Ledechaux
Baronne de Rothschild	Marguerite Appert
Etienne Levet	Princess Beatrice
Comtesse d'Oxford	Etienne Dubois
Lyonnaise (Lacharme)	Madame Victor Verne
President Thiers	Mdlle. Eugénie Verdier
Princess Christian	Marquise de Chambon
Clémence Raoux	Princess Louise Victoria

H. T.

Planting Roses.—Those who wish to plant Roses, or add new varieties to their collections should lose no time in selecting the kinds which they require. In planting, use some good loam and rotten manure that have been turned over two or three times and thoroughly mixed, and also add one-fourth of road grit. See to Briers that have been budded this summer, loosen the ties if too tight, remove all suckers, shorten back any very strong growths that occur in trained Roses, so as to keep them symmetrical, and tie up growths from this season's buds, so as to save them from being damaged by wind.—G.

Autumn Roses.—At no season of the year are Roses more beautiful than in the autumn; in fact, the blooms of several varieties surpass in quality, if not in quantity, those of June and July, and notably those of such light kinds as Souvenir de la Malmaison and Acidalie, and of dark sorts, General Washington, the summer flowers of which are frequently imperfect. Many others among Hybrid Perpetuals, Teas, and Chinas also produce better blooms in autumn than in summer. The majority of our Roses are on their own roots, in beds or raised banks, on which the longest shoots of each year are pegged down, most of the old wood being cut out in winter. By this means we get an unlimited amount of bloom. There is one advantage in cutting the plants in early, and that is, they start into vigorous growth immediately they are relieved from their burden of flowers, and the lateral shoots of all the really perpetual flowerers yield a second crop in the autumn—in many instances, as I have said, superior to the first. Where Rose-buds are in request at this season, that beautiful variety Celine Forestier should be largely grown; with us it continues to produce its blossoms until the Tea Roses under glass are ready to furnish a supply.—J. G.

To Make Asphalte Walks. — For kitchen gardens, courts, or yards where a clean, smooth, durable path is an object, there is hardly anything better than asphalte when properly laid down. Weeds never grow upon it, which is a consideration; and every shower of rain washes it clean; it has no offensive smell after it has been down for a few weeks, and it will last under the usual traffic for many years. First of all, the walks must be set out and got in readiness, and then the ashes—usually plentiful about a garden—must be sifted. A 1-in. sieve or screen must be used. If the ashes be put through a wider mesh than this, they are too lumpy, and do not bind well; and if through a less, they contain too much small, and the cake is too soft and yielding. They should be thrown into a circular flat heap about 2 ft. deep when sifted, and the tar should be got and emptied over them at once—about as much as will soak them the first time without draining away to waste, which is a matter of judgment at the time. It is better to give too much, however, than too little, as what tar runs through can be ladled up and poured on again until the ashes absorb it all, which they take a little time to do. As soon as the tar has been emptied on, however, the heap must be turned at once, and turned again, mixing the wet with the dry ashes as the work proceeds, so as to soak up the tar as much as possible; and when finished the heaps should be thrown into a conical shape, and left to soak for about a week, when the ashes will appear much drier than they were when turned, in consequence of the tar soaking into the cinders more completely. This is the reason of applying the tar twice. If the whole be put on at one time, the half of it will run off, and after the ashes have been put on the walk they will dry and break up like a macadamised road in dry weather. The first dose of tar saturates the cinders, and the second makes them sticky. At the end of a week the second dose must be given, the heap turned as before, and again left for several days. The drainings may be poured back on the heap again, but if the tar persist in draining through, it is better to let it run away or use it on another heap, for the ashes must not be puddly or dripping with the tar, but, as we have said before, sticky only and no more, otherwise the walk will not set hard. When it is seen that the material is in this condition, wheel it off on to the walk and spread it about 4 in. deep, and level it as it is put on with the back of a rake, leaving an even surface, and taking care that the walk is slightly rounded towards the centre, in order to throw the water off to the sides. As soon as all has been put on, roll it with a wet roller two or three times, and keep the roller clean with a besom as it goes along. After this sprinkle the surface with gravel or spar put through ½-in. sieve so thickly as just to hide the asphalte, and roll again for three or four hours till it is quite firm, and continue the rolling for an hour or two every morning when it is cool, for three or four days. If the work has been done with ordinary care, the walk is fit for traffic as soon as it is finished, and is perfectly clean to the feet. If the gravel have been put on thick enough, it makes a clean, dry surface at once, and keeps its colour perfectly. Should more be sprinkled on than will roll in to stick, it can be easily swept off afterwards when the asphalte has fairly set. A walk finished in this way—and it must be sprinkled with something—has just the appearance of a gravel walk smoothly rolled. As regards edgings for asphalte walks, it is only necessary to plant the edgings after the asphalte has been put down and is set, and as the asphalte can be put down and rolled with the utmost exactness, the edgings can be planted close up to it.

A Rain-water Supply.—Valuable as may be a constant supply of rain-water, especially in a district where the earth water is scarce, there is one feature that would be to me very objectionable, and that is, the large quantity of dirt that must of necessity accumulate in underground tanks, in consequence of the frequent washings to which the house roofs are subjected. The evil is of small moment perhaps when rain is frequent, as is often the case in the autumn and winter, but after a long spell of drought we find that the house roofs become covered with dust, smoke, blacks, birds' excrement, and other elements of dirt, all of which the first rainfall washes into the tank, where in course of time it settles to the bottom, and forms a sediment of filth that must eventually contaminate the whole of the water, and be the greatest evil when the water gets low. It is impossible to avoid this result entirely, and it is equally impossible to filter the water in its passage in the tank, because rains are often so heavy that the attempt to filter them would doubtless result in a flood. One thing, however, could be done, and that is, an arrangement made by which the water falling on the roof during the first storm that came after a long drought, or the first portion of a storm, might be diverted into a drain or some other course until the roof was clean, and then it might be permitted to flow into the tank. If it is found needful to clean out an ordinary water butt or open tank every few months how needful must it be to do the same for a large tank that has been receiving water for several years. —A. D.

Substitute for Turf. — Lately, while walking through a suburb of a large town, I came upon a front garden so bright and fresh in comparison with others that it appeared like an oasis in the desert. The materials employed were inexpensive; indeed, much less so than those commonly used. I can understand and appreciate the love which the town dweller feels for a bit of green turf, but where the houses are crowded together it is difficult to keep turf in good condition. The substitute for it which I saw in this case, and which I can strongly recommend, was the well-known Creeping Jenny (Lysimachia nummularia). This grows wild almost all over the country. It thrives in Grass fields, creeping along close to the ground, and

only making its presence known by its bright yellow flowers when the grass is short or thin. It is equally at home on dry, sandy banks, or by the side of watercourses, with its creeping stems at times under the stream. It makes a close-growing carpet with but little attention, even in the smoky, murky atmosphere of large towns, and in such places for this purpose it is well worth more attention than it receives. In the case to which I am now referring it formed a green circular plot in front of the dwelling. In the centre of it was placed a good, bold mass of the old red Fuchsia gracilis, and the effect was quite unique. The other plants in the garden were in keeping therewith, as was also the house, which was draped with Veitch's Virginia Creeper, an exceedingly handsome kind, which clings to the wall with a tenacity that scarcely anything short of actual violence can disturb.—E. H.

House and Window Gardening.

Harvest Decorations.—At this season, when harvest services are being held, a hint or two on church decoration may prove interesting to some of the readers of GARDENING who are, perchance, about to lend their aid in such work. As a rule, much more attention is paid to the Easter and Christmas church decorations than to those employed at this season, and this I consider a mistake, as a far finer effect can be produced with the materials now available than at either of the above-named seasons. Hothouse flowers can be obtained, it is true, during even the coldest weather, and lovely bouquets and wreaths are made therewith at Christmas, but as fine effects can be produced at this season with golden Corn, fruit, and tinted foliage as it is possible to imagine. Where Corn is employed for plume-shaped decorations, Oats are by far the most graceful; but where sharp outlines are required I prefer Barley to Wheat, as it has a lighter effect. Letters for texts can be made of Barley or Wheat on a scarlet foundation. The prettiest plant for intermixing with Corn are trails of the bright-tinted Virginian Creeper, just now in perfection; for twining up pillars and round capitals no more charming plant can be found. If the sprays be light and liable to break they should be supported by means of a slight wire fastened at intervals along the stem. It is best, if possible, to place the end of the stem in a pot or some such receptacle filled with wet sand, as otherwise the leaves will droop and the whole effect will be spoiled. For smaller decorations tinted Vine leaves and odds and ends of tinted foliage too numerous to name obtained from hedgerows will be found most useful. In the way of coloured berries none will be found more desirable than those of the Mountain Ash, and I have used Hips and Haws before now with happy results. There are, however, many berry-bearing plants in perfection just at this season, and I have named the above merely as examples. With regard to flowers, we have at present large numbers, from amongst which may be selected the following, viz., Gladioli, Asters, Lilies, Hydrangeas, Roses, Dahlias, and Fuchsias. These are best suited for bold decorations, such as large crosses and devices for blank spaces on walls, and wreaths for pillars and window-sills, smaller varieties being best adapted for the decoration of the pulpit, reading-desk, or font. Fruit should always occupy a prominent place amongst harvest decorations; it looks well intermingled with flowers and foliage round the chancel or at the base of the pulpit. Amongst the smaller flowers some blooms of Cornflower should be obtained, if possible, as they are in keeping with the Oats and Barley.—A. H.

Cats in Gardens.—The following report of a case decided lately at the Greenwich Police-court may be of interest to your readers, and the magistrate's significant remarks will be, I think, instructive:—At the Greenwich Police-court, on Wednesday, Walter M'Laren Henry, of 1, St. Helen's Villas, Stanstead Road, Forest Hill, was charged on summons, by Mr. W. H. Sanders, with unlawfully placing poisoned meat for the purpose of destroying a cat. Mr. W. E. Benson, living two doors from the defendant, said that on Friday, August 20, he found his cat dead in the garden, having evidently suffered great pain. He wrote to the defendant, and he acknowledged having laid poisoned meat about to destroy cats, which were a nuisance to him, and destroyed his garden. A person living near had also lost a cat. For the defence it was urged by the defendant's solicitor that the cat was not a "domestic animal" within the meaning of the Act of Parliament when allowed to stray by night. Mr. Balguy remarked that Mr. Henry had brought it all upon himself by his excessive candour. He ordered the defendant to pay the cost of the summons.—ILLAWARRA.

FRUIT.

Wall Fruit Trees.—The season is now at hand when tree planting may be successfully carried out, and also when, owing to the trees being leafless, the walls may receive that attention of which they frequently stand in need. One of the first considerations should be a smooth even surface, free from nail holes or inequalities of any kind, as where these exist insect pests find shelter in them in winter, and are ready to recommence their attacks in spring. Old walls should be plastered and receive a good coating of whitewash, as it not only looks clean and sweet, but white has been proved by direct experiment to be the best ground colour on which to train the trees. I need scarcely remark that any trees infested with scale should be well scrubbed, taking care to save the buds as much as possible, and then painted with some strong insecticide. As regards the manner of training, I believe that the wiring system has many advantages, if the wires be properly fixed, so that the wood is kept close to the walls; but when the wires are stretched horizontally in any considerable lengths the strong branches draw them away from the walls, and consequently the benefit arising from the latter is lost. As regards borders, I am of opinion that most of our wall trees will grow well in any soil that produces good crops of vegetables provided the border be deeply cultivated at first and confined to the roots of the trees afterwards; or, if not the whole border, a wide alley, at least 4 ft. from the wall, should remain undisturbed and mulched during summer, and the remainder should only be employed for shallow rooting choice vegetables or salads. More attention should also be paid to the rotation of wall trees than that subject ordinarily receives, for if Peach trees have occupied a south wall for twenty or thirty years it is almost a waste of time and trees to suppose that merely trenching the border will supply their wants. No; they must have fresh soil, but in many cases the best course would be, as Peach culture under glass extends, to devote a larger amount of south aspects to the choicer kinds of winter Pears, such as Easter Beurré, Glou Morceau, Beurré Rance, &c. We have hitherto given winter fruits only a secondary position where they naturally only attain second-rate quality. East and west walls will bring to perfection most of our ordinary mid-season Pears, Plums, Cherries, &c., and north walls may be profitably occupied with Morellos and other Cherries, Currants, and dessert Gooseberries; but the south aspects should be devoted to the earliest Cherries, a selection of Peaches, Nectarines, and Apricots, and a choice collection of winter Pears. Space is too valuable to allow them to be trained horizontally; therefore, some of the many modifications of the upright cordon will be found an improvement, producing, as it does, speedier and better results.—R. J. G.

Male and Female Blooms of a Melon.

Late Plums.—Amongst Plums now in season I find Coe's Golden Drop and Reine Claude de Bavay to be the best amongst light-coloured kinds, and Coe's Late Red and Ickworth Impératrice the best amongst dark sorts. These form useful additions to the dessert where great variety is required late in the autumn. Many late Plums are only valuable on account of their late keeping qualities; but Coe's Golden Drop is one of the finest flavoured and best of all dessert Plums when fully matured.—J. G.

The Ribston Pippin Apple on Walls.—The finest and most highly-coloured fruits of this that I have seen were on walls in a fine kitchen garden in Pembrokeshire. Where this fruit is a favourite, as it so very often is, it would be worth while, even in the most favoured districts, to grow a few trees on walls, if only for the sake of having fruit of a somewhat different character from that on standard, espalier, or other trees.—V.

Male and Female Blooms of Melons.—We have often been asked by novices in gardening how the male and female blossoms of Cucumbers, Vegetable Marrows, and Melons can be defined. The annexed engraving answers these questions, perhaps, better than we could by the pen. The large bloom on the right with a embryo fruit at its base, is the female, which bears the fruit, and the small bloom on the left is the male, from which pollen must be conveyed to the female in order to insure fructification. During summer this work is performed by bees or other insects, but in the dull months of the year it must be done by the cultivator when both blooms are fully expanded. The male should be plucked off, the calyx split open by tearing apart the petals, and then, holding it over the female flower, tap it with the thumb-nail so as to shake the pollen into the female blossom, or the whole of the petals may be removed, the remaining portion being gently inserted into the female flower. A camel's-hair brush may also be used if prefered. First, gently insert it in the male blossom in order that the pollen may stick to the brush, then into the female blossom.

Transplanting Fruit Trees.—When the trees to be removed are close at hand, so that the roots need not be long exposed to the air, I consider October to be the most favourable month of the year for transplanting fruit trees, as the soil being warm, fresh roots are at once emitted, and the trees start into growth in spring without a check; but where they have to undergo a long journey by rail, it is better to wait until the leaves are off. Last season we removed several Plums, &c., that had been temporarily planted on vacant spaces, and the growth which they have made this year is unusually satisfactory. In preparing sites for stone fruits I would warn the inexperienced against an error commonly committed, viz., filling the trench half full o manure, with the view of giving the trees a good start; the result of this is gross, watery shoots, which, necessitating so much knife-work, eventually bring on canker and other evils, from which trees planted in sound loam generally escape.—J. G. H.

Cherries on North Walls.—It is generally supposed that a north aspect is only suited for the Morello Cherry, but this will be found to be a mistake, for my experience is that the May Duke has grown successfully upon a north wall. A really good ripe May Duke will fairly

bear comparison with any fruit, and no other of which I am aware will stand carriage so well without injury. It is a fruit for every one, and a tree for every vacant spot of wall of a few feet, be it north, west, south, or east; indeed, if a few May Duke Cherry trees be planted in each of these aspects, so much longer will be the season of fruit. It must be regretted also that in many gardens every variety of Cherry but the Morello is planted on one wall only. The extraordinary fine crop I have had this year on a north wall has induced me to advise others to give a part of "the Morello wall" to May Duke and Late Duke Cherries, for I began to gather the Dukes in June, and only finished last week, and the last batch might have remained a week or two longer on the trees. To grow May Dukes on north aspects successfully requires all the pruning to be completed in summer; winter pruning means gumming, and I find that as the soil keeps cold and wet, a good coating of old brick and lime rubble is a great restorative, and will well repay the labour and expense attending it. I would caution your readers against the mistake of planting any varieties of the Heart Cherry on north walls, for they will not succeed.—J. T., *Shrewsbury*.

GLASSHOUSES AND FRAMES.

Lobelias from Seed.—I cannot quite agree with "Saxon Deyne" as to there being no advantage gained by sowing Lobelias in the autumn. With plenty of heat they may be got into good condition if sown in March, but having this year tried sowing some at that time in an unheated greenhouse allow me to give my experience. The seed used was compacta Emperor William. It was sown in the middle of March, but did not come up for three weeks. The plants were just fit to handle at the end of April. They were put out in the ground in the second week in June, and began to bloom in the end of July, and are now in good bloom, owing to being backward and very small. When removing from the seed-pan three and four roots were put into one thumb-pot. These were plunged into Cocoa fibre, and are now good large clumps of bloom, but a little straggling. I am trying autumn sowing this year; have now some more forward than those put out in ground in June; am just about to prick them out into pans or boxes; shall pinch them back once or twice, and then hope to have good, bushy plants in blossom next May—a gain of two months' bloom, some slight advantage, I take it, besides having a more compact growth. May I venture to suggest to some of your correspondents that the information so kindly given and so extremely valuable would be much more so to many readers if they would kindly remember some of us—the readers—although dear lovers of our gardens and our flowers, have not always a supply of heat at hand, and consequently have to act accordingly.—T. C.

Large-flowered Jasmine in Autumn.—This is one of the most useful of indoor plants at this season. Its pure white, sweetly-scented flowers are invaluable in a cut state, and either in pots or planted out it flowers freely if liberally treated. It is now being largely grown by London florists for furnishing cut blooms during autumn and winter, and it is highly valued in the market. Plants of it, which are best obtained by means of layers, grow well in rich sandy loam and leaf-mould, or well-rotted manure, intermixed with a few pieces of peat to keep the compost open. It is called Jasminum grandiflorum.—C.

Wintering Pelargoniums.—As Pelargoniums still occupy a prominent place in the flower garden in summer, the question of how to store the requisite number during winter is an important one. There are still many who continue the old-fashioned custom of striking the cuttings in the open border, lifting them when well rooted and potting them in single pots, a plan which answers well where labour is abundant and space equally so, but I find that putting the cuttings into boxes about 4 in. deep, 2 ft. long by 1 ft. 3 in. wide, being space enough for about seventy-five cuttings, reduces the space required for wintering such material considerably compared with what is possible when the plants are potted off singly. There is, however, no question as to each plant in a single pot being the best for producing good-shaped plants, but when space is limited this cannot be done.—J. G.

The Scarborough Lily (Vallota purpurea).—This is one of the best of window plants and one of the most easily cultivated. If bulbs be procured now and kept gently growing on through the winter in any glasshouse or window, keeping them moderately watered and in a light position, they will, by next autumn, have made fine large flowering roots; then keep them rather dry for a time, but not sufficiently so to in any way injure the foliage, and fine large trusses of exquisite scarlet flowers will be the result. They will succeed well in 5-in. or 6-in. pots, and they do not require frequent repotting. Established plants which have done flowering should, during the next three months, be kept somewhat drier at the roots, yet, as they are an evergreen species, the soil must not be allowed to become completely dried up, or the leaves will flag, which will have the effect of causing them to turn yellow and fall off before their time, which would not only prevent their fully blooming the ensuing summer, but would also considerably reduce the strength and size of the bulbs. For single bulbs 5-in. or 6-in. pots are most suitable, or a 9-in. pot will hold four or five full-sized bulbs of Vallota that will continue in bloom for a month. Vallotas are readily propagated, the

Scarborough Lily (Vallota purpurea).

bulbs increasing quickly through the production of numerous offsets, which are formed every year at the base of the old bulbs; these, when about the size of large Peas, will have made two small leaves each and a small root or two. They should be placed eight or ten together in 6-in. pots, well drained in ordinary sandy loam, in which they may remain for a year or eighteen months; like the flowering bulbs, they must not receive so much water during the winter as in the growing season.

Wintering Plants of various Kinds.—Those plants that have stood in pits where the lights can be taken off in the daytime should be kept under such conditions so long as they are safe from frost, for cool treatment of this description is best calculated to bring about a desirable cessation from growth and to aid in ripening the wood. In the southern parts of the kingdom and on the coast, where frosty nights do not usually occur until later, it is not requisite to take the plants in so soon as in less favoured localities; this, with the appearance of the weather, will point to the necessary time for getting everything where it will be secure for the winter. On fine autumns, where a few loose lights could be placed over them to ward off heavy rains, I have kept Heaths out till October was far advanced, and where there is the means of giving them this slight protection they are better out, especially where Heaths have not a house to themselves, but have to be accommodated along with other plants that need to be kept a little closer. In getting plants into their winter quarters it is necessary to proceed systematically, placing the different kinds in the positions best suited to them, such subjects, for instance, as Azaleas and Epacrises with any other hard-wooded greenhouse plants that form their bloom-buds in the autumn, and whose shoots are quite or all but dormant through the winter, although in common with all others of a kindred character, are benefited by a situation in which they will receive a full volume of light; yet where the entire stock cannot be so accommodated they will do standing under worse conditions in this respect than any plants whose shoots keep on growing slowly throughout the winter, and the flower-bud development of which takes place wholly during the winter months. Heaths, with the exception of a few varieties, make no shoot growth in the winter; still it is during this time that almost the whole of the flower formation is going on, and on this account they cannot be kept too near the glass in the best house that can be afforded them. Pelargoniums, though totally different from the last named subjects, making as they do the greater portion of their shoots in the winter and spring, need to be under the full influence of light. Kalosanthes (Crassulas), now not near so much cultivated for general decorative purposes as they deserve to be, although they make comparatively little shoot extension in the winter, yet usually bloom much more profusely when placed where their heads will be within a few inches of the glass from this time until spring. Late-flowering Camellias and any of the Citrus family will do now for some months with comparatively little light. I particularise these things with a view to its being of some use to amateurs and beginners in plant cultivation, who will find it much more convenient and conducive to the well-being of their plants to consider the respective requirements of the different subjects they have to deal with, and thus at the present time put each in the most suitable winter quarters, so that there will be no necessity to again upset the houses by making any alterations in the positions the various plants occupy. In most places, large or small, such a number of plants have to be wintered as makes it necessary to place a portion under less favourable conditions than they would be subjected to, were there alike room to treat all in the most desirable way. Yet much may be done with a mixed collection of plants to bring them successfully through the winter when the requirements of each are considered; the reverse of this is often observable when at the time of housing they are crammed in anyhow by mere haphazard. Another matter essentially necessary at the time of getting the plants in is to see that all are free from insects, such as aphides, thrips, and red spider, for though these will not for some months increase nearly so fast as during the spring and summer, yet affected plants communicate them to others that stand near, on which they remain in a more or less dormant state, ready to increase in vast numbers at the return of the growing season, when the softer condition of the plants makes it much more difficult to deal with them, entailing a correspondingly greater amount of labour.—H.

HOW TO GROW ACHIMENES.

As this is the time when these beautiful summer-flowering plants are dying down, it affords a good opportunity of giving some instructions as to their culture, as to those who already possess a supply of bulbs the present may be termed the starting-point for another year. Those who do not possess bulbs may wait till March, and then follow the directions given below.

The value of Achimenes to those having only a limited amount of plant room, and who are nevertheless desirous of making a rich floral display during the summer months is, that they die down and require no care in the winter beyond being stowed safely away out of reach of frost, wet, or rats and mice, which feast on the tubers. Another merit of Achimenes is, that they require no expensive stove-house or similar structure in which to grow them, as they will do equally well, indeed better, in any hotbed, pit, or frame, such as is usually made up for Cucumbers, Melons, &c.; while later on they may be grown without artificial heat if advantage be taken of sunshiny days to shut them up early and secure the requisite warmth in that way.

In Baskets.—Beautiful as Achimenes are when grown in pots in window recesses in rooms, or for the embellishment of greenhouses, they

are even more so when suspended in baskets, for which work their habit renders them peculiarly adapted, as they droop over in the most graceful manner possible, and show off the flowers with which they are laden to the greatest advantage. In pots they require stakes to support them, but in baskets few are necessary, as they generally present a more effective appearance trailing naturally over the sides; and the less formal they grow the better they look. The baskets in which I grow them are basin-shaped, made of galvanised iron wire run round a frame made of the same, a trifle larger in size, and bound tightly together, which any handy man can do. These are then lined with rough Moss and filled up with the same kind of soil as recommended for the pots, and the plants afterwards ranged regularly around the sides by making holes with the finger between the wires in which to insert the roots, after which they should be hung up in any warm house and kept well watered and syringed till they begin to show bloom. By starting some in March and others at intervals of a month or so till the end of June or middle of July, a constant succession may be maintained till quite late in the autumn and far on through the winter, by adding A. picta to the collection. Whether grown in baskets or pots, it is a great saving of space to start a sufficient quantity of each kind in separate pans or pots, and afterwards to divide and transfer them to the positions in which they are intended to flower.

In Pots.—A hundred tubers will be sufficient for ten 6-in. pots, which are the best and most useful sizes for room decoration or ordinary purposes; but if larger be required, a few more plants will be necessary to fill them. They may be started into growth in any small pot or pan in finely-sifted leaf-soil and sand, in which they should be allowed to remain till they get 1 in. or so high, when they may be taken out and carefully separated for potting or putting in baskets. Owing to the great quantity of water they require when growing, the pots must be well drained, which should be done by filling them up to a third of their depth. The next operation is to cover the potsherds with a few half-decomposed leaves, rough fibry peat, Moss, or any similar material, in order to prevent the soil blocking them up.

Soil and Potting.—The best compost for Achimenes is a mixture of rough fibry peat and loam or leaf-soil, and the latter in the proportion of one of loam to two of peat or rotten leaves, in either of which the plants greatly delight, adding just sufficient sand to keep all open and porous. In potting, they should be placed at equal distances apart and the roots covered loosely, but not in sufficient quantity to fill the pot, as they make better progress if afforded a top-dressing later on when they get into growth and begin to form fibres around their stems, a little fresh soil at that period becoming of the greatest assistance to them. After the potting has taken place, they should again be placed where they can enjoy a warm temperature ranging anywhere between 55° and 65°, with plenty of moisture in the atmosphere, and in such a position as to be near the glass exposed to the light to keep them from drawing. The degree of heat above-named is the minimum they will endure or ought to have early in spring, but if more can be afforded with a proportionate amount of humidity, they will grow all the faster and come earlier into bloom. Although Achimenes require a moderate amount of heat and a moist atmosphere while growing, they will endure any ordinary greenhouse temperature during the summer, and if kept well watered they will last a long time in perfection.

Shading, &c.—Although Achimenes will endure all the sun we get up to the end of April, they will not do so afterwards, as they are naturally shade-loving plants; and it is therefore necessary to throw a mat over them to screen them for an hour or two in the hottest part of the day during the height of summer, or whenever the sun's rays are full upon the glass. At that season any cold frame, having a few leaves in which to plunge them, or a firm bed of ashes on which to set them, answers admirably, as in such a position they can be treated more in accordance with their requirements than they could be elsewhere among other plants. A heavy syringing overhead both morning and afternoon, or a gentle bedewing through the rose of a watering-pot during dry weather, so as to thoroughly moisten their foliage and the material in which they are plunged or on which they are placed, is the course of treatment to pursue while they are growing; and to assist them in their development the house should be closed about three o'clock in the day, in order to take advantage of sun-heat.

Staking.—The necessary staking and tying should be done before they become too advanced, or the blooms get damaged during the operation, besides which their fragile stems are not sufficiently stiff and strong to remain erect after they have attained a height of 6 in. or more. The neatest and best stakes are the long, twiggy prunings from Privet hedges or bushes, which should be cut at once and tied tightly up in bundles and laid by till required. They then become hard and almost as stiff as wire, and, being nearly the same colour as the stems of the Achimenes, they are scarcely observable, thereby removing to a great extent the objectionable appearance which stakes among pot plants generally present, and as the plants require one to each main stem deal sticks would be much too obtrusive, and quite spoil their attraction.

VEGETABLES.

Celery Culture.—I grow Celery as a general crop, and it may interest some of your readers to know how I produce a superior Celery. I sow for general crop in the last week of March, sowing the seed in a box or pan in a gentle heat. I transplant the seedlings when strong enough on a prepared bed or old manure heap 3 in. apart, taking care to give plenty of protection from slight frosts and cutting winds. They grow and get hardened off until planting-out time, which is generally about the second week in July. To bring Celery to perfection it must be grown as rapidly as possible, and on no account should the plants be allowed to get starved or checked. I generally plant in single rows, 3 ft. apart, in trenches 1 ft. deep, with several inches of rotten manure in the bottom, planting the plants 6 in. apart in the row. I never on any account earth up Celery until it gets well established, nor when the plants and soil are wet. When earthing up great care must be taken to prevent the soil getting between the leaves. Some tie it up previous to earthing, which answers very well. Last year we were troubled with the maggot, and I have tried several plans of stopping its ravages. I found nothing to equal dry soot dusted well in amongst the plants every night and morning whilst the foliage was wet.—Kirkton.

Group of Achimenes.

Trenching Vegetable Ground.—Deep stirring of the soil is one of the most important points in vegetable culture. There is no soil that cannot be improved by it, but its effect will be most noticeable on cold, heavy clays. In all such soils there is a vast mine of fertility locked up that only requires to be judiciously worked to have a marked effect upon the crop. During autumn and winter every half-hour that can be spared should be devoted to this work. Cleanliness and surface-culture of the soil are to a certain degree effective in the development of plants, but without deep stirring the land will not produce to the full extent of its capability. Moisture is one of the greatest essentials in the cultivation of succulent vegetables; and probably if our springs and summers were universally hot and dry, the importance of deeper culture, as one means of attracting and retaining moisture in the land, would be more generally recognised. At present, when a dry, hot summer comes, and plants are perishing from drought, it is found convenient to ease our minds by throwing all the blame of indifferent crops upon the weather instead of trying to ascertain whether the system of culture adopted was the most suitable to our climate. In trenching land where the subsoil is very inferior, probably in extreme cases some injury may have resulted from bringing up too much of the crude, inert soil from below to the surface. All clays are retentive of moisture in wet seasons, but they often crack and part with it too rapidly in dry, hot summers. Now all this may in a great measure be improved or counteracted by deep culture. The drainage in wet seasons would be more effectual, and in dry weather the advantages of deep culture would be twofold—there would be greater facilities for the plants striking their roots downwards, and the loose subsoil would encourage the ascent of moisture from the water bed below on the principle of capillary attraction. On wet lands, wherever artificial drainage may be necessary, it should always precede all other measures for ameliorating their condition. A test hole 3 ft. or so deep will readily tell if artificial drainage be necessary. If water stands in the bottom of the hole for any length of time at any season of the year, the drainage is certainly imperfect. In dealing with a bad subsoil, it will be better to try and improve it without bringing any to the surface. This can most effectually be done by removing the top spit, as in bastard trenching, and then digging or forking into the bottom any fertilising substance, such as manure, ashes, road scrapings, or burnt earth—anything, in short, that will tend to open up and disintegrate the crude mass. In this way a steady improvement will go on; air and water will percolate through it more readily, rendering its mineral constituents more soluble and suitable for plant food, and in the course of time portions of it may be brought to the surface and still further improved by exposure to the frosts of winter.—E. H.

Johnstone's St. Martin's Rhubarb.—This is a very fine variety, strong in growth and excellent in flavour, not being nearly so acid as some varieties. I would strongly recommend those who contemplate planting Rhubarb during the ensuing season to include this as a standard variety—good for all purposes.—J. G.

Cabbages for very Early Use.—With spring Cabbages, earliness and tenderness, the result of rapid, unchecked growth, is preferable to mere size. In fact, few people care about a very large Cabbage at any time, as, according to my experience, size is generally obtained at the expense of delicate flavour. Now everybody has warm corners about their premises somewhere, or can easily extemporise some shelter. Into one of these warm spots dibble a quantity of Atkins' Matchless Cabbage, 6 in. or 8 in. apart each way; have as much depth of soil as possible, keep the surface freely stirred as often as it happens to be dry, and after Christmas, just when they appear to be folding up their leaves to form a heart, give one or two good soakings of liquid manure or house sewage.

This crop, of course, is only intended for the first cutting, and as fast as they are cut the stalks should be pulled up, and the ground prepared for some other crop that will appreciate the warm position better than the Cabbage will when the hot days in spring arrive. A very large number of dishes of sweet early Cabbages may be obtained from a small space in this way. There is yet time to plant out a batch, although it would have been better done last month.—E. H.

Blanching Late Celery with Spent Tan.—The soil of my kitchen garden is very strong and retentive, and I have great difficulty in keeping late Celery from rotting during the winter months. Of late years I have used old spent tan principally for earthing it up, and find it to be one of the best materials yet tried, both for keeping the plants free from slugs and from severe frosts. During winter, when there is much rain or snow falling, I have wooden coverings placed above the plants to throw the water off the rows; these coverings are formed of old slabs or planks of little value, and are nailed together in the form of a span roof, and sufficient space must be left below the covering to give the plants plenty of air. To obviate blanching the plants too much near the surface, these wooden coverings must only be kept on during very severe frosts, or heavy falls of rain or snow.—W. T. W.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 4.—Potting up Carnations and Pinks; also Pelargoniums from flower borders, likewise old plants of Centaurea—potting hard and watered well first time; putting Purple King Verbenas into cold frame; placing all Strawberry plants in pits under cover; inserting Calceolaria cuttings; planting Hyacinths and Tulips in open borders; planting Peach trees; pricking out frames of Cauliflower plants; tying up Endive; gathering Beurré d'Aremberg and Winter Nelis Pears, and a few of Knight's Monarch; making border ready for Cauliflowers; rearranging drainage, and top-dressing Roses in pots after removing as much as possible of the old soil; giving bearing Cucumbers a top-dressing of loam and manure; bearing borders from dead or bad-looking stems of herbaceous plants; putting lights over scented-leaved Pelargoniums, Violets, and a bed of Mignonette.

Oct. 5.—Potting up plants of Echeveria glauca, and putting them in the greenhouse; placing a few of the most forward Cinerarias in heat; planting Cabbages for spring 6 in. apart in the rows, so that part can be taken up in spring to make another bed; making up failures among spring Lettuces; planting Cauliflowers under hand-glasses; taking off Chrysanthemum layers.

Oct. 6.—Potting Forget-me-nots, also Schizostylis for winter flowering; taking in Chrysanthemums; taking up some of the most forward Cauliflowers and putting them into a trench for protection; planting Stephanotis in small bricked bin; pricking out a bed of Cabbage plants to remain until spring to be then planted permanently; taking up Beetroot.

Oct. 7.—Plunging Stocks in cold frame; planting Wallflowers in flower-beds, also Aubrietias, Arabis, Pansies, bulbs, Feverfew, and Cerastium; tying Chrysanthemums, also more Bath Cos Lettuce; bending leaves over Cauliflowers ready to cut; beginning to nail wall trees; gathering the last of the Apples, Nonpareils, and the last dish of Plums; roping Onions in wet weather; earthing up July-sown Cabbage.

Oct. 8.—Potting off some herbaceous Calceolarias; re-arranging Odontoglossum house; planting Gooseberries and Currants behind north wall; nailing Currant trees, &c., on north wall; also Gooseberries; cutting Marjoram, and placing it where it will dry; digging vacant ground; pruning Cotoneasters on walls.

Oct. 9.—Sowing Mustard and Cress in boxes under cover; potting second batch of Hyacinths; taking up Lettuces and putting them in pit; taking up all bedding material that is to be saved; planting fruit trees consisting of Peaches, Nectarines, Pears, Apples, Plums, and Cherries.

Flower Garden.

Owing to falling leaves, worm-casts, and decaying flowers it is now difficult to maintain neatness in ornamental grounds, but as no enjoyment can ever be derived from an untidy garden, an effort should be made to do so. The scythe, lawn mower, roller, and broom will need to be kept going daily, and though the ground may not continue long tidy, we shall have the satisfaction of knowing that we have done our best as far as endeavouring to maintain neatness is concerned. Tender plants that are to be preserved for stock another year, and which cannot yet be lifted, ought to be covered up with some light material every night; tiffany, hexagon netting, or Frigi Domo, are all excellent materials for the purpose. The propagation of plants for another year will still require attention; of course all the more tender kinds ought to be in safe quarters, as frost may visit us at any time. Calceolarias and Violas will now strike freely and winter well—indeed best—in a cold frame. Hardy plants may be divided and pricked out on a dry bank. Mentha Pulegium gibraltarica may thus be safely wintered, but if left thick on the ground as it now stands it will succumb to damp, as will also Cerastium tomentosum and C. arvense. Contemplated alterations and improvements may now be carried out. All such works should be taken in hand early in autumn in order that they may be completed before the busy spring time interferes with their further progress. Walk making, turf laying, and levelling, draining, grubbing, and trenching, and shrub and tree planting, are some of the operations that are best and most conveniently done in the autumn and winter.

Auriculas.—If either seedlings or named varieties growing well are in pots that are not considered to be large enough for them to flower in, they had better be potted, although it is getting late in the season for that to be done. Such late-potted plants should, however, have no surface dressing in February. We find slugs very troublesome, and the only way in which they can be destroyed is taking pains to catch them at night by lamplight. Seedlings are now coming up rather freely, and it is necessary to be careful with regard to giving water; just allow sufficient to keep the soil moist. Many keep their plants on a cool bottom during the summer, but this is just the place in which worms are likely to get into the pots. If worms do get in, the best plan is to turn the plants out and search for them. It would be much better for the plants to shake all the soil from their roots than it would be to allow the worms to remain in the pots.

Carnations and Picotees.—No time should now be lost in getting off layers and repotting them. See, too, that slugs are not allowed to prey upon the leaves of those that have been layered in the open ground; the leather-coated grub also eats the leaves greedily, and should be looked for at night. Tree Carnations now require considerable attention; the plants must be removed under glass, and the stems carefully tied to sticks. Those that have not been repotted should be seen to at once. It is easy to err on the side of too large pots. A very large plant can be grown in an 8-in. pot, and such a plant will produce a very large quantity of flowers. When the pots are well filled with roots, and it is seen that the plants lack vigour, weak manure water can be supplied to them—say about once a week.

Hollyhocks.—Seedlings may be planted out in their permanent quarters, but before doing so see that the ground is in good condition. Perhaps there are few plants that can assimilate so much gross food as the Hollyhock, and to have good results from seedlings the ground should be deeply trenched, and have at the same time plenty of rich manure worked into it. When the spikes are exhausted they may be cut over near the ground, and the roots may be lifted at once, or allowed to remain for a few weeks as it may be convenient. The commoner varieties can be planted out close together in a frame, but scarce, choice sorts had better be potted for the convenience of placing them in a warmer house early in January, with the view of obtaining cuttings from them. Until that time they may be kept in a cold frame.

Pansies.—If it is intended to flower any of these in pots no time should be lost in getting them potted into 3-in. ones. Place them in a frame quite close to the glass, and draw the lights off them both day and night, when the weather is favourable, as the heavy dews on calm nights are beneficial to them.

Glasshouses.

Cool Orchids.—Odontoglossums will, as a rule, need to be treated in accordance with the state of growth they are in. Although plants that do not require nor can bear drying at the roots to the extent that many species will, even when their growth is finished, still they are better with their roots in a drier condition than when active growth is going on. Let those that are in full growth have sufficient root moisture, with enough air to keep the atmosphere of the house fresh and sweet; the ventilators, or other places where air is admitted, should be closed on all nights when there is a likelihood of the temperature running low, as although these plants will bear all but being frozen, still no possible good can come from subjecting them to such treatment at any time, and more especially whilst growing. Masdevallias, Epidendrum vitellinum, E. auranticum, E. erubescens, such Lycastes and others as are grown in the Odontoglossum house, will in cases most be benefited by now being kept at the warmest end and supplied with root moisture in accordance with their more or less advanced state of growth. Shading should now, so far as possible, be dispensed with, only running down the blinds when the sun happens to be bright. Where the Odontoglossums are grown in a lean-to house with a north aspect there will be no further need for any shade at all.

Ferns.—In the case of Ferns, as with other cultivated plants, in addition to the vigilance necessary to check the quicker breeding kinds of insects as they make their appearance, such as aphides, it is well from time to time to go over all the occupants of the house to free them from any of the more persistent species like scale, mealy bug, or thrips; and if at the same time all unsightly fronds are removed, and the pots washed clean, it adds much to their appearance. It is through the dormant season now beginning that insects of all kinds can best be got under with a view to reducing the labour necessary to keep them down whilst the plants are in active growth, at which time insect life is also most active.

Filmy Ferns.—To those who have not had any experience in the cultivation of these plants it is necessary to point out that although nearly hardy their nature is such as to render their existence impossible where the atmosphere that surrounds them is not to a considerable extent saturated with moisture; consequently it is useless attempting to grow them in frames along with other plants, as it is needful to keep them all but closed with a view to avoid the drying influence of the external air. They must always be kept moist at the roots, and the bed of coal ashes on which the pots during the summer ought to stand, and in winter be plunged, must likewise be kept moist. The light also needs to be much subdued by tolerably thick shading when the sun comes at all upon the glass, as well as smearing the glass with thin green colouring during the summer months. If grown in a greenhouse with other plants they should occupy the most shady position in the house, placed on the floor enclosed within an ordinary frame or glass case made for the purpose, and also shaded when the weather is such as to require it. Single plants of Todeas, the hardier Trichomanes, and Hymenophyllums, do very well in rooms where little fire is used, especially near windows with a northern aspect, as a matter of course covered with bell-glasses, or in glass cases, and kept moist. So treated, with the little attention which they at all times require, they will go on increasing in size for many years, and are most interesting.

Fruit.

Gathering Fruit.—The harvesting of Apples and Pears now requires daily attention; our rule is to devote a couple of hours every fine afternoon to such work, carefully examining every kind, and gathering only those that part readily from the tree, or that the birds or wasps have attacked, the latter especially being no mean judges, both of quality and maturity; the birds are not such infallible judges, for tomtits will attack all and sundry, if left unmolested, so that the birds must either be destroyed or the fruit must be netted up. Pears have increased in size marvellously during the last three weeks, and the latest kinds are still swelling fast, so no undue haste should be made to gather them; indeed, most of them will need to be left on the trees till there is danger of injury from frost.

Surface Dressing Fruit Trees.—As soon as the fruit is gathered all trees that have borne heavy crops or that seem weak from exhaustion should have the surface soil cleared away from about the roots and replaced with fresh compost, consisting of loam, with a slight proportion of lime scraps and charcoal intermixed, the whole to be made firm about the roots, and then mulched with good stable-yard

manure. If such dressings could be given to free-bearing fruit trees every autumn we should have little cause to complain, either of size or quantity of fruit; this at least is our experience, for on trees that have been regularly dressed we have never yet failed as regards having plenty and fine fruit, and the present unfavourable season is no exception to the rule.

Root Pruning.—This month is the best time to root-prune all trees that require a repression of growth, in order to make them more fruitful. Young trees that have not been planted more than three years had best be lifted entirely; their strong roots should be shortened back, and any that have been injured by digging them out should be cut clean off. The trees should then be replanted in the same soil. Large or older trees may have their roots bared, a trench cut out a few feet from the stem, and all the roots met with in the trench cleanly cut off, after which, re-fill the trench, ramming the soil as firmly as possible, thus causing a certain amount of resistance to be encountered by the roots, which will conduce to the formation of numerous small branching rootlets that are of much more importance than strong nonlateral roots.

New Plantations.—For any new plantations that are to be made, the ground should first be thoroughly drained, and in heavy retentive soils each tree should have a few inches of additional drainage in the form of brickbats, charcoal, and mortar rubbish. Of course, on gravelly or sandy subsoils such drainage is not required, and the trees may be planted level with the ground-line, but on heavy soils a slight elevation or mound is desirable. If the weather be favourable and the ground in good working order, the end of the present month is the best time for planting all the following kinds of fruits, viz., Apples, Apricots, Peaches, Pears, Cherries, Plums, Gooseberries, and Currants. Clear runners off old plantations of Strawberries, lightly point over the surface-soil, and re-dress with good rotten manure. Young plantations should also be kept clear of runners, and those that are fruiting should be carefully protected from heavy rainfalls by means of handlights or frames. The plants of Vicomtesse Héricart de Thury that were planted out after forcing are now fruiting as freely as at the proper Strawberry season.

Lawns, &c.—Grass seeds should be sown at once on bare places or where the sward is thin and poor, choosing dry weather for the work; the quantity sown may be from one to two bushels per acre; in the case of bare places the surface should be broken up about 1 in. deep, adding soil if necessary where the Grass is weak; a dressing of rich soil will be very beneficial; after the seed is sown the surface should be thoroughly bush-harrowed and finally rolled. A dressing of soot, salt, and lime during the month will greatly assist in destroying injurious insects and act as a fertiliser. This work will be especially necessary upon cricket and croquet grounds which have been much used during the season. Where very large spaces have become bare, turfing is the most desirable and expeditious method of dealing with them. The advantage gained by doing this work at the present time is that should we experience a favourable winter the Grass will be stronger and therefore resist wear in a greater degree than if done in the spring; during the operation Grass plots should also be freed of weeds as far as possible.

Shrubbery.

The month of October is an excellent time to commence the rearrangement of shrubs, a work which becomes periodically necessary in consequence of some varieties overgrowing others, over-crowding, losses, and other causes. Care and judgment must be exercised in order that a natural arrangement may be maintained, mixing the various kinds of foliage harmoniously, and having special regard to the different heights the shrubs are likely to attain. Should we be fortunate enough to have fairly dry weather during October and the early part of November, the soil will work very much better than later on in the year; nor are we likely to have very hard frosts during that period. If ordinary care be exercised not to injure the roots, and the shrubs are planted immediately after being taken up, they will in no way suffer from the effects of transplanting. New subjects may be added as required at the same time. Advantage of the season should also be taken to commence preparations where it is intended to form new plantations; the sites for these should be trenched not less than 3 ft. deep, taking care that the bottom of each trench is well broken up. By so doing, great benefit will result to trees and shrubs; it assists drainage and allows the roots to descend freely. Generally, however, the sites for plantations are more or less raised by carting soil upon them, in which case deep trenching is unnecessary. The surface should always be broken up before placing the soil thereon. Where the soil is very poor, manure should be trenched in or mixed with the soil; the manure must not be buried too deeply, 6 in. beneath the surface being quite sufficient, as it should be borne in mind that the benefit is derived from its gradual decay, the soluable portions being carried down by rains to the root in a condition most suitable for its absorption, whilst it maintains the surface in an open and healthy state.

Autumn Crocuses.—The beautiful autumn-flowering Crocus (C. nudiflorus) forms at present quite a gay feature in some nurseries, the beds in which it grows being nearly solid with bulbs, the flowers of which are large, bright purple in colour, and borne well up above the ground. This Crocus likes a rich, sandy soil, and is, I believe, the earliest of the autumn kinds, those which follow being C. speciosus, a lovely free-flowering variety; a little later in the season this is succeeded by C. autumnalis and C. sativus, and still later come the bright and charming little orange-yellow flowers of C. Aucheri simultaneously with those of C. Sieberi, which has purple flowers. The two latter species often continue flowering onwards through the greater part of the winter months when the weather is open and mild. —P.

Violets.—That very fine Violet Victoria Regina is now blooming freely with me, and promises to do so as long as the weather remains open. It is decidedly the best of all the single sorts; it is as much in advance of the Czar as that variety is ahead of Devoniensis, whilst it is inferior to none in colour or perfume. Each flower is about as large as that of the common single Russian, and it is not less floriferous. Grown in a sunny, exposed situation, it does not run too much to leaf, and if the soil be good, it produces a mass of strong crowns that are full of buds. Having just lifted a number of strong plants of this Violet to bloom under glass during the winter, I have taken off all the side shoots and dibbled them thickly into a bed. These will root well during the winter, and, if planted out afresh with more room in the spring, will grow into large, robust plants for the succeeding autumn. Violets of all kinds are now blooming more or less, a circumstance doubtless owing to the heat of the past summer having forced the plants on with more than usual rapidity. The autumn rains, too, by cooling and moistening the soil, have no doubt imparted to it some of the characteristics of spring. Both the double blue and white, double red, and the Neapolitan are blooming in the open ground more or less; also the Russian market Violet.—D.

Planting Hardy Plants.—This is a good time to plant most hardy bulbs and herbaceous plants, and what cannot be planted then should be left till spring, except bulbs, which may be put in any time during the winter or early spring, when the soil is in a fit state. Nearly all herbaceous plants grow and increase fast in ordinarily good soil, and it is not therefore necessary to plant large pieces at first, unless the stock is abundant. Small pieces, with a good root or two to them are sufficient, and will extend a great deal in a single season. All digging and manuring should be done in November, after the decaying stems and leaves have been removed. If the work be delayed till midwinter there is danger of injuring any bulbs which may be coming up. A steel fork should be used on all occasions, but after digging and dressing are finished, nothing but a Dutch hoe should touch the ground. Herbaceous plants generally thrive best in a rather light, rich soil; consequently the best manures are leaf-mould and sand for heavy soils, and decayed hot-bed or well-rotted stable-yard manure and refuse composts from the potting bench when the soil is rather poor.—W.

Early-flowering Chrysanthemums.—These, though inferior in size of bloom and variety to the later-flowering kinds, are, nevertheless, well worth attention where a succession of bloom is desired. Large beds of them have been in great beauty for many weeks past in London gardens, and will in all probability continue in that condition for a long time to come. The plants do not grow more than 2 ft. high, are of a free, branching habit, and produce blooms in great abundance. The principal varieties are Madame Picœul, Precocite, indicum nanum, and Frederick Pill.—S.

Lobelia fulgens as a Bedding Plant.—We find the red-leaved variety of Lobelia fulgens to be the best autumn bedding plant which we have. Its reddish-brown leaves look well in summer, and it is now a mass of brilliant scarlet and brown, a condition in which it will probably remain to the end of October, or even later should the weather be favourable.—C. M. O.

Fuchsias amongst Ivy.—As the cultivation of the Fuchsia involves little or no trouble, there is really no reason why sorts that are of robust habit, free blooming, and fairly hardy might not be found not only in ordinary shrubberies, but also under the shelter of trees. Fuchsias make in the open pleasure-grounds grand summer beds and permanent ones; but when the plants are cut down for the winter, and the stools sheltered, as is customary, with a heap of ashes, the effect is the reverse of pleasing, whilst the birds persistently refuse to allow the ashes to remain undisturbed. The obvious cure for this would be found in associating Ivy with the Fuchsia, *i.e.*, covering the surface of the bed with plants of Ivy, which would soon become permanently established, and which in winter would afford to the Fuchsia stools all the protection from frost that would probably be required. The danger perhaps would be that fast-growing Ivy might choke up the Fuchsia plants, but the stools might be cleared and freed from the too close embrace of the Ivy every spring, and even some well-rotted manure might be dug in about the roots at the same time. The result of this arrangement would be that the plants would produce branches richly laden with flowers from a setting or ground-work of green Ivy, whilst in winter the beds would still be a mass of green leafage. There are not wanting an abundance of Fuchsias suitable for outdoor planting that would give variety of growth and of colour, the most robust kinds, of course, having the central position. Double sorts should be avoided. Any plantsman would easily furnish a selection that would be most fitted from habit and strength for the purpose. Plants that had been once before cut back hard, and which had thrown up a bushy growth, would be better than single stem plants, as the latter do not break so freely in the open ground the first year. The cutting back should always be such as to encourage fresh growth from near the roots.—D. N.

Increasing Herbaceous Plants.—Fibrous-rooted spring and early summer-blooming herbaceous plants, that have become too large, may now be divided; by carrying out such work at this season when the tops are dead or nearly so, the plants will bloom much better than if it were done in spring. All should therefore be removed or divided that require it, except such plants as the common White Lily, which will now be making active growth, and if the roots be disturbed it will have the effect of wholly or partially preventing its flowering next year. The majority of herbaceous plants are an exhaustive crop; consequently the ground in which they have grown, and which they are again to occupy, should be well enriched by a liberal application of manure and be deeply dug; this latter is essential where, as is often the case, the roots of shrubs or trees have access to it. Where any considerable number of the plants are thus to be got up, advantage should be taken of the opportunity to re-arrange such as may require it, not only by keeping the strongest-growing ones to the back, graduating regularly so as to have the lowest growers in front, but also mixing the colours in a way that will produce the best effect.

MICHAELMAS DAISIES.

These are now in full flower in London gardens, where at this season they are valuable on account of the comparative scarcity of bright flowering plants. These Asters, or Michaelmas Daisies as they are called, are plants that any one can grow if they have space at command and any ordinarily well-drained soil. They are not quite so showy as Chrysanthemums at a distance, but when closely examined they are more beautiful, their slender-rayed flowers possessing all the soft and delicate tints between white, rose, and purple, while the bright yellow centre bestows upon them an additional charm. All the kinds are perfectly hardy in this country, luxuriating in any soil or climate, and when once planted requiring little attention. They seem just as fresh and vigorous in the little forecourts and back gardens of Bermondsey and Stratford as in gardens more favourably circumstanced. All that has to be done to increase them is to cut a strong tuft to pieces with a spade and plant the divisions wherever they are to flower. Some of the kinds produce long spray-like panicles, which are extremely graceful in a cut state arranged along with sprigs of other late flowers, such as Fuchsia Riccartoni, double or single Marigolds, Anderson's Veronica, the silvery striped foliage of the variegated Arundo, and double or single-flowered Dahlias, bright-tinted Chrysanthemums, and a few pieces of the large white late-flowering Feverfew (Pyrethrum serotinum), which should be grown with the Asters, as its pretty, yellow-eyed flowers show to great advantage beside the bluish-purple and rosy-crimson large-flowered Asters, such as A. Novæ-Angliæ, purpureus, and roseus, which, together with A. bessarabicus, may be taken as three of the very best of the late-blooming kinds. One of the best of all the species flowering in October is the white and lilac-flowered A. versicolor, a charming little plant, just over 1 ft. in height, and yet as showy in its way as the large-growing kinds, some of which attain a height of from 6 ft. to 8 ft. in deep rich soils. When grown in pots in the same way as Chrysanthemums these Asters make excellent plants for greenhouses or rooms. The following are a few of the best kinds in addition to those already mentioned: Amellus, beautiful lilac-blue, with orange centres, flowers 2 in. in diameter, borne in dense masses during September and October, height 2½ ft.; Chapmanni, bright lavender, flowers medium size, very abundant bloomer, 5 ft.; grandiflorus, flowers purple, 2 in. in diameter, borne in great profusion during the months of October and November, height 3 ft.; hyssopifolius, lavender-blue, flowers medium size, very abundant bloomer, habit neat and compact, 1 ft.; lævis, bright bluish-lilac with yellow centres, flowers medium size, 3 ft.; laxus, bright lavender-blue with orange centres, flowers medium size, very abundant bloomer, 4 ft.; Novi Belgi, rich bluish-purple, golden-yellow centres, flowers large, abundant bloomer, 4 ft.; pulcherrimus, white changing to pale lavender, flowers large, 4 ft.; purpuratus, light purple, flowers medium size, 4 ft.

Group of Michaelmas Daisies (Asters).

Flowering Plants in Shade.—I strongly recommend anyone to give up struggling with flowers that will not grow well in shade and try Ferns, which will thrive, and, by a judicious mixture of Primroses, Polyanthuses, and bulbs, need not be too tame; in fact, I can imagine nothing prettier than a small window conservatory filled with cork and luxuriant Ferns and Lycopodiums, interspersed with Hyacinths or other flowers which can be nursed to blooming point in a window.—B. C.

ANEMONES.

Taking Anemones as they are understood in the seed shops, viz., the varieties of coronaria, of fulgens, and of hortensis or stellata, they are most successfully cultivated from roots. Of the forms of coronaria, double and single, they range from pure white through all the shades of lilac and purple to the richest glowing magenta; of fulgens, from the colour of a soldier's coat to bright crimson, including the double Peacock Anemone of the south of France, and stellata with its beautiful starry flowers. These all prefer a loamy, well-drained soil with partial shade, and if planted in succession will yield flowers for at least six months of the year. We have had a bed of coronaria varieties in bloom throughout June, and but for the hot sunshine and the absence of shade they would have continued a good way throughout July on soil moderately drained and somewhat inclined in summer to be harsh. These roots were planted in April. Plants of fulgens were in bloom from Christmas, along with the various single forms of coronaria. The Anemone of the florists and of the Dutch growers ranks amongst the oldest of garden flowers, and certainly amongst the most beautiful. Perfectly hardy, simple of culture, and eminently suited for the open border, it commends itself specially to all lovers of hardy spring flowers, and though resembling in appearance, is not to be confounded with the brilliant scarlet A. fulgens, which is an original species, and not, as our garden Anemones are, the product of intercrossing for many years. Anemone coronaria from the Levant, and A. hortensis of Italy, claim the parentage of the myriads of garden kinds of the present day. These are marked throughout by the same habit of growth and type of foliage, but great variation in colour, character, and markings of the flowers, some of which are single, others semi-double, and others as double as an incurved Aster. Roots of all these forms may be had from the bulb dealers at moderate prices—in fact, 100 roots of fine mixed sorts for 3s. is absurdly cheap; and if this quantity be purchased and planted in a small bed, it will be found that both in foliage and flower the result is all that can be desired. The figure on p. 371 represents exactly what these double French Anemone flowers are, and when it is added that they are produced in great abundance, are in height about 8 in., and are set in a mass of charming foliage, it will not be difficult to realise how very beautiful a bed of them must be. The most suitable time for planting the dried roots is towards the end of October, the soil being well prepared and manured. A little earlier or later will vary the time of blooming slightly, but the average blooming period is from the beginning of April, according to the season. The roots, if planted in beds for massing, should be 6 in. apart each way, but in borders four to six roots make a good clump. Cover to a depth of 2 in., and, where possible, add a surfacing of fine Cocoa-nut fibre refuse, as this affords much useful protection. The roots usually start into leafage almost immediately, and where a winter leafage is desired, the earlier the roots are planted the better. As soon as the foliage has decayed, if so desired, the roots may be lifted and stowed away until the succeeding autumn; the best plan, however, if the beds are needed for summer bedding plants, is to lift as soon as the bloom is past and lay the clumps in neatly under a wall or in some shady place, and allow them to remain until the autumn. The advantage of spring planting is that a succession of bloom is obtained until June. When the foliage is dead, and the tubers thoroughly ripe, they should be taken up, carefully dried, but not in the sun, and stored in a cool, airy place till the time of replanting arrives. During severe weather in winter it will be necessary to protect the borders in which they are planted with bracken, straw, branches, or similar material. Propagation is effected either by dividing the tubers at the time of planting, or by raising plants from seeds, which in some seasons are produced plentifully. For growing in pots for greenhouse or window decoration Messrs. Sutton and Sons remark: The first batch of roots for early forcing should be potted in September, and kept in frames, with but little water, until towards the end of the year, when they should be taken to a cool greenhouse, and be very gently forced into flower. By potting or planting in frames every three or four weeks during the remaining months of the year, the supply of flowers will be continuous.

ANSWERS TO QUERIES.

2898.—**Storing Potatoes.**—For many years I acted upon the following plan of storing Potatoes, and the result was invariably satisfactory, even in the worst seasons: After lifting them I had them carried to an outhouse, and as they dried all superfluous earth was removed. They were then taken to a frost-proof cellar and placed in a corner, secured by a narrow board to prevent undue scattering. The floor of the part selected was first covered thinly with well-slaked lime, and as the tubers were put in, additional lime was added to the successive layers. The dessicating properties of the lime preserve the skin of the Potato; also prevent damp and decay. Even if a diseased root should rot, the lime tends to keep the infecting fungus from spreading. I always had a good supply, fit for any table, up to and well into July. I depended for my winter stock upon the old Fluke, than which no better Potato need be wished for if carefully and skilfully grown; but it requires attention and experience to ensure a heavy and perfect crop. My soil was artificially made, rather gritty and poor, so I always manured and roughly dug it in the autumn. The essential points to store Potatoes well are these: Keep them dry, in the dark, as cool as possible, but absolutely secure from frost.—Berg.

2722.—**Rusty Water.**—It is a well-known fact that no water, *e.g.*, distilled rain, aërated, oxygenated, or carbonated, will dissolve sulphate of lead (not even when such are largely contaminated with sulphuric acid until it is concentrated to 60° areometric, and then with heat). Vegetable acids (*e.g.*, acetic acid) will not dissolve sulphate of lead. Sulphuric acid is made in leaden chambers, and may be concentrated by distillation from leaden stills up to a certain strength—say 60°. So "J. D." may feel reassured. Ordinary commercial sulphuric acid, or strong vitriol, is generally not pure, containing hydrochloric, nitric and sulphuric acid, and often arsenic, &c. The pure or the Nordhausen acids are very potent and caustic, and may be dangerous in inexperienced hands. Therefore, for safety and efficiency, I recommend such persons to use a strong solution of Epsom salts hot, rubbing this with a little sand by means of a close, hard scrubbing-brush or a Cocoa-nut husk over the lead surfaces, so as to brighten them, when the sulphuric acid immediately combines with the lead and the mag-

nesia, is deposited as a white powder, and thus will assist in removing greasy matters which may be on the lead, exposing the surface of the lead to the action of the acid. The only labour is in scrubbing the lead bright, and the time occupied in the action is a few minutes, and anybody can do it. I have acted on these facts for forty years, and told lots of people and plumbers and other tradesmen in lead. But I have never known any avail themselves of the information, because they could not understand it! As a matter of economy, all leaden utensils used in building should be made to assume a sulphate surface, as they are rendered insoluble by such agents as they are likely to be subject to, and they thus last much longer.—J.B.

2901.—**Mezereon Daphne.**—This plant is raised from seed only. I have a fine plant, which was a self-sown one under the parent plant. It is now fourteen years old and blooms abundantly. I let the berries drop off, and they root and come up the next year if not disturbed. No particular soil or situation is required. Mine is only common garden soil and faces the south, in length are slipped through four sockets, the plates on which they are fixed being screwed on each side of the ladder where it is joined. The ladder, which is frequently used in the garden, is very portable and handy for many purposes; it is 12 ft. high, has seven Oak rundles in the lower end and five in the upper. It was made by a carpenter and cost 17s.—Esprit de Corps.

2840.—**Unproductive Potatoes.**—The Champion Potato has enormous root power. It carries its healthy foliage through the period in which the disease is most active. It is the latest producer we have; its produce is then most abundant, and all the late-developed tubers sound. You could not have better advice than that already given you—to let it run its course fully; but I entirely differ with the adviser, from three years' experience, as to its value. Abundant produce, sound, and of good quality has encouraged me to plant thirty-five poles of it this year. In order to answer your query as to productiveness, I have just dug two average roots, and have 5 lb. of sound, good-sized tubers in a basket before me. They were affected with club. From that day to this I have always taken care to tread the seed-beds thoroughly after digging, a short toothed rake following, after which the seed is sown in shallow drills or broadcast, and the ground again trodden and raked. I have not had a clubbed plant since. Hard treading is a very important part of seed-bed preparation. Wireworm abhors a consolidated surface. A gas-lime compost helps much in getting rid of the swarm of insects which honeycomb a loamy soil.—J. M. Taylor.

3111.—**Climbing Roses.**—Take out the clay to the depth of 2 ft., and make the hole large enough to hold a wheelbarrowfull of compost, viz., two-thirds strong turfy loam from an old pasture and one-third of well-decomposed animal manure. If properly done, this will last for years with an annual top-dressing of manure. For a white Rose take climbing Devoniensis, or, better still, perhaps, for general purposes, Gloire de Dijon. For two red climbing Roses take climbing Duke of Edinburgh and climbing Charles Lefebvre. These, if properly treated, will, from

Group of Double and Single French Anemones.

but the old plant faced the north and did equally well.—Amateur.

3100.—**Blooms Dropping off Scarlet Runners.**—I see in Gardening Illustrated the question so often asked, Why do the flowers of Scarlet Runners drop off? From my experience as an amateur, I think the reason very simple, viz., because they never get water enough at the root. It is generally too much labour to carry the water in sufficient quantity, but by following the plan I adopt, watering becomes easy. I cut a trench in the ground from the water-tap across the garden to the Beans, and let the water run until I have given the Beans a thorough soaking, and this I repeat as often as I think it necessary, and the result is, that I have an abundance of crisp delicious Beans growing to 6 in. in length. I have had the same success every year since I adopted the above plan.—R. T.

3116.—**Pruning Ladder.**—Wishing to reach the roof of my house from a room inside where there is a skylight, I had a light folding ladder constructed; it is in two parts held together by hinges, and for safety when in use undoubled. Two strong square iron bolts 1 ft. planted in drills, 2 ft. 6 in. apart and 12 in. apart in the drills, which is not wide enough. There is fully 16 tons to the acre of good, picked table sample, according to every trial I have yet made. If you have crowded yours together, or grown them under trees, the crop will be small. Many will be disappointed with them by over-haste to lift them. I dug last year many of the finest plants on August 24 for an exhibition, but without success. A month later the crop was the best in the parish.—J. M. Taylor.

2968.—**Plums Cracking.**—Plums often crack through being imperfectly fertilised, or through some defect in the supply of food during the formation of the stone, or it may be constitutional. Perhaps the roots are getting too deep, or the soil may be deficient in lime. A good dressing of the latter substance forked in round the tree will do no harm and may do a deal of good, if, as I suspect, there is a deficiency of it in the soil.—E. H.

3114.—**Club in Cabbages.**—Suffering one year from this cause, I observed that some seeds of the Cabbage, which had fallen on the hard garden path close to the seed-bed, were not personal experience, do well, and give satisfaction.—William Walters, *Burton-on-Trent*.

3038.—**Road Sand for Cuttings.**—Would "B. T." be kind enough to describe the nature of the road sand he used for his cuttings, and whether it was taken from a road that had been mended with granite or some very soft stone, such as one often sees broken up to mend bye-roads with, or if it was obtained from a road repaired with flint or gravel? The sand produced by granite or soft stone would, I have no doubt, lead to the fatal results named by "B. T.," as it would be of a heavy black appearance, retaining when moistened a good deal of water, whereas the sand produced by gravel or flint is of a sharp, porous description, which soon dries, and would, if mixed with good garden soil after being riddled through a fine sieve, no doubt answer the purpose. Such sand is also very good for use in either flower or kitchen gardens mixed with the soil where it is wet and heavy, as it makes it work much better and assists drainage.—Swallow.

2913.—**Wintering Cuttings and Ferns.**—As our fair friend, Alice Grimes, only requires to preserve her cuttings from frost, and

which, I presume, mainly consist of such things as Geraniums, Fuchsias, &c., I feel happy to be able to inform her how she can do so. Place a good layer of Cocoa fibre or coal ashes in the bottom of your frame and plunge the pots to the rim in this. A bank of dry Moss, fibre, or any similar stuff, about 2 ft. thick, placed round outside the frame is requisite to exclude severe frost in the winter. The plants should be well rooted in their pots by this time, and should be plunged in the frame at once. A good covering of straw, hay, or some similar dry litter must be put over all during sharp weather. With these precautions, and a careful attention to air giving on all favourable occasions, such plants as Geraniums, Fuchsias, Calceolarias, &c., may be successfully wintered. If the Ferns are of hardy sorts they will live outdoors during the winter. The pots should be plunged to the rims in the border, and covered with 2 in. or 3 in. of dry Moss.—P. J. Kane.

2977.—**Cucumbers being Eaten.**—Either there are mice or woodlice in the Cucumber frame, which can only be ascertained on the spot. In the former case, set traps or use poison; in the latter, hunt up a few toads and place them in the frame. The evening is the best time to capture them; they will soon make short work of the woodlice.—E. H.

3042.—**Geraniums and Fuchsias not Flowering.**—There is more than one reason why Geraniums do not flower, as well as for the buds falling from Fuchsias. I expect in this case the plants are kept too close. Without air and sunshine no plants can flower. Manure water is of no use to plants that will not blossom. If gas is burned in the house that might account for the flower-buds dropping; but I expect it arises from weakness due rather to growing in a close, confined atmosphere than lack of nutriment in the soil.—E. H.

3036.—**Small Standard Apple Trees.**—"J. J." can graft on the Paradise stock and train them up to form small standards. The strong-growing sorts may be double grafted, being worked the second time standard high. What is called the English Paradise will be most suitable. Pears on the Quince will do treated in like manner—that is, train up the graft, pinching back all side shoots. When finally planted the stock in both cases must be buried.—E. H.

3049.—**Insects in House Slops.**—House slops should be used daily, or else be mixed with some deodorising substance, such as earth or ashes. They should not be permitted to stand long in a tub to impregnate the atmosphere and become infested with obnoxious insects. Any kind of liquid exposed to the sun would in time become changed in its character and be stocked with animal life. A lump of lime dropped in the tub will kill the insects and deodorise its contents any time.—E. H.

3021.—**Earthing Potatoes.**—The editor's reply to this question, right in itself, can I think be slightly added to—that the earthing-up causes the soil to lie lightly upon the tubers, and thereby is less resistance to their swelling or enlarging. I may add a few words upon what appears to me to be the best method of growing early Potatoes where horse labour is not used, and which is chiefly in practice on the southern slope of the Mendip Hills. The plan is to grow them in beds about 4 feet wide, any length, with just enough room between the beds for a man to walk to work the beds without treading upon them; the Potatoes are planted across the beds in drills as early in the spring as the weather will permit; when up 2 in. or 3 in. they are "spittled," as it is there called, or dug between with a light, narrow spade, only to be obtained in that neighbourhood, I think, after which, and when in a fit state, they are earthed up also with the spade, which is by far the best implement for earthing. The beds are never trodden upon. The spade I do not think to be the best instrument for "spittling" or digging between, but a narrow steel fork, 4¾ in. wide across the prongs—3 prongs only—13 in. long in the prongs, and entire length of prongs and handle 4 ft. 9 in. to 5 ft.; such a one I have in use, but it was specially made for me.—M.

2986.—**Potatoes in Pots.**—The best sorts of Potatoes to grow in pots are those that make short tops, such as the Early Kidneys and Rounds. I have had the most success with the old Ashleaf for very early work; then come Veitch's and Myatt's. The best soil is decayed turf mixed with wood ashes and charred rubbish. Christmas is soon enough to plant, and the pots should be near the glass. All the eyes except the strongest at the crown of the tuber should be rubbed off. I am doubtful if growing Potatoes in pots will be remunerative in a commercial sense, as the pots will cost a lot of money. Planting in light span-roof pits will, I think, pay better.—E. H.

3029.—**Mildewed Roses.**—Sulphur is perhaps the most general remedy for this plague to the Rose grower. Remove the leaves worst affected, and apply the sulphur when the leaves are wet from rain or a syringe. Give the trees a good washing next day. Canon Hole, in his book on Roses, page 297, refers to the application of soot, recommended by Mr. Rivers: "The trees were smothered with soot in the dew of the morning. This rested on them for four or five days, and was then washed off. The effect was marvellous; the mildew disappeared, the leaves turned to a dark green, &c." If sulphur does not cure, try soot.—William Walters, *Burton-on-Trent*.

3079.—**Moving Rose Trees.**—In my opinion and experience I should say do not attempt to remove Rose trees whilst the sap is flowing freely, but rather wait until say the middle of October or later, according to the weather, until the sap is somewhat at rest. At present my Rose trees are in active growth, and to shift any would be almost sudden death; the bark would be sure to wither, and the plant suffer to a certainty. Better to wait for colder weather than to run the risk of moving in September.—William Walters, *Burton-on-Trent*.

3111.—**Climbing Roses.**—There is no better light-flowered Rose than Gloire de Dijon for planting against a wall. Good varieties for associating with it are climbing Victor Verdier and climbing Jules Margottin. As the clay is so near the surface, it should be taken out some 10 in. to 12 in. in depth, which will thus allow for the formation of a good border 18 in. in depth. Roses like a good holding soil, so that about one-third of the clay may be retained, laying it out where it may get thoroughly pulverised, either by sun and wind or frost. When it crumbles to pieces in the hand it is in the proper state for use. The remaining portion of the compost may consist of any good garden mould, adding thereto some rotten dung. The best time to plant is about the latter end of October, but it may be deferred until the beginning of March. Procure plants in pots if possible, loosen the ball of earth, and spread the roots carefully in the prepared compost, pressing the soil firmly around them. About the latter end of March prune each shoot back to two eyes, mulch the soil with dung or Cocoa-fibre, and water in dry weather.—J. C. B.

3103.—**Management of Fern Case.**—If your Fern case is in the open air and cannot be placed under cover, your best plan will be to procure some bast mats, nailing them to the boards, and stuffing between with dry litter. The front and top may be covered up at night with mats. In this manner ordinary frosts will be excluded, and when the weather is very severe we think that a small lamp placed inside at night would ensure the safety of the inmates, leaving a small aperture in the highest part of the case for the fumes to escape. Your plan of furnishing the back and sides is very good, but we would prefer good fibrous peat for the plants to root into.—J. C. B.

3042.—**Fuchsias not Flowering.**—Perhaps "U. W." gives too much water to the Fuchsias. They should never be dry or stand in water. Both in the greenhouse and the garden ours have been very lovely. I often stand gazing at them with admiration, their graceful branches being loaded with flowers. I have a young plant, Miss Lucy Finnis, so full of flowers, I have taken some off lest the plant should suffer from having so many on. I think the single-flowering plants give me more pleasure; nothing can be more graceful than a dark one I have had in flower since February, and another lovely one, with a white corolla, which has a freak of sometimes having double flowers and sometimes single. Fuchsias, I find, require liberal treatment, but they repay liberally the care bestowed upon them. I syringe them often when the sun is not hot upon them; and when they show signs of poverty, I treat them thus: Round the inside rim of the pot, which should not be a small one, I set oyster shells—thin, small ones are the best; they give more room for stable manure which I put in; in fact, it is a simple way of mulching. In a few days there is a great improvement; flowers will appear in profusion. The most fastidious will forget to look at or think the oyster shells and the manure an objection, but that may be in a great measure removed by placing the pot in one made larger than the one the Fuchsia is growing in. One part of our greenhouse I always look upon with pleasure—a rockery, where Fuchsias, Ferns, Begonias, Primulas, Geraniums, and Roses flourish so well together. They look better nestling in among the stones, and far more natural than on stages—to me always an eyesore. I think a conservatory might be made more pleasing without stages. Of course those who indulge in bedding-out plants require them for a large number of flowerless Geraniums, &c.—Frosy Parc.

2974.—**Drying Flowers.**—At the commencement of this year I commenced to form a collection of flowers on exactly the same principle as "Janet" intends doing. The plan I adopt is this: On plucking the specimens I place them in a book, with a label attached, and when they are quite dry, a few days after, transfer them to another book (about the size of Gardening Illustrated) of clean leaves, whereon I gum them in as tasteful a manner as the number of specimens will allow.—William Hewes.

3039.—**Preserving Ash Berries.**—The Mountain Ash berries are preserved for winter decoration by putting them into strong brine. Mind and keep them well covered with the brine.—A. N.

2840.—**Unproductive Potatoes.**—I planted one sack of Scotch Champion in the spring. They are very free from disease. A gentleman went with me to see them, and I took a few roots up for him to see, and he said he never saw such a crop of sound Potatoes: from 10 to 16 at a root, all of which were very fine.—R. B.

3107.—**Plants for Small Garden.**—I should advise "North Shields" to try spring bulbs and plants, such as Tulips, Snowdrops, Crocuses, Hepaticas, and Lily of the Valley. The best Tulips for early blooming are Crimson King, Prince de Ligne, yellow; Duc Van Thol, scarlet and orange; and Le Blason, white and rose. I should also recommend Musk for the north side to bloom in summer, and for spring early Wallflowers. All these may be planted or sown now.—Butterfly.

3112.—**Sowing Iris Seed.**—English Iris seed, and, I imagine, the other varieties also, should be sown as soon as ripe, but they will not come up till next spring. Should the seed be not sown till the spring, it will remain in the ground till the following spring.—H.

3111.—**Climbing Roses.**—"Rhododendron" had best put Maréchal Niel (yellow) or Souvenir de Malmaison (pinky-white) for the middle, or perhaps the white Banksian would suit him best, and Princess Marie and crimson Boursault for either side. These require a good rich soil, and must be manured regularly twice a year.—Butterfly.

3044.—**Lost Roses.**—I have searched the catalogues of the principal Rose growers, but cannot find Rosa sulphurea or Mogador mentioned. No doubt application to Messrs. Cranston & Co., King's Acre, Hereford, would be successful; at all events, if the Roses referred to are in existence, that firm would be most likely to know of their whereabouts.—William Walters, *Burton-on-Trent*.

3098.—**Prickly Comfrey.**—I have found this to be an excellent thing for cows, pigs, &c., and though they may not eat it at first, yet after a day or two will eat it with great relish. It may be cut five or six times during the summer, but is of no good during the winter. A pamphlet on the above is published by Messrs. Christy & Co., 155, Fenchurch Street; price 1s.—H. T. C.

3174.—**Cutting Rhododendrons, &c.**—You may safely cut the plants in question down to any desired height, the best time for so doing being about the latter end of March, or if the Rhododendron is in bud it may be cut back after flowering.—J. C. B.

3180.—**Quick-growing Plant.**—The Euonymus is a quick-growing evergreen; but if you would prefer a graceful habited Conifer, you cannot do better than choose Lawson's Cypress.—J. C. B.

3123.—**Diseased Hollyhocks.**—Yours is by no means an isolated case. The Hollyhock fungus has now become one of those established evils which tax the patience and skill of the grower to obtain a mastery over. We do not know of any thoroughly proved effectual remedy, but believe that a timely application of black sulphur would check and eventually destroy it. Another season dust the leaves as soon as the first spots appear.—C.

3105.—**Propagating the Gum Cistus.**—These are easily raised from seed, which should be sown in pans of free soil in March, and kept in a frame until germination takes place, shading of course from sun, and keeping the soil in a uniformly moist condition. Cuttings may also be taken of the current season's growth, inserting them firmly in mellow soil in a shady situation about the middle of August.—C. B.

3179.—**Removing Rose Trees, &c.**—The middle of October is the best time for transplanting the plants mentioned. They do not then suffer any check, and lay hold of the soil before winter arrives.—B.

The Berry Bug mentioned by a recent correspondent is doubtless the harvest bug, well known by sportsmen and labourers as a most annoying pest: it buries itself in the skin and causes intolerable irritation. Strong carbolic soap or a carbolic lotion is a preventive to a certain extent, and a concentrated form of ammonia is a cure to some people.—B. C.

3217.—**Pruning Fruit Trees and Roses.**—What is the best time to prune Apples, Plums, and Roses?—E. S. [Apples and Plums from December till the end of January, Roses in March.]

3218. — **Mulching.**—*F. O'D.*—This means covering the surface of the soil with manure or other material to prevent evaporation, and so keep the soil cool and moist during summer.

3219.—**Saving Vegetable Marrow Seeds.**—*A Learner.*—When the Marrows are ripe and dry, cut them open and put the seeds into a vessel of water to free them from pulp. Then strain the water off, and spread the whole on a piece of canvas in the sun to dry; pick out the seeds separately, and put them into a paper bag till wanted for use.

3220.—**Edgings for Walks.**—What are the best and cheapest materials to use in making permanent edgings for walks of a flower and kitchen garden combined? —H. W. [Hard burnt edging tiles made at most large potteries.]

3221.—**Hydrangea not Blooming.**—A very good plant of Hydrangea hortensis in a perfectly healthy condition has not bloomed this year, nor shown any symptoms of doing so. It, however, bloomed abundantly last year and the year before. What is the reason and remedy? The same thing has occured in a neighbouring garden.—J. W. F. [The wood did not ripen well last year, owing to want of sunshine. Thin out all weak growths, and let the plant be exposed to the sun as much as possible, and it will doubtless flower well next year.]

3222.—**Wintering Window Plants.**—I have in pots in outside window boxes Ivy-leaved Geranium, Fuchsia procumbens, Harrison's Musk, Mesembryanthemum. Can these remain where they are through the winter? if not, will a cold frame do for them? or must they be taken into the house?—SUBSCRIBER. [Take them indoors. The Musk and Fuchsias might live in the frame, but not the Geraniums.]

3223.—**Selaginellas.**—What is the best time of the year for cutting down S. cæsia, autumn or spring? Does this Selaginella require to be kept in the stove all winter? or will a warm greenhouse be sufficient heat to start it into growth?—BLECHNUM. [Spring is the best time to cut down the plant. A temperature of 50° will do for it all winter. In early spring a temperature of 65° or 70° will be necessary to start it into vigorous growth.]

3224.—**Artificial Manures for Ferns.**—Will these manures be of any benefit to Ferns? If they are, what kind is used, and in what way? Amies' Manure is recommended by some for Adiantums, and a friend of mine says that Clay's Fertiliser will benefit all Ferns.—BLECHNUM. [They are beneficial when mixed with the soil when the plants are potted, or as a top-dressing when in active growth. Care must, however, be exercised in their use, as they are sometimes rather powerful.]

3225.—**Begonias in Windows.**—How shall I treat some tuberous-rooted Begonias which I have raised from seed sown in a pot in the spring? They are now about 2 in. high, and kept on a board in the kitchen window, where there is nearly always a fire. They have been transplanted to four plants in an ordinary sized flower-pot. [When the leaves and stems die down, just keep the soil from getting dust dry till they show signs of fresh growth in spring; then pot them singly into 3-in. pots, and shift them into larger ones as needed.]

3226.—**Moving Roses.**—Can I move two standard Roses at once, as I want the ground?—R. S. [Yes.]

3227.—**Wallflowers and Foxgloves.**—I have a lot of Wallflowers and Foxgloves in the seed-bed which were sown rather late, and consequently are yet only small plants. Would you advise that they be wintered as they are or pricked out? and in either case would they require any protection during severe weather?—C. G. [Prick them out now, and plant out finally in early spring. A slight protection during severe frost would be an advantage.]

3228.—**Manuring Fruit Trees.**—Will Apple trees that have been planted thirty years and upwards in an orchard derive any benefit from top-dressing with rotten manure? Their roots are in a cold, stiff clay.—HIGHGATE. [Certainly they will if the manure is just pricked into the surface soil.]

3229.—**Wintering Verbenas.**—I have lately struck some Verbenas and kept them in a frame close to the glass. They are beginning to run. Is it best to pinch the tops out? Could I keep them through the winter provided the frost is kept out?—J. G. FOSTER. [Give them plenty of air at every opportunity, and dust with sulphur should mildew make its appearance. Cut back in spring, and you will get plenty of cuttings.]

3230.—**Cinerarias.**—Having a frame and a greenhouse from which the frost could be kept out, could I get Cinerarias into blossom?—J. G. FOSTER. [Yes, if you have some strong plants now. It is too late to sow seed. Cinerarias dislike a dry heat, and frost is fatal to them.]

3231.—**Fruit Trees for Back Walls.**—What sort of fruit can I grow in a lean-to house against the back wall, which is always warmed by the kitchen fire? The house is 10 ft. high and 10 ft. wide, and has a south aspect. It is heated by hot-water pipes.—PLANTER. [Grapes, Peaches, Nectarines, or Figs would do well. Plant now in good turfy loam.]

3232.—**Rose Belle Lyonnaise.**—This planted on a lawn has made such vigorous growth, that I wish to put it against the house. Might it be moved now?—H. B. C. [Yes. If it is very large, care must be taken to keep the roots intact.]

3233.—**Pruning Pyramid Apples and Pears.**—*W. T.*—Let them alone till say December or January. Then cut all laterals in to two eyes, and shorten the leaders back to ripe sound wood.

3234.—**Asparagus Beds.**—When is the proper time for clearing Asparagus beds? and what treatment should I give them when cleared? I have eight beds seven or eight years old.—E. D. [When the tops have turned yellow cut them down. Remove all weeds from the beds, and put a good coat of half-rotten stable manure on them; also a little light soil from the alleys. They will need no further attention till spring.]

3235.—**Potting Carnations.**—I took some layers of a Souvenir de la Malmaison Carnation about three weeks ago. When can I take them up and pot them?—H. V. C. [Now, if they are rooted.]

3236.—**Wintering Ivy-leaved Geraniums.**—I have some fine Ivy-leaved Geraniums which I have grown in boxes all the summer. I should be glad to know how I can winter them. Should they be cut back? and, if so, when?—JIMMIE. [Cut them back slightly and pot them, or keep them in the boxes till spring. You can winter them in any place from which frost and damp are excluded provided light and air can reach them.]

3237.—**Chrysanthemum Burridgeanum.**—*Ambergate.*—Sow in deep rich soil either now or in March.

3238.—**Beetroot in Pots.**—*J. D. McN.*—You will want deep pots to grow Beet to perfection. Sow in good loamy soil in April, putting two or three seeds in the centre of each pot, pulling out the weakest plants when fairly up, and leaving the strongest one only.

3239.—**Uses of Hops.**—*L. H.*—These are useful to plunge pots in during winter, but are of very little use as mould even when well rotted.

3240.—**Lemon Tree in Winter.**—I have successfully grown from the pips of a Lemon a small tree about 2 in. high. What shall I do with it in winter?—WILL O' THE WISP. [Keep it in a warm window.]

3241.—**Seedling Cockscombs.**—I have some seedling Cockscombs 3 in. or 4 in. high, which I sowed, not knowing them to be annuals; will they keep in a cold frame?—TYRO. [No; they want a warm temperature. They would have succeeded fairly well if they had been planted in the open ground in June.]

3242.—**Fowls' Manure.**—I have some fresh fowls' manure and some well-rotted stable manure. Would it be well to mix these in applying them to the ground? or in what way can I apply the fowls' manure.—TYRO. [Mix them together, adding a little soot.]

3243.—**Wintering Dahlias.**—How can I keep Dahlias during the winter? I have had some plants for several years, but I have always nearly lost them in winter. This summer I have taken a number of cuttings in small pots, and I have them growing well in a cold frame. Any information as regards keeping the cuttings, also the tubers, would be gladly received.—J. P. W. [As soon as the frost cuts the leaves, cut off the stems to within 1 ft. of the ground, lift the tubers, and store them in dry soil or sand in a shed or similar place from which frost is excluded. Plunge the pots of those you have in the frame several inches deep in ashes where they are.]

3244.—**Keeping Fuchsias in Cellars.**—*Tyro.*—If in pots, lay them on their sides in the sun until frost is likely to occur, then shake off the leaves and store the plants in the cellar. They may be watered a few hours before being stored away, and they will then require no more water till the spring, when they begin to grow.

3245.—**Antirrhinums in Winter.**—*Bob.*—These are perfectly hardy in dry, well-drained soils. If your plants are not strong a little protection would be advisable.

3246.—**Heating Frame.**—I have a glass frame 3 ft. by 3 ft., projecting from a window facing south. Will a paraffin lamp be sufficient to heat it during winter?—CAMBERWELL. [No doubt it would, but the fumes of paraffin are injurious to plants. It would be better to grow such plants that would need no more warmth than that which might be afforded by the room.]

3247.—**Keeping Coleus.**—*Anna.*—In order to keep these, a light, airy house and a temperature of at least 50° during winter is necessary. Cuttings strike readily in spring in a warm house or frame.

3248.—**Pruning Fruit Trees.**—Some of my Apples, Pears, and Plums have been left unpruned this summer. What had I best do with the long shoots?—S. E. [Thin out the unripe shoots and those which cross each other, and shorten the others back slightly. We presume you mean bush or standard trees.]

3249.—**Heat for Plants in Winter.**—Having a Vinery which I wish to turn into a greenhouse in which to keep Geraniums, Gloxinias, Coleus, Fuchsias, &c., would you inform me what heat I should keep it up to in the winter to suit them all? and also if one small stove would be sufficient to keep the heat up, as there are no flues through it?—G. C. M. [The temperature must not be below 50°, or you will lose your Coleus. The Gloxinias will require quite that heat, excepting whilst they are in a dormant state, when a slightly lower temperature would not hurt them much. The Fuchsias and Geraniums will do very well in the heat mentioned, and give a little flower during winter. One small stove will be of little use.]

3250.—**Wintering Castor-oil Plants.**—I have some very fine Castor-oil plants 6½ ft. high in blossom now, and with splendid foliage, planted out in July from seed sown in April. Can I save them through the winter? or propagate them in any way besides by seed?—H. M. O. T. [You could save them by lifting them and potting them, or by planting them in a warm greenhouse or Vinery, but the best way is to raise them yearly from seed, as by this means much healthier and better plants are secured.]

3251.—**Greenhouse too Hot.**—I have a small greenhouse, 12 ft. by 8 ft., heated with hot-water pipes heated by a tubular boiler in shed adjoining; sometimes even in hard weather I am unable to regulate the heat, and it gets to 60° at night, when the plants get terribly dried. May I venture to water the plants in such a case, or steam the pipes? They were put in a year ago, and are getting very rusty. Should they be painted? and with what?—ENQUIRER. [You must not steam the pipes. You may damp the floor and stages, but your true plan is to regulate the heat by means of a damper in the chimney and the ash door under the fireplace.]

Begonia and Geranium Leaves Falling off.—*M. P.*—We should say your plants are exhausted after the season's flowering. Try repotting into some good rich loamy soil.

W. D. M.—The Grape shoot is mildewed; dust with flowers of sulphur.

Pentstemons.—*J. S. M.*—Pentstemons do not require protection during the winter; they are hardy.

Gladiolus Dying off.—*Illawarra.*—You do not say what treatment they have been subjected to.

Abbreviation of Botanical Terms.—*W. B.*—The abbreviation fl.-pl. means double flowered.

Leaves Disfigured.—*H. H.*—Red spider.

Names of Plants.—*C. M. E. A.*—Clematis Jackmani.——*Rev. L. A. B.*—Large-flowered Aster (A. Amellus); small one, A. turbinellus.——*Subscriber.*—Large leaf, Lophospermum scandens; other, Mikania scandens.——*Thrift.*—Bidens (species).——*Mrs. T. S.*—Lonicera Ledebouriana.——*M. C. R.*—Giant Knotweed (Polygonum cuspidatum).——*Miss Std.*—Touch-me-not (Impatiens Noli-tangere).——*C. M.*—Fern (Pteris tremula cristata).——*Erica.*—1, cannot tell; 2, E. gracilis; Ixora coccinea; we cannot name the Pelargonium.——*G. S.*—Botanical name of Portugal Laurel, Cerasus lusitanica.

QUERIES.

3252.—**Spring and Autumn Flowering Shrub.**—Can any one tell me if there is any hardy flowering shrub which blooms both in the spring and autumn in a north-east aspect?—ILLAWARRA.

3253.—**Mildew on Forget-me-nots.**—What is the cause of a white sort of mildew attacking my Forget-me-nots? It first appears in white spots on the leaves, and then gradually extends over the whole plant, making it appear as if it was covered with a white mould. This occured in a pot which I had in a room window last spring, and now I find several plants are going the same way out in the open ground.—A.

3254.—**Indian Corn in Pots.**—Being anxious to grow some plants of these for the window, I shall be thankful for the plainest instructions that can be given respecting them. I have tried several times and quite failed, till this month I put nine seeds in a pot, and was much surprised to find five of them up in seven days. They are from ½ in. to 1 in. high. What must I do to bring them on? Will some one also name several other things I may try that are not generally grown, such as Acorns, &c.?—SUGRAM.

3255.—**Arum Lilies not Flowering.**—The last two years my Arum Lilies have not flowered. I have grown them for the last four years, and they have always flowered very well till the last two. After flowering I turn them out of their pots and put them into the ground for about a couple of months, then repot them in fresh leaf soil, and water them plentifully during the spring and flowering time. I also take the young plants from the old ones and plant them separately. Can any one tell me whether this is the right treatment for them? I shall be much obliged for any information on the subject.—B. J. C.

3256.—**Plants for a Shady Border.**—What kind of flowers or plants will grow best in a bed so shaded by a high north wall that it is entirely without sun until the end of June? The soil is rich, and I want something that is hardy and that will bloom during the spring and early summer months.—F. O'D.

3257.—**Pruning Hardy Passion-flower.**—Will any reader tell me if I must cut back my hardy Passion-flower? if so, when and how? It was planted in March, and has grown 8 ft.—E. S.

3258.—**Slimy Growth on Lawns.**—I should feel much obliged to be told the cause and cure of a slimy, seaweed-like growth all over my lawn. This is the second or third year of its appearance.—MRS. C.

3259.—**Wintering Roses in the West Riding of Yorkshire.**—Can any one give me any information on this point?—J. H. B.

3260.—**Plants for Windows in Winter.**—What plants can I keep through the winter in a window where the temperature is from 40° to 50°? I have no frame, but could shelter young plants in the corner of an area till they are large enough to remove to the house.—MOUSIE.

3261.—**Bulbs in Vases.**—I want to plant some Hyacinths and Crocuses in an old china bowl, which of course has no drainage. What soil ought I to put them in? and what treatment do they require?—MOUSIE.

3262.—**Substitute for Grass.**—I have a narrow Grass bank about 2 ft. high surmounted by a hedge; it looks very neat and effective when kept in perfect order. Can any one tell me, however, of some close-growing plant that would form a good substitute for the Grass without requiring the labour and attention which must be bestowed on the latter?—J. J.

3263.—**Transplanting Rhubarb.**—Will any reader be kind enough to inform me what is the best time to transplant Rhubarb?—C. F., *Forest Gate.*

3264.—**Unfruitful Fruit Trees.**—My Apple and Pear trees have all a tendency to run to wood and give very poor crops of fruit. I have tried root-pruning them, but it appears to do little or no good. Can any of your readers tell me how to treat them? Most of them have been planted about twelve years. The soil is very light and sandy, but has been well manured and worked, so that it is not poor on the surface, there being 14 in. of good soil above the sand.—A. S.

3265.—**Flowers for Spring.**—What are the best kind of flowers for outdoor spring bloom? and when should the seed be sown?—M.

3266.—**Saving and Sowing Flower Seeds.**—Will some one inform me how to gather seed from Asters, Verbenas, and Stocks? and when, too, is the time for sowing seed of the same for blooming as early as possible next year? When is the best time for sowing seed of Indian Pinks? and what soil is the best?—AMBERGATE.

3267.—**Brier Cuttings.**—I should be glad if your correspondent "C.," who gave excellent directions for Brier cuttings on which to bud Roses in GARDENING, September 11, would state what length they should be.—H.

3268.—**Outdoor Vines.**—I have found a Black Frontignan Vine, trained against a south wall, ripen its fruit admirably in such a season as 1878, for instance, but I never have been able to get any bunches really ripe from any other Vine, not even from the white Sweetwater in the warm season of 1870, though it is common to see this planted against dwelling-houses. Is there any other Vine besides the Black Frontignan that would be likely to ripen its fruit out-of-doors in a tolerably sheltered situation in Dorsetshire?—A. K.

3269.—**Cement for Pipe Joints.**—In my greenhouse I have built a brick stove in the usual way, and, in order to avoid expensive brickwork, have obtained some 6-in. drain pipes, unglazed and without sockets. I have used, to make the joints good, plastic clay, with plenty of sand mixed to prevent contraction. I find this will not answer, as the clay cracks, do what I will. I am

told Portland cement will not answer, as the heat would reduce it to powder. Is this so? What can I use or do to prevent the joints leaking, expense being considered? —Tyro.

3270.—**Roses for Pot Culture.**—Will some one name a few good Roses for pot culture in a cool greenhouse, having regard specially to good habit of plant and scent of flower, such as would allow of severe pruning for shaping, if found requisite? I have seen Roses in pots with very diminutive leaves and flowers. Do these constitute a distinct class, as no catalogue seems to notice them? If one only, what is the name?—Quidnunc.

3271.—**Chrysanthemum Halleri.**—Will this stand the winter in the open ground? if not, how can I preserve it, or cuttings, without glass?—H. B. C.

3272.—**Perennials for Succession.**—If I give up bedding plants, what perennials can I have to make a successive and brilliant show? I have over half an acre of flower garden, and so can have all kinds. I should like a list with height, colour, and time of planting. When and how ought Christmas Roses to be planted? and do any other plants blossom at the same time as they do? I want to have a bright and profuse show in winter and early spring.—At a Loss.

3273.—**Plants for a Cool Greenhouse.**—I have converted an old-fashioned summer-house into a cool greenhouse, heated by a paraffin stove to keep the frost out. The house has S.W. and E. windows, giving plenty of light. What hardy plants, especially creeping ones, can I keep in this house to flower from now to summer? I want to make the house as gay and as lively as I can without injuring my bedding stock.—At a Loss.

3274.—**Prickly Comfrey.**—I planted a rood of land six years ago with roots of this. They cost £5, but have not paid 5s. return. I should be glad if some one could tell me the best way to get rid of it; cows will not eat it. Lucerne by the side of it yielded an abundant crop.—R. Bensley, *Hilgay*.

3275.—**Grubs in a Greenhouse.**—How can I catch these.—T. P.

3276.—**Fruit Trees for Suffolk.**—Can any one name me a few good sorts of Apples, Pears, and Plums for standards, pyramids, espaliers, and walls for my garden in east Suffolk? Soil light; farmed for cereals and roots for many years; now sold for building. Position—elevated above the town.—E. C. T.

3277.—**Violets not Flowering.**—I have several plots of Violets, good healthy plants, in fine leaf, but they never flower. Could any one tell me what treatment they ought to receive to make them bloom?—H. H.

3278.—**Saving Aster Seed.**—I have a few fine Asters, and I would like to save some seed from them. Will some one say the best way to do so?—J. P. W.

3279.—**Basket Plants.**—Will some one give a list of plants for hanging baskets for a cool greenhouse? If convenient, let them be arranged under three heads: evergreen, deciduous, and annual (including biennials, if any). Not erect-growing plants or climbers, but genuine trailing or drooping plants. I think that thus a dozen baskets might easily be had, or more, containing plants all different, and each basket filled with suitable subjects. It would be obviously unsuitable to grow side by side two plants, one of which would make twice the growth of its neighbour. I think that an impetus may be given to a way of growing plants which is not yet at all valued as it ought to be. If an abbreviated list only can be given, let the best be named. A few might be noted suitable for centre, also for climbing the suspending wires, though of course these would not be trailers. Perhaps a selection of winter bloomers might be given separately.—Quidnunc.

3280.—**Double Pyrethrums.**—I should feel obliged if some one would explain in Gardening Illustrated the culture of double Pyrethrums, their winter treatment, and from cuttings. I have some very small plants just received from a nursery, and have potted them in ordinary soil.—A. C. D.

3281.—**Plants for Shady Wall and Roof of Conservatory.**—The end wall of my conservatory is continually shaded, owing to 4 ft. of the roof being necessarily without glass. What will be the best to cover such a wall, and also the part of the roof without glass? Will Lapagerias do?—C. J. R.

3282.—**Growing Cockscombs.**—Will any of the readers of Gardening tell me how to grow Cockscombs? the sort of soil they require, and the degree of heat? also the best time for sowing, &c.?—John D. McNally.

3283.—**Cucumber House.**—Will some reader give me instructions as to the best way to make a bed over a brick flue for growing Cucumbers? I intend building a wall 3 ft. 6 in. from the front wall, which will be 3 ft. 6 in. high. How should the brick flue be built—in the centre, or close to the front wall? and how should it be filled in?—A Subscriber.

Water Bouquets.—These can be made very easily, and form an exceedingly pretty variety of table decoration. The requisites are a glass shade (10 in. in diameter and 12 in. in height being the most suitable size), a substantial decanter stopper with flat head, a glass stand having a depth of about ½ in., and flowers and foliage. Arrange the latter as a bouquet loosely, tying the stalks to the stopper. Having a tub or bath containing sufficient depth of perfectly bright water, to immerse stand, shade, and flowers, insert the bouquet in the shade, place the shade upon the stand, and then, withdrawing the whole affair from the water, the shade will be found quite free from air bubbles, provided the surface of the glass stand is perfectly flat and close fitting to bottom. A few experiments will show which flowers and leaves give the best effect, also the best size for bouquet.—Scot.

POULTRY.

Much has been written about sawdust in the garden. I will with your permission give my experience of its use amongst poultry. I had some weeks since a brood of young chickens ill with that most troublesome complaint called by some gapes; I think it is more like bronchitis. One little chick was so ill, I expected its death daily. They had clean water to drink, their food being soaked bread and boiled rice, a little grease (without salt). The floor of their sleeping pen was made clean and sawdust thrown down, covering the floor about ½ in. In two or three days the little one, that breathed with difficulty standing with its mouth open, was well and the others improving. I do not give all the merit to the sawdust, but I think it is very purifying amongst chickens. We now use it in the hen-roost and dog-kennel. Our poultry are well fed; they have the run of a grass field plantation and yard (and often take possession of the garden); they ought to be healthy, but I lose more than I like every spring with the troublesome complaint before mentioned. I cured one once by giving it daily about half a teaspoonful of cod-liver oil. Before closing this paper may I ask if some of your readers will kindly tell me where I can purchase a couple of young pullets of the old-fashioned Polish breed mentioned by "Andalusian" in Gardening, November 15, 1880 (p. 571). I know by experience there is not a better sort. My last old hen died some time since, and I have not been fortunate enough to replace her.—Cymro.

Vermin in Fowl's House.—Allow me to suggest the following plan, which I have tried and found to answer admirably: Turn all your fowls out into the yard or run; then having closed up all the apertures in the house that smoke could not get out of, collect all the hay from the nests and put with it some damp brown paper to smoulder; set fire to it, go out, and close the door; leave it for about a quarter of an hour, so that the smoke gets well into all crevices; then open the door and let it out; meanwhile mix a little carbolic acid with some limewash, and with a brush well coat the interior of the house, taking care to let it run into all cracks, the ends of the perches, and behind, and all round the nests, for you will find the vermin by thousands in such places. Having finished the lime-washing, throw your house open to let it get nice and dry and fresh for the fowls at night; the smell of the carbolic acid will in no way hurt them, only do not get it on your clothes or fingers, as the result might not be pleasant.—W. C. N.

Vermin in Poultry.—These pests have been unusually plentiful and strong this summer. Nothing seems to reach them like carbolic acid. It can be bought very cheap at oil-shops and chemists, and should be used freely in the houses, either mixed with limewash in the proportion of a quart to a pailful of wash, or with water, half and half. In the former case it should be applied to the whole interior of the house, and all fittings such as nest boxes and perches should receive a coat, working it well into all crevices and corners with a proper whitewasher's brush. If mixed with water and kept in the house in an open vessel (but out of the reach of the birds), and a little sprinkled every day on the floor and walls, it will work wonders in keeping the number of vermin down. The runs also round about the house may have a sprinkling occasionally with advantage. Another plan is to fumigate the houses with sulphur, by burning a quantity on the floor, having previously stopped up all openings and guarded against any intrusion on the part of the fowls. Keating's Powder is very effectual, but is also expensive where several houses have to be seen to. But all methods for exterminating vermin are useless unless the houses be regularly cleaned out and a good dry dust bath be provided. During the moulting season the feathers should not be allowed to collect in the houses, as they afford a capital harbour for vermin.—Andalusian.

White Dorking Cockerel.—Can any of your readers of poultry news inform me where I can get a fine white Dorking cockerel hatched early this year?—Constant Reader.

Spanish Pullets.—In answer to an enquiry respecting first-class Spanish pullets in last week's number signed "Northampton," I think they can be had at Wyke Farm, Osterley Park, Isleworth.—T. J. B., *Crauford*.

Rearing Poultry.—Baily, of Mount Street, has published a very useful 2s. 6d. book. Tegetmeier's "Book on Poultry" also contains many useful hints on the above subject.—J. D.

Fowls Moulting.—What is the proper treatment for fowls whilst moulting?—T. P.

Houdan Fowls.—The following is a list of a few first-class dealers and breeders of Houdans: Messrs. Fowler, Prebendal Farm, Aylesbury; Messrs. Meredith, Tathwell, near Louth; Messrs. Baily, Mount Street, London, who also import Houdans direct from France. —J. D.

Fattening Chickens.—I have several good-sized chickens, which I keep shut up, and feed them with Maize and Barley, also middlings mixed with hot water, but they do not seem to get fat; am I treating them in the proper way?—E. D

BEES.

Supers for Bees.—Will "Apiarian" oblige by giving me some instructions as to how I should proceed to act under the following circumstances? —Last year I had a hive of bees given me in an old-fashioned straw hive. During the winter and early spring it became necessary to feed them; and I cut a hole 2 in. or 3 in. in diameter at the top of the hive, so as to easily supply them with food. This I did until they were able to maintain themselves. In June they swarmed, which swarm I had put in a double straw hive. Judging from the weight of both hives, I fancy they have gathered a fair quantity of honey; and, with a view to get some, I put a glass super on each hive, but have failed to induce them to work in them. Will "Apiarian" kindly tell me the cause? and the diameter of the glass supers I should use? and whether the glasses should have a ventilating hole at the top? and also a little melted beeswax be rubbed over the top as a guide? I have not used the upper half of the straw hive as a super, only covering the glass with it as a protection. Is this correct?—J. B. W.

HOME PETS.

Taming Canaries.—Can any reader inform me the best way to get canaries quite tame, and to come out of the cage?—J. F. W.

Canaries with Asthma.—"Bluebell" had better get some Tibb's Canaradyne, and give the bird two drops into its beak with a rounded, not a pointed, quill once a day. It is sold in 6d. and 1s. bottles. Any chemist will get it.—J. F. H. W.

Canary Losing its Feathers.—My canary used to be kept in a warm room, and was always pecking himself, losing a great many of his feathers, and made a queer noise in his throat, as mentioned in the Gardening lately. This spring he was put into a cool room which gets the morning sun for about an hour each day. I open the window when it is fine. The bird has his bath of cold water each alternate day. His food consists of Canary seed, Rape, and Millet mixed; no Hemp; he has been better without it. He has green food fresh every day, is now quite well, and as noisy as he once was quiet.—E. W. A.

COVENT GARDEN MARKET.

WHOLESALE PRICES.

Cut Flowers.

Abutilon, doz	..	..	0 3 0 0	Pelargonium (znl) dz bun			3 0 6 0
Arum Lilies	..	..	0 0 0 0	,, (large flower)	..		6 0 12 0
Bouvardia	..	..	1 0 3 0	,, (double)	..	..	6 0 12 0
Carnations, doz bun	..		4 0 9 6	,, (Rose-scented leaf)			3 0 6 0
Carnations (Tree) doz			1 0 3 0	Phlox, doz bun	..		6 0 9 0
Cornflower, doz bun	..		3 0 6 0	Pinks	..	..	4 0 9 0
Eschscholtzia	..	..	2 0 6 0	Primula (dbl) dz sprays			0 9 0 0
Eucharis, doz	..	..	5 0 6 0	Roses, doz bun	..		4 0 9 0
Ferns (various) doz bun			4 0 9 0	Stephanotis, doz trusses			3 0 6 0
Fuchsia	..	..	4 0 6 0	Sweet Peas, doz bun	..		3 0 6 0
Gardenia, doz	..	..	3 0 9 0	Sweet Sultan	..	..	4 0 6 0
Heliotrope, doz bun	..		0 0 6 0	Tropæolums	..	..	1 0 3 0
Mignonette, doz bun	..		2 0 6 0	Tuberoses, doz	..	..	1 0 3 0
Myrtle, doz bun	..		0 0 6 0				

Pot Plants.

Arbor-vitæ (golden), dz			3 0 18 0	Euonymus (variegated)			8 0 18 0
,, (common)			6 0 12 0	Ferns	..	..	6 0 18 0
Aralia Sieboldi, doz	..		12 0 30 0	Ferns (small) per boz			3 0 5 0
Begonias, doz	..	..	6 0 12 0	Ficus elastica, doz	..		18 0 60 0
,, (fine-foliaged)	..		6 0 12 0	Fuchsias	..	..	6 0 12 0
Berberis	..	..	4 0 9 0	Gardenias	..	..	18 0 36 0
Bouvardias	..	..	12 0 18 0	Mignonette	..	..	4 0 6 0
Clematis	..	..	9 0 19 0	Nasturtiums	..	..	3 3 6 0
Crotons	..	..	12 0 42 0	Palms (large) pair		..	15 0 42 0
Dracæna (green)	..		12 0 30 0	Palms (small) doz		..	18 0 60 0
,, (variegated)	..		18 0 60 0	Pelargoniums (scarlet)			2 6 9 0
Echeverias	..	..	4 0 6 0	,, (double)			6 0 13 0
Euonymus	..	..	6 0 12 0	Selaginella	..	..	3 0 4 9

Fruit.

Apples (culinary) bush			4 0 5 0	Pears (dessert kinds), dz			2 0 3 0
Grapes (English) lb	..		2 0 5 0	Pine-apples (St Michs) ec			5 0 15 0
Lemons, box	..	..	30 0 35 0	,, (English) lb			2 0 4 0
Oranges, 100	..	..	8 0 16 0				

Vegetables.

Beans (French), lb	..		0 2 0 6	Lettuce, score	..	..	0 4 10 0
,, (Runner)	..		1½ 0 0 2	Leeks, doz bun	..		1 6 3 0
Cabbages, tally	..	..	1 0 2 4	Mint	..	..	4 0 0 0
Carrots, doz bun	..		4 0 5 0	Mushrooms, pottle	..		1 3 1 9
Cauliflowers	..	..	0 4 0 6	Potatoes (rud knds) ton			100s. to 200s.
Celery, bundle	..	..	1 0 2 0	,, (Kidney), ton			120s. to 180s.
Corn Salad, half sieve			0 0 2 0				
Cress (plain), doz pun			0 0 2 0	Parsley, doz bun	..		2 0 4 0
,, (Watercress) dz bun			0 9 1 0	Radish, doz bun	..		1 6 3 0
Cucumbers, doz	..		2 6 5 0	Spinach, bus	..	..	0 0 2 0
Endive	..	..	2 0 3 0	Turnips, doz bun	..		4 0 5 0
Garlic, lb	..	..	0 0 0 6				
Horseradish, bun	..		3 0 5 0				

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HARDY FLOWERS: THEIR USES AND CULTURE.

As this is the time to prepare for the harvest of another year's beauty, I want to speak to those who hold that the flower garden, or terrace garden, or parterre, or whatever they like to call it, is not a proper place for hardy flowers. The ugliest and most needless terrace garden in England may be adorned in the most beautiful way with hardy plants alone. People are beginning to see the folly of the "bedding-out" system, and a little pressure is put in the direction of change. When gardens have been arranged for the expensive "show" now common, it is not always pleasant or convenient to turn to a different system; and we frequently hear the remark that hardy flowers are "all very well in their place," and so on. According to this crude notion one may have a Verbena in the flower garden, but must not bring superb scarlet or other Lilies near it! Are we not all wrong in adopting one degree, so to say, of plant life as the only fitting one to lay before the house? What should we say of the gardener who filled his conservatory with low soft-wooded plants only and omitted from his collection Camellia, and Palm, and Heath, and Azalea? This is what we have long been doing in the flower garden, and by changing this we can effect great good at once. We have so long been accustomed to leave flower beds raw, and to put a number of plants out every year, forming flat surfaces of colour, that no one ever thinks of the higher and better way of filling them. But surely it would be desirable to consider whether it would not be advisable in most cases to fill the beds permanently rather than leave them in this naked or flat condition throughout the whole of the year. In Nature, vegetation in its most beautiful aspects is rarely a thing of one effect, but a union or mixing of different types of life, and a succession of different seasons of b'ooming. So it is in the garden; the most beautiful effects must be obtained by a variety of different forms so combined that they help each other, and give us a succession of pictures and of varied interest, instead of monotony or bareness. If any place asks for permanent planting it is the spot of ground immediately near the dwelling house, for no one can wish to see large grave-like masses of soil frequently dug and disturbed near the windows, and few care for the result of all this, even when the ground is well covered during a good season. But everybody could form beds that would look fairly well at all seasons by the use of our choicer shrubs of many kinds—Spiræa, Rhododendron, Azalea, Dwarf Cypress, Retinospora, Japan Quince, Tree Heath, Comptonia, Coronilla (in mild districts), Viburnum, Clematis, Aralia, Honeysuckle, Weigela, Sweet Brier, Vine, Hydrangea. Arbutus (Croomi), Azara, Skimmia, Rock Rose, Tamarix, Daphne, Yucca, Tree Pæony, Escallonia, new large-flowered Hypericums, choice Hollies, Osmanthus. Why should we not use a beautiful Andromeda, or a Kalmia, or a rare evergreen Barberry in the flower garden in the same way as we do a Camellia, an Acacia, or a Tree Fern in the conservatory. We could do so with infinite happy effects, and one of the secondary results would be improved culture for and much more beauty from our many choice hardy shrubs now so often neglected in the shrubbery. Thoroughly prepare the beds, put in choice shrubs, which, never growing into low trees or tall shrubs to obscure the view, nevertheless adorn the earth all the winter as well as the summer, and give us a broken as well as a beautiful surface. Between them in open spaces and round their feet, so to say, allow for the planting of a variety of the choicer hardy plants, which would come up and flower and pass away, and vary the scene and give us pictures following the seasons. We should not have any definite pattern to weary the eye; but we should have quiet grace, and verdure, and little pictures month by month. The beds, filled with shrubs, and garlanded with Ivy and other evergreens and creepers, would afford everywhere nooks and spaces where, among the shrubs, some of the many fine, hardy Lilies could be grown, and the Tritomas, Gladioli, Phlox, Pentstemon, Iris, tall Anemone, Pæony, and Delphinium. The choice shrubs recommended for such beds are not gross feeders like trees, and seem to encourage the finer hardy bulbs and flowers. The shrubs also relieve the plants by their bloom or foliage, and when a Lily or Cardinal-flower fades after blooming it is not noticed as it might be in a stiff border. Among our flowering shrubs we have the perpetual-flowering Rose on its own roots to help us with our plans. This in many forms is perhaps the greatest treasure of all, and its effect so disposed will be better than in any special arrangement. We must get rid of the old collection of ugly sticks formally arranged as a Rose garden. It should, apart from its use in borders and mixed groups, be planted in a natural manner, without formality, in simple, large, well-prepared beds, the plants trained as bushes or pegged down, so as to let their foliage and shoots spring from the

TYPE OF BEST HARDY FLOWERS: THE ROSY HEART (DIELYTRA SPECTABILIS).

ground. No Rose beds can be made in this way without offering positions for beautiful hardy plants. We may have many flowers ben[illegible] the Roses, or to stand among them or a[illegible]ve them like fair Lilies. One of the prettiest garden borders I know of is against a small house. At the back or garden side, instead of the walk coming near the windows, a bed of various choice shrubs, varying from 9 ft. to 15 ft. in width, is against the house and out offices. Nothing in this border grows high enough to intercept the view, but just high enough to hide the walk. Looking out of the windows on the ground floor of the house, one sees the foliage and bloom of the border, but not the walk, the eye reaching a green lawn beyond. Among the shrubs are planted tall evening Primroses, and Lilies, and Meadow Sweets, and tall blue Larkspurs; and these, after the early shrubs have flowered, peer above their leaves.

Selections of Hardy Flowers.

So many of the errors and disappointments as to hardy flowers and flower gardens, too, have arisen from a bad or careless selection of plants, that we publish *The Garden* series of selections of hardy flowers. These have been made by persons thoroughly familiar with the plants in question, and are brought down to the latest date, omitting very new or rare species. They have been revised again and again with care, and may be recommended to our readers inexperienced in these plants, as a safeguard against purchasing inferior or weedy species, which are far too numerous. We begin this week with the hardy herbaceous division—vigorous plants for borders, beds, or groups, which are thoroughly hardy, and may be grown on any soil. All soil, however, for such plants should be deep, well enriched, and thoroughly prepared at first. The colour and height of the plants in the annexed list are given in order that planters may exercise some little taste in their arrangement.

Arrangement of Hardy Plants.

The many beginners in the culture of hardy flowers who are at present considering their operations will do well to bear in mind the following points:—

Select only good plants, and throw away weedy and worthless kinds; there is no scarcity of the very best, as will be seen by our list below.

Put, at first, the good kinds selected in lines across 4-ft. nursery beds, so that a stock of young and strong plants may be at hand, and that you may be able to exchange with others as well as form arrangements or groups in any way desired.

The mixed border is only one of many ways in which hardy flowers may be grown. But as a mixed border will be formed by many, it is essential that it should be well and carefully done. Place it where it cannot be robbed by the roots of trees; see that the ground is thoroughly prepared, and rich, and deep enough—never less than 2½ ft. of the best friable soil. The soil should be so deep that in a dry season the roots could seek their supplies far below the surface. On the making of the border depends, in fact, whether the vegetation will be noble and graceful or stunted. If limited to one border only, some variety

ENGLISH NAME.	LATIN NAME.	COLOUR.	HEIGHT.
Double Sneezewort	Achillea Ptarmica fl.-pl.	white	3 ft.
Noble Yarrow	Eupatorium	yellow	3—4 ft.
Rosy Milfoil	Millefolium roseum	rose	2—3 ft.
Monkshood	Aconitum Napellus	purple	4—6 ft.
Two-coloured Monkshood	bicolor	purple and white	4—6 ft.
Japanese ,,	japonicum	purple	3—4 ft.
Autumn ,,	autumnale	purple	3—4 ft.
Orange-flwrd. Alstrœmeria	Alstrœmeria aurantiaca	yellow	3 ft.
Italian Alkanet	Anchusa italica	blue	4—5 ft.
Japanese Windflower	Anemone japonica	rosy-red	3 ft.
WhiteJapanese ,,	Honorine Joubert	white	3—4 ft.
The Pasque Flower	Pulsatilla	purple	6—10 in.
Poppy Anemone	coronaria, many vars.	various	6—10 in.
Alpine Anemone	alpina	white	
Scarlet Windflower	fulgens	brilliant scarlet	6—9 in.
Snowdrop Anemone	sylvestris	white	9—15 in.
St. Bruno's Lily	Anthericum Liliastrum	white	1½—2 ft.
Columbines	Aquilegia vulgaris and vars.	various	2 ft.
Golden Columbine	chrysantha	yellow	2—3 ft.
Great Thrift	Armeria cephalotes & vars.	deep rose	1—1½ ft.
Large-flowered Thrift	grandiflora	deep rose	1—1½ ft.
Dwarf Milk Vetch	Astragalus dasyglottis	deep purple	6—9 in.
Long rosy-leaved Starwort	Aster longifolius formosus	rose	2 ft.
Large-flowered ,,	Amellus bessarabicus	dark purple	2 ft.
Smooth ,, ,,	lævis	dark purple	3—5 ft.
Spreading ,,	turbinellus	deep mauve	3—5 ft.
Variegated ,,	versicolor	various shades purple	4—6 ft.
Southern Baptisia	Baptisia australis	dark purple	3—5 ft.
Large-flowered Betony	Betonica grandiflora	reddish-purple	1—2 ft.
Double Marsh Marigold	Caltha palustris fl.-pl.	yellow	9—15 in.
Van Houtte's Bellflower	Campanula Van Houttei	dark purple	1—1½ ft.
Noble-flowered ,,	nobilis and vars.	red and white	1—1½ ft.
Celtis-leaved ,,	celtidifolia	blue	2—3 ft.
Clustered ,,	glomerata speciosa	rich deep purple	1—1½ ft.
Nettle-leaved ,,	urticæfolia fl.-pl. alba	white	1—2 ft.
Carpathian ,,	carpatica and vars.	blue, mauve, white	9—12 in.
Host's Harebell	Hosti	blue	9 in.—1 ft.
Peach-leaved Bellflower	persicifolia and vars.	white	1½—3 ft.
Sarmatian ,,	sarmatica	pale mauve	2—3 ft.
Double Cuckoo-flower	Cardamine pratensis fl.-pl.	mauve	9—12 in.
Red Valerian	Centranthus ruber & vars.	deep red to pink	1½—2 ft.
Lance-leaved Tickseed	Coreopsis lanceolata	yellow	1½—2 ft.
Slender ,, ,,	tenuifolia	yellow	12—15 in.
Iberian Scorpion Senna	Coronilla iberica	yellow	6—9 in.
Rosy ,, ,,	varia	rose	9 in.—1 ft.
Noble Fumitory	Corydalis nobilis	yellow	1 ft.
Larkspur	Delphinium in var.	chiefly purple and blue	2—10 ft.
Bleeding Heart	Dielytra formosa	reddish-purple	9 in.—1 ft.
Rosy ,,	spectabilis	rosy-crimson	1—1½ ft.
American Cowslip	Dodecatheon Media & vars.	deep rose	9 in.—1 ft.
Jeffrey's ,,	Jeffreyanum	purplish-rose	12—15 in.
Purple Corn-flower	Echinacea purpurea	reddish-purple	3—4 ft.
Globe Thistle	Echinops Ritro	purple	3—5 ft.
Russian ,,	ruthenicus	purplish-blue	3—5 ft.
Willow Herb	Epilobium angustifolium		4—6 ft.
	and var.	deep rose and white	2—4 ft.
Silky ,,	sericeum	deep rose	9—15 in.
Barrenwort	Epimedium pinnatum	yellow	
Showy Fleabane	Erigeron speciosum	purple	9—15 in.
Alpine Sea Holly	Eryngium alpinum	deep blue	1½—3 ft.
Amethyst ,,	amethystinum	azure blue	1½—3 ft.
Bourgat's	Bourgati	light blue	1½—2½ ft.
Siebold's Blue Day Lily	Funkia Sieboldi	pale lilac	1—1½ ft.
Japan ,, ,,	japonica	white	1—2 ft.
Cuban Lily	subcordata grandiflora	bluish	1—2 ft.
Bristled Gaillardia	Gaillardia aristata	red and yellow	1—3 ft.
Large-flowered ,,	grandiflora	red and yellow	1—3 ft.
Goat's Rue	Galega officinalis and var.	pink or white	3—4 ft.
White ,,	alba		
Willow Gentian	Gentiana asclepiadea & vars.	deep purple or white	9—15 in.
Gentianella	acaulis	blue	4—6 ft.
Armenian Crane's Bill	Geranium armenium	violet-purple	3—4 ft.
Iberian	ibericum	purple	2—3 ft.
Blood Geranium	sanguineum and vars.	purplish-crimson	1—2 ft.
Double Scarlet Geum	Geum coccineum fl.-pl.	brilliant scarlet	1—1½ ft.
Autumn Sneezeweed	Helenium autumnale gran-		
	diceps	yellow	5—8 ft.
Double Sunflower	Helianthus multiflorus		
	flore-pleno	yellow	2—3 ft.
Prairie ,,	rigidus	yellow	1½—3 ft.
Common Christmas Rose	Helleborus niger and others	white and pinkish	1—2 ft.
Oriental ,, ,,	orientalis and vars.	purple and white	1—2 ft.
Colchican ,, ,,	colchicus	deep purple	1—2 ft.
Double Day Lily	Hemerocallis disticha flore-		
	pleno	reddish yellow	1—2 ft.
Yellow ,,	flava	yellow	1—2 ft.
Buff ,,	fulva	coppery-red	1—2 ft.
Grassy ,,	graminea	yellow	1—2 ft.
Evergreen Candytuft	Iberis sempervirens & vars.	white	1—1½ ft.
Garrex's ,,	Garrexiana	white	9—15 in.
Corræ-leaved ,,	corræfolia	white	9—15 in.
Iris	Iris in great varieties	various	1—3 ft.
Flame-flower	Kniphofia (Tritoma)	orange-scarlet	2—4 ft.
Large-flwd. Everlasting Pea	Lathyrus grandiflorus	deep rose	4—6 ft.
Broad-leaved ,,	latifolius splendens and	deep rose	4—6 ft.
Sibthorp's ,,	Sibthorpia [white var.	deep rose	4—6 ft.
Spiked Snakewort	Liatris spicata	purple	2—4 ft.

ENGLISH NAME.	LATIN NAME.	COLOUR.	HEIGHT.
Dalmatian Toad-flax	Linaria dalmatica	yellow	2—4 ft.
Perennial Flax	Linum perenne and vars.	blue	1—1½ ft.
Narbonne Flax	narbonnense	light blue	1—1½ ft.
Yellow ,,	flavum	yellow	9—12 in.
Tree ,,	arboreum	yellow	1—1½ ft.
Lupin	Lupinus polyphyllus & vars.	purple and white	3—5 ft.
Dble. Evening Lychnis	Lychnis vespertina fl-pl alba	white	2—3 ft.
Dwarf ,,	Viscaria splendens fl-pl	deep rose	9—12 in.
Chalcedonian ,,	chalcedonica fl.-pl.	orange-red	1½—2 ft.
Purple Loosestrife	Lythrum Salicaria splendns.	reddish-purple	3—6 ft.
White Musk Mallow	Malva moschata alba	white	1—1½ ft.
Oswego Tea	Monarda didyma	crimson	2—3 ft.
Wild Bergamot	fistulosa and vars.	various	2½—4 ft.
Missouri Evening Primrose	Œnothera missouriensis	pale yellow	6—12 in.
Shrubby ,,	fruticosa	yellow	1½—3 ft.
White ,,	speciosa	white	9 in.—2 ft.
Willow ,,	riparia	yellow	1—1½ ft.
Young's ,,	Youngi	yellow	1½—2½ ft.
Hoary Vetch	Orobus canescens	blue and yellow	9—15 in.
Orange ,,	aurantius	orange-yellow	1½—2 ft.
Blue ,,	cyaneus	blue and purple	9—15 in.
Slender ,,	flaccidus	blue and purple	9—15 in.
Spring ,,	vernus and vars.	blue and purple	9—15 in.
Oriental Poppy	Papaver orientale & vars.	brilliant scarlet	3 ft.
Anemone-flwd. Pæony	Pæonia anemonæflora & vars.	various	1½—3 ft.
Common ,,	officinalis, my. dbl. vars.	various	1½—3 ft.
Slender-leaved ,,	tenuifolia and vars.	dark red	1—1½ ft.
Early Pentstemon	Pentstemon procerus	purple	6—9 in.
Bearded ,,	barbatus Torreyi	scarlet	3—8 ft.
Jerusalem Sage	Phlomis Herba-venti	purplish-violet	1—2 ft.
Russell's ,,	Russelliana	yellow	2—5 ft.
Ovate Phlox	Phlox ovata	deep rose	1 ft.
Shining ,,	glaberrima	rose	9 in.—1 ft.
Canadian ,,	canadensis	fine rose	9 in.—1 ft.
Panicled ,,	paniculata and vars.	various	2—4 ft.
Blue ,,	divaricata	porcelain blue	9—15 in.
Double Cinquefoil	Potentilla hybrida fl.-pl. vrs.	various	1—1½ ft.
Larpent's Leadwort	Plumbago Larpentæ	blue and violet	9—15 in.
Giant Oxeye	Pyrethrum serotinum	white	4—6 ft.
Double Pyrethrum	roseum & many vars.	various	1—4 ft.
Newman's Coneflower	Rudbeckia Newmani	yellow	2—3½ ft.
Double Crowfoot	Ranunculus acris fl.-pl.	yellow	9 in.—2 ft.
Fair Maids of France	aconitifolius fl.-pl.	white	9 in.—1½ ft.
White Crowsfoot	amplexicaulis	yellow	6—12 in.
Meadow Saxifrage	Saxifraga granulata fl.-pl.	white	9—12 in.
Strap-leaved ,,	(Megasea) ligulata, vrs.	pink (various shades)	1—1½ ft.
Thick-leaved ,,	crassifolia	pink (various shades)	1—1½ ft.
Heart-leaved ,,	cordifolia & other vars.	pink (various shades)	1—1½ ft.
Caucasian Scabious	Scabiosa caucasica	pale blue	1½—3 ft.
Alpine Skullcap	Scutellaria alpina and vars.	purple and yellow	9—12 in.
Showy Stonecrop	Sedum spectabile	deep pink	1—1½ ft.
Tyerman's Groundsel	Senecio pulcher	magenta	1½—3 ft.
Palm-leaved Meadow Sweet	Spiræa palmata	crimson	1½—3 ft.
Goat's Beard	Aruncus (good vars.)	white	2—4 ft.
Dropwort	filipendula fl.-pl.	white	1½—2½ ft.
Queen of the Prairies	venusta	crimson	1½—3 ft.
Sea Lavender	Statice latifolia	purple	1½—2½ ft.
Bohemian Comfrey	Symphytum bohemicum	reddish-purple	2—3 ft.
Caucasian ,,	caucasium	deep blue	1½—2 ft.
Blue Spiderwort	Tradescantia virginica vars.	deep purple or white	1—2 ft.
Asiatic Globe Flower	Trollius asiaticus	yellow	1½—2 ft.
Fortune's ,,	Fortunei	orange	1½—2 ft.
European ,,	europæus and vars.	yellow	1½—2 ft.
Mullein	Verbascum phlomoides	yellow	7—9 ft.
Chaix's ,,	Chaixi	yellow	6—9 ft.
Austrian Speedwell	Veronica austriaca	blue-purple	1—1½ ft.
White ,,	candida	deep purple	1—1½ ft.
Clustered ,,	corymbosa	deep purple	1—1½ ft.
Japanese ,,	longifolia subsessilis	deep purple	1½—3 ft.

in the soil will be necessary to meet the wants of peat and moisture-loving plants.

In planting, plant in groups, and not in the old dotting way. Never repeat the same plant along the border at intervals, as used to be done with favourites. Plant a bold, natural group of it, or two or three groups if you must have so many, and then be done with it.

Do not be particular to graduate the plant from the back to the front, as is generally done, but occasionally let a bold and sturdy plant come towards the edge; and, on the other hand, let a little carpet of a dwarf plant pass in here and there to the back, so as to give a broken and beautiful instead of a monotonous surface.

Have no patience with bare ground. Cover the border entirely with dwarf plants; do not put them along the front of the border only, as used to be done. Let Hepaticas, and double and other Primroses, and Saxifrages, and Golden Moneywort, and Stonecrops, and Forget-me-nots, and dwarf Phloxes, and many similar plants cover the ground everywhere—the back as well as the front of the border—among the tall plants. Let these little ground plants form broad patches and colonies here and there by themselves occasionally, and then let them pass into and under the other plants. A White Lily will be none the worse, but all the better, for having a colony of creeping Forget-me-nots about it in the winter or spring. The charming variety that may be thus obtained is infinite.

The border should remain for years without any digging in the usual sense. All digging operations should be confined to changes and to the filling up of blanks with good plants, and to the rearrangement of ground plants. If the border is in the kitchen garden, or any other position in which it is desired to cut it off from its surroundings, erect a trellis at the back of it from 6 ft. to 10 ft. high, and cover this with climbing plants—Clematises, Roses, Sweet Briers, Honeysuckles, or any beautiful and thoroughly hardy climbing plants, not twined too stiffly, but allowed to grow into free wreaths. Roses of the very hardiest kind only should be employed, so as to guard against gaps in severe winters; the old single Clematis, the mountain and the sweet autumn Clematis (C. flammula), as well as other single kinds, should have a place here as much as the larger forms. The trellis may be made in the usual way, of wood or iron, or in a simpler and certainly handsomer way, of rough tree posts and branches.

In case the soil is not very deep or not very well prepared, and the surface not covered with green life in the way laid down, it will be well in many cases to mulch the ground by placing 2 in. of some light sweet dressing on it in summer. With all plants of doubtful merit which grow coarsely and are apt to overrun

Type of Best Hardy Flowers (a Day Lily).

other things, and, after all, furnish but poor and short-lived bloom, such as some of the Michaelmas Daisies and the Golden Rods, and a host of other plants that have been grown in gardens, the best way is to take them out to the shrubberies and ditches and let them take their chance.

When the plants are old and have got rather too thick, never hesitate to move them on a wet day in the middle of August or July, as well as in the middle of winter. Take them up and put a fresh bold group in fresh ground; they will have plenty of roots by the winter, and will flower much stronger the following spring han if they had been transplanted in spring or in winter.

Do not pay much attention to labelling; if a plant is not worth knowing it is not worth growing; let each good thing be so boldly and so well grown and placed that it impresses its individuality upon us.

Lilium speciosum Out-of-doors.—About twenty years ago a Lily bulb was planted in my garden in November; the person who planted it had little knowledge of Lilies, and believed that they were all hardy. The bulb in question was left, therefore, in the open garden to the mercy of the weather, which that winter proved to be very severe. Early in the following May, having ceased to remember the planting of this bulb, I was puzzled with the appear-

ance of a plant which had come up, and was showing foliage, which appeared to be strange to me. It was not long, however, before I saw that the plant was a Lily, and I then remembered the planting of it. Well, it grew most vigorously, and in due time—I think in the first week of September—the first bloom appeared, and when I saw it I was not a little surprised to find that my Lily was L. speciosum (lancifolium) roseum, which I had hitherto seen under glass only, coddled and petted as a tender plant, and not able to resist the rigours of a Scottish winter. After this my Lily received due attention, and the second bloom, that is, the bloom of the following year, and the vigour of the plant, convinced me that this Lily was hardy, and one of the finest of plants for the outdoor garden. From a single stem my plant increased year by year till the stems numbered about thirty, but by this time they had begun to grow weaker, and the blooms were growing smaller. It occurred to me that the soil was exhausted, so I resolved on seeing what was at the root, and in making the shift I found deep in the soil quite a nest of bulbs; I forget the number, but there were more than a dozen. They were separated and planted in fresh soil, and now I have bulbs by the hundred, and blooms of the greatest beauty by the thousand. So far as my experience goes, L. auratum is equally hardy, and has the advantage of blooming earlier; I had it in bloom in July, but the bulb was planted out early in spring. My garden rests on a porous rock which affords perfect drainage, and greatly helps to keep tender plants in the open air sound during winter.—R. C. R., *Ayrshire*.

Violets on Banks.—Violets are such universal favourites that any vacant spaces may be profitably planted with them by way of additions to the regular beds of them in kitchen gardens or forcing grounds. As a rule, we get the finest blossoms of both double and single varieties from one-year-old plants, raised annually from runners, and confined to single crowns after the manner in which Strawberries are prepared for forcing. It frequently, however, happens that there are warm sheltered banks under the partial shade of orchards and by woodland walks where, with good preparation previous to planting, Violets will flourish for years, and produce abundance of the finest blossoms with but little attention except that of keeping coarse weeds from overgrowing them. I have just planted such a bank under the shelter of a tall Hawthorn hedge; it was prepared as follows—the soil, being stiff and encroached on by roots, was deeply cultivated, and several loads of roads' scrapings and leaf-mould were added to it in the form of a top-dressing, sloping it gently to the south. In this the runners of Neapolitan, Double Blue, and the Czar (single blue) were planted 1 ft. apart each way, and kept watered until they had become well established. The Czar, being a vigorous kind, will probably overgrow the other sorts in time, but after four or five years' existence such banks will well repay replanting, and charming combinations may be formed by adding such roots and bulbs as those of Lily of the Valley, Squills, and other plants of like character that succeed under similar circumstances.—J. G. H.

The Three-leaved Gillenia (Gillenia trifoliata).—Lovers of hardy flowers who do not possess this plant should at once add it to their collection. It has numerous erect, slender, rigid stems, some 2 ft. in height, branching in their upper portion into a loose panicle of pure white flowers. This plant has a graceful, airy, distinct appearance, and when in full bloom forms a very pleasing object in the flower garden. When better known it will become a general favourite.—J. C., *Byfleet*.

Alstrœmeria aurantiaca.—This is one of the most effective species of this family of hardy perennials, and is worthy of more extensive patronage that it now receives. The flowers are of a bright orange-yellow, distinctly marked with black, and are produced continuously for a considerable period. For furnishing cut flowers the Alstrœmerias are valuable, but they should be planted in well-drained soil of a free warm nature, and should be well manured early in the summer.—J. C., *Byfleet*.

Snowdrops.—How much prettier these charming early spring flowers look when growing upon a carpet of green foliage than when left to look their best, or rather worst, upon the bare soil, let any one who may desire put to the test. I have just lifted all my bulbs and replanted them singly, not in clumps as before, working and cleaning the soil well, and adding a good dressing of road manure, dibbling in the tiny bulbs thickly all over, then adding a surfacing of fine soil, treading it over firmly, then raking and finally pricking in all over the surface a carpet of Sedum Lydium in one part, and of the Herniaria glabra in the other. These will make a bright surface of green during the winter, and then in the early spring the beautiful white Snowdrops will peep through, resembling gems bedecking a carpet of verdure.—A. D.

Violets by Post.—The season for Neapolitan and other Violets having again arrived, it may not be uninteresting to your readers to know that any one, though away from home, may enjoy them fresh every morning from October to May through the post. They are so well adapted for travelling, that a journey in a tin box of 200 or 300 miles does not in the least impair their sweetness or freshness. For Violets we have tin boxes made especially for passing through the post; they are 6 in. long, 2½ in. wide, and 2 in. deep. In these the blossoms are laid flat as they are gathered, between layers of Violet leaves pressed down tolerably

Type of the best Hardy Flowers—The Rocky Mountain Columbine (Aquilegia cœrulea).

close until quite full, when a layer of leaves is put on and the lid closed tightly down; the address may be pasted or written on the lid, and they may be relied on to reach their destination without being crushed, as they generally are, in cardboard boxes, and in fresher condition, as in tin they are cool and air-tight. Boxes of the size just named, when full, require three penny stamps, and hold several dozens of the finest blossoms. Boxes of this kind are equally serviceable for choice flowers, such as Gardenias, Rose-buds, Orchids, or Stephanotis; their size may be varied, according to the flowers intended to be sent in them, but I feel sure that any one at a distance from a garden, and receiving from home or their friends every morning a box of fresh Violets, will find it one of the by no means small advantages which the Post Office affords. I may add that Violets look best garnished with Violet leaves, but the leaves of the Neapolitan variety are not so effective as those of the single blue, such as The Czar and hardy Russian kinds.—J. G. H.

Hardy Cyclamens.—We are so much accustomed to see the bright flowers of the Persian Cyclamens in our greenhouses, that many never think of Cyclamens as hardy flowers. They are, however, excepting the Persian one, as hardy as Primroses; but they love the shelter and shade of low bushes or hill copses, where they may nestle and bloom in security. That they are hardy is not a reason why they should thrive in a bare exposed border. In such places as they naturally inhabit there is usually the friendly shelter of Grasses or branchlets about them, so that the large and handsome leaves are not so exposed that they are torn to pieces by wind or hail. Thus, for example, the Ivy-leaved Cyclamen is in full leaf throughout the winter and early spring, and for the sake of the beauty of the leaves alone it is desirable so to place the plants that they may be saved from injury. By acting on these considerations it is easy enough to naturalise the hardier kinds of Cyclamen in many parts of the country. Good drainage is necessary for the successful culture of Cyclamens in the open air. The species grow naturally among broken rocks and stones mixed with vegetable soil, grit, &c., and are therefore not liable to be surrounded by stagnant water. Mr. Atkins, of Painswick, who has paid much attention to the culture of Cyclamens, and has succeeded with them in a very remarkable degree, thinks that the tuber should in all cases be buried beneath the surface of the earth and not exposed, as in the case of the Persian Cyclamens grown in pots. His chief reason for this opinion is that in some species the roots issue from the upper surface of the tuber only. They enjoy plenty of moisture at the root at all seasons; they thrive best in a rich, friable, open soil, with plenty of well-decayed vegetable matter in it. They are all admirably adapted for the rock garden, enjoying warm, sheltered nooks, partial shade and shelter from dry, cutting winds. They may be grown on any aspect if the essential conditions above mentioned be secured for them, but an eastern or south-eastern aspect is best, always provided there is partial shade. We have seen them growing under trees among Grass, where they flowered profusely every year without attention.

ROSES.

Preparation of the Ground for Roses.—Supposing one is about to prepare a bed or border for Roses where the soil happens to be "stiffish loam," I thing it would be bad judgment to apply as manure any compound of an adhesive description; for such soil the manure ought to have a contrary tendency, and at the same time unite the necessary stimulating element—such substances as stable manure, sand, leaf-mould, and lime-rubbish incorporated, and allowed to remain for some months before using. On the other hand, for soil naturally poor and light the compound may be composed of cow manure, old night soil, and fresh stiff loam containing as much fibre as possible. These, with a liberal supply of liquid manure laid in a heap for a time, make splendid material for Roses when grown on light ground. In any soil the Rose is a greedy feeder, and demands annual manuring. In making a Rose garden, if the subsoil be at all stiff and retentive of water, it ought first to be properly drained, conveying the water to some distance by a main drain. Should the subsoil be sandy and gravelly, and drainage already exist—unless, as sometimes happens, there are springs which require to be drawn off artificially, thus preventing them from over-sopping the soil, in which case after draining and allowing time to draw off the superfluous damp—the ground may be well trenched, depositing at the bottom of the trench a good store of prepared compost, besides mixing the overlying body of soil with goodly portions of the same material; as the trenching process goes on heap the surface into deep rough ridges, and leave it in that state all the winter, that it may be properly pulverised by the united action of frost, wind, and rain. Again, in March, previous to planting, let the ground be partially trenched after a top-dressing of wood-ashes or burned clay should it be adhesive. Top-dress the light soil with the compost recommended as a suitable manure for its kind. The ground is now in readiness to receive the plants. Planting may be proceeded with; and as to the distance to place one plant from the other in the rows, that depends much upon the vigour or delicate nature of the respective kinds—some require 15 in. or less between, others as much as 3 ft. The habit of the plant should be understood as nearly as possible before its situation in the bed is fixed.—S. A.

Propagating Roses.—Two years ago I put in three rows of Rose cuttings of many varieties in October, and nine out of every ten made good plants the first year. During sharp weather I protected them by means of a little Fern.—G. R.

House and Window Gardening.

Insects on Window Plants.—The family of aphides supplies by far the greatest number of the pests which infest plants grown in rooms, and on account of their minuteness and remarkably rapid propagation they are very difficult to extirpate. The means both of preventing their devastations and also of extirpating them where they have established themselves, consist in good culture, cleanliness, fumigation, sprinkling or washing with various liquids, and dusting with good insecticide powders. By good culture, which includes ventilation at the proper time, and keeping the plants in a position not too warm nor too far from the light, the plants are enabled to form strong, healthy leaves, which are less liable to be attacked by such insects than if they were less favourably circumstanced. By attending to cleanliness all the decaying leaves will be removed on which the eggs and young of the insects often lie. When young shoots and leaves are much infested with them the best thing to do is to cut them off altogether and burn them, as when so attacked they, even when thoroughly cleansed from insects, are usually distorted or perish soon after. Plants from which they are to be removed should be shifted from among the other plants into a place where no others are near them. The stem-shoots and both sides of the leaves should be carefully brushed and then washed with warm water and a sponge to remove the "honeydew" with which the stems and leaves of such plants have become covered. If the infested plant be small, take three or four Laurel leaves, beat them all over with a hammer, so as to thoroughly bruise them; then place them round or under the plant and cover with a small bell-glass. Let all remain closed for a few hours, and the aphides will be found dead, each hanging by its proboscis only. If this process be repeated within a day or two to make sure, the plant will be perfectly freed, and in some cases it is not again attacked. This way of killing aphides may be acceptable to those who dislike Tobacco smoke; all danger arising from an overdose of it to a very tender plant is avoided; and the Laurel is so generally grown, it must be almost everywhere at hand for the purpose. The pot and the surface of the soil should in all cases be cleaned and thoroughly freed from all insects which may have fallen on them.

Mountain Ash Berries and their Uses.—I have frequently made excellent jelly from the berries of the Mountain Ash, or "rowans," as they are termed by the country people of Scotland. I have never observed there was much waste, but consider that the quantity of jelly produced is fairly proportionate to the quantity of berries used. The sugar required, however, is a half more than what is necessary for Black Currants; but of course the additional sugar gives additional jelly. The Mountain Ash jelly has a fine bright colour, and the flavour is not unlike marmalade; and it might well find a place on the table with any other home-made preserve. Last autumn, after making what jelly I required, I had a considerable quantity of berries left, and, being unable to dispose of them otherwise, they were thrown out in the garden, and covered in a heap of fine coal ashes, which were being collected from the house. This was in the middle of October. A day or two before Christmas a friend happened to mention how much she would appreciate a bunch or two of Mountain Ash berries for parlour decoration, but she had found it impossible to obtain them. I recollected my buried "rowans," and on removing some of the ashes I found the berries as fresh as when I put them there, and, with a slight rinsing in cold water, they were made as clean as when taken from the tree. My friend was delighted at receiving such a rare and unexpected addition to her floral devices; and while a portion of the berries was used in adorning her Christmas tree, the rest were devoted to the jelly-pan, and served at the Christmas feast.—J. C. McL.

Virginian Creeper for Shading Glasshouses.—In a villa garden near London I noticed the other day a novel as well as useful mode of shading glass structures during the summer months. The house in question has a circular roof, glass front, with a wall at the back. Outside, at one end, is growing a fine, vigorous Virginian Creeper, a strong shoot of which is trained along the wall, in a line with the roof, the whole length of the house. From this shoot or main rod other shoots are produced, about 1 ft. apart, which are trained perpendicularly down the roof to the front of the house. By this simple means an excellent natural shade is secured without the obstruction of so much light, as in the case of most shading material. When the foliage dies off in the autumn, the shoots can be cut back to within a few eyes of the main rod, and will start again into growth in the spring just at the time when shading is becoming necessary. This kind of shading is well worthy of adoption, on account of its handsome appearance, cheapness, and durability.—S.

FRUIT.

Keeping Apples from Shrivelling.—There is often a great loss arising from late Apples and Pears shrivelling after being gathered. Sometimes the cause may be gathering too early; in other cases the fruit room may be unsuitable for keeping late fruit; and there are some kinds of Apples, such as Court Pendu Plat, that will shrivel almost under any circumstances if managed in the ordinary manner. The best way of keeping late Apples that show a tendency to shrivel is to pack them in jars, boxes, or barrels, and strew dry sand amongst them, taking care, of course, that both in gathering from the trees and in packing no bruised or bird-pecked fruits are placed amongst that which is sound; they should be stored in a dry, cool place, and not disturbed until required for use.—H.

Type of the best Hardy Flowers.—Globe Flower (Trollius).

Doyenne Boussock Pear.—This excellent variety should not be overlooked by any one who possesses a dozen Pear trees, and who intends now to add to their number. It has to recommend it four very desirable peculiarities—size, appearance, flavour, and productiveness. With regard to the first and last, I may mention that I have just taken from one stalk three, the combined weight of which amounted to 1½ lb., and all three were nearly of equal weight; and as to the second, not only is the fruit handsome, but the foliage often becomes a deep red before the leaves fall. My tree, for I have only one of this variety, is on Quince roots, and is trained on a wall facing due west. I have never known it fail even in bad seasons. Orders for fruit trees should be sent without delay if they are to be planted to the greatest advantage.—B. S.

Keeping Late Grapes.—Many people are deterred from adopting the very useful plan of keeping late Grapes in bottles of water from the idea that some elaborately fitted up or air-tight compartment is necessary; but this is by no means the case, as, with a little contrivance, a good Grape room may be extemporised in any compartment inclosed with four brick walls. The principal point is to get a steady temperature, that would not be liable to sudden fluctuations; and for this reason a room with a northern aspect is desirable, or, what is better still, an apartment that does not communicate directly with the outside air. The advantage of having the Grapes thus securely bottled when severe frosts and sunshine render it impossible to maintain the houses in which they were grown at anything like an equable temperature after the beginning of the year can only be fully realised by those who have had to keep them on the Vines until late in spring, besides the benefit which the Vines derive by being released of their crop and pruned, cleaned, &c., at the most favourable period. The keeping of Grapes successfully in bottles of water is now well known; but any doubtful of its advantage should try it first on a small scale, and I feel sure they will soon adopt it fully and without reserve, as I am confident Grapes keep better when cut than when on the Vines after the commencement of the year.—J. G. L.

Rust on Grapes.—Having read with much interest the opinion expressed by the two different correspondents as to the cause of rust on Grapes, I thought it would not be out of place to give a few causes as to the evil of rust on Grapes, and at the same time show how the evil may be overcome. I have already six different causes which produce rust, and having given a great deal of time to the cultivation of the Vine, I do not think but that rust on Grapes might never more be seen if the following causes were avoided: 1. Injudicious application of the scissors in thinning. 2. The hair of the head coming in contact with the bunches. 3. Syringing the berries with hard water. Some years ago at Welbeck our supply of soft water became exhausted, as a consequence we had to use water from the mains, and the result was plenty of rust on the Grapes we syringed. I have had two cases brought under my notice this summer, and each case has been from syringing with water from the street mains. 4. In the early part of the season syringing with water much below the temperature of the house. 5. Avoid thrips and ants. 6. Steam arising from manure water, which causes rust to set in wherever the least steam touches a berry. Different opinions have been expressed on the matter, but I believe that the above are the main causes of the rust on the Grape.—T. Lowe, *Penketh.*

Carnivorous Insects.—The insect from the description of "H. H." was the larva or maggot of one of the sun-flies common in most gardens. The larvæ of these flies feed on the aphides, some being partial to the green, some to the black fly. I have taken the larvæ from the Rose, Cherry, and Thistle, and reared the flies from them. I don't think they would prove very efficacious in a house, but a trial

might be soon made if the animal was about when required. Perhaps two or three dozen of the flies might be introduced with effect. In such a case, however, a failure might not be conclusive, no more than in the case I will mention. In GARDENING of September 18 a correspondent writes that young ducks will devour the caterpillars from the Gooseberry and Currant bushes. My experience is different; two or three batches have been accustomed to roam the garden and pick worms from the newly turned soil; they soon knew a spade or fork from any other tool. Thinking to utilise them as your correspondent advises, I tried them with the grub repeatedly; seldom would they touch one, never a second. I shall try again next year.—V.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 11.—Potting young Pelargoniums; planting Arabis in flower-beds; taking up Schizostylis and planting it in cold frames; tying Endive; pruning and nailing on north sides of walls; putting Chrysanthemums into span-roofed Peach houses; getting East Lothian Stocks under cover; taking up Lettuces and putting them into orchard house; laying Lilies in pots on their sides and covering them with sand; laying Box; gathering Yew berries for sowing; beginning to manure garden ready for digging; preparing manure for next year's Celery; pruning and nailing Cotoneaster; cleaning Endive that has been planted for protection near walls; keeping Roses in pits at about 55° by night; giving Pelargoniums a little heat if cold or wet.

Oct. 12.—Potting young small-leaved sorts of scented Pelargoniums; planting hardy flowers and bulbs in beds on terrace; also more Lettuce for spring use; taking up some Peach trees and replanting them, in order to check over-luxuriance; putting all tender cuttings into pits, leaving those that are hardy in frames; getting Strawberry plants and Anne Boleyn Pinks into frames; putting Fuchsias and scented Verbenas under greenhouse stage; also Coleus and Iresines into Cucumber pit; gathering all the late sorts of Pears and Apples; gathering Tomatoes and putting them on Vinery flue; finishing mowing.

Oct. 13.—Putting in cuttings of Pentstemons in cold frames, also of Pansies, and of a few more Hydrangeas, placing the latter in a Cucumber pit; clearing verandah and planting its border with Wallflowers, bulbs, and other plants; taking up Cinerarias with large balls, putting them into large pots, and placing them in a cold pit; putting Endive from open ground under the protection of walls; taking up Carrots, and stacking them and Beetroot, having first dried them; earthing-up Leeks; cleaning Vines in early Vinery, and painting woodwork; weeding young Onions and Spinach; storing all bedding plant boxes in shed.

Oct. 14.—Potting some more Narcissus showing flower; planting Wellingtonia and Abies Douglasi; laying in a quantity of hearted Cauliflowers in pits; putting a few Heliotropes into a little warmth to induce them to open their blossoms; putting some long straw around Violet frames; washing Camellias and Oranges; looking over Mignonette for caterpillars; salting walks; putting fresh soil to standard Morello Cherries; digging vacant ground; rolling walks; weeding Lily of the Valley.

Oct. 15.—Potting Anemone japonica and some plants of Sedum spectabile; also Lily of the Valley; planting fruit trees; tying up some Bath Cos Lettuce; getting Violets in pots under cover, also Stocks and Centaureas; bringing Maréchal Niel Roses under cover; stacking Strawberry plants in pots for which there is no room in frames; sponging Daphnes and Stephanotis; suspending ropes of Onions in loft; top-dressing tree Mignonette with manure; pruning first Hamburgh Vines; keeping flowering Pelargoniums about 50° at night; thinning buds on Camellias.

Oct. 16.—Potting Dielytra and Hoteia japonica; also Veronica Andersoni from borders and Centaureas, and putting the latter into slight heat, taking off nearly all the leaves; taking off Chrysanthemum layers; plunging Roses, after pruning them, and double Wallflowers in a cold pit; nailing Currant trees on walls; getting all Pelargoniums under cover; taking up all Endive from the open ground; gathering seed of Scarlet Runners; putting frames ready for Lettuce; giving Cherries fresh soil; spawning second Mushroom bed; earthing up July-sown Cabbage; plants in flower in conservatory—scented, scarlet, pink, and double Pelargoniums, Stocks, Mignonette, Balsams, Fuchsias, Heliotropes, scented Verbenas, Amarantus, Coleus, Lobelias, Chrysanthemums, Primulas, Petunias, Larkspurs, Justicias, Narcissus, Scutellarias.

Glasshouses.

Mignonette for Winter and Spring Flowering.—Where the cultivation of Mignonette is made a special feature, the plants raised from seed early enough to give time for their attaining a good size should now be accommodated with a good position in a light pit or house and placed close to the glass, so that they can receive plenty of air, for on this, in a great measure, depends their leaves having sufficient strength and substance to keep green and healthy during the winter; the plants sown late in the summer, and again about the beginning of September, will need to be kept quite cool. A light, airy pit or cold frame with the lights drawn completely off on fine days is the best position for this late stock, as the object is not to bring them on quickly, but rather to keep them short and sturdy until the winter is far advanced, when, through the increased light, they will naturally make more growth, and come into flower and last until the spring-sown plants are ready to succeed them. One essential in the pot culture of Mignonette is to keep the plants scrupulously clean from aphides that establish themselves on the undersides of the leaves, and if not sought for, they frequently, before being noticed, weaken the foliage, so as to cause its premature decay. Diluted manure water should be given every week to the most advanced plants.

Schizanthus.—Though somewhat common plants, there are few amongst the many more pretentious subjects that can be made to produce a better display in the conservatory or greenhouse during the spring when well managed. If liberally treated they will attain a size seldom seen amongst the generally crowded examples grown out-of-doors. The quantity of flowers they will produce will of course be proportionate to the size of the plants, which will be best regulated by the size of the structures they are required to embellish. To grow them to a large size the pots will need to be 12 in. or 13 in. in diameter, and any plants that are suffering for want of room may be at once transferred to pots this size; for if allowed to remain long in the small-sized pots after the roots get crowded, the repotting later on will have little effect in benefiting the plants. The soil should be such as is calculated to grow Pelargoniums well—containing a good quantity of manure. Similar treatment in other respects to that advised for Mignonette will answer for these also.

Pelargoniums.—Plants of the large-flowered kinds that were kept on blooming beyond their usual time, and were cut down late, will have broken sufficiently to admit of the old soil being removed and the plants repotted, potting them, as in the case of those previously cut down, in smaller pots, in which they can remain until after Christmas. These plants will last for a number of years, and by treating them in the manner advised the earliest portion will come into flower sooner in the spring, and the latest will acquire the habit of regularly flowering late, by which they meet the requirements of those who grow them for general decorative purposes, and whose object is to keep up a display over as long a period as possible. The first and second potted plants will now have begun to root freely, and may receive a little more water, but care must be taken from now and throughout the winter months that the soil is only kept in a sort of half-moistened condition, that is, much drier than the majority of other plants would be kept. It is necessary to impress this upon those who have not had much experience with this section of Pelargoniums; for if the soil be kept as moist during the winter as most other plants in a growing state would need, the result is that the roots make little or no progress whatever, and the shoots that are made would be long-jointed and weak, which would produce leaves so deficient in substance that they would turn yellow and prematurely die away, leaving the plants when the flowering season arrives thin and naked at the bottom. Those first potted should, as soon as they require it, have a few sticks put to them, so as to admit of the shoots being tied out in a way that will keep the centres of the plants open; for, though it would be a mistake to train plants required only for ordinary decorative purposes to the extent necessary for those that have to be moved about for exhibition, still, to grow Pelargoniums in a way that will preserve their natural habit, the plants must be kept sufficiently open to preserve a sturdy habit.

Fuchsias.—Plants that were struck at the end of July and afterwards placed in small pots should not be allowed to remain in these too long, for if once they get into a stunted condition they will never grow freely afterwards. They should now be placed in 5-in. or 6-in. pots, which will be large enough for the winter, potting them in good loam, well enriched with rotten manure, with the addition of enough sand to make the whole sufficiently porous, but not too light. They should, if possible, be kept on a shelf close to the roof in a warm greenhouse. Tobacco smoke is injurious to the leaves of young Fuchsias such as these, especially during autumn and winter; but if aphides make their appearance, the plants should be dipped in Tobacco water. These young plants will make much better specimens than old plants; but where provision has not been made by striking them at the time these were put in there is no alternative but to use the old plants again next year, for which purpose those that flowered first during the past spring should now be put to rest. Take those that flowered earliest in the spring and from the present time gradually reduce the quantity of water applied to them until there is but little further disposition to grow, and then cut the side branches close in, and reduce their height so far as is considered necessary. The plants should be placed as closely as possible in any house or pit where they will be secure from frost, and merely giving them water enough to cause the buds to break, but not more than will maintain them in a half dormant condition until after the turn of the days. Plants that were treated so as to bloom late throughout the autumn, if well furnished with advancing buds, as they should be, will keep on flowering for some weeks, and though the display they make is not equal to that produced earlier, yet when flowers are scarce they will be found useful.

Bulbs.—It is now quite time to see about potting the general collection of such bulbs as are required for winter and spring flowering, especially Hyacinths, which, in common with all other plants of a similar nature, evince by their roots beginning to develop that they want to be placed in soil. In the growth of these plants, and particularly Hyacinths, there is no necessity for using pots so large as are often employed. The splendid spikes which the London market growers produce with two or three bulbs put in a small pot only just sufficient to admit them is sufficient evidence that a great deal more depends upon the condition and strength the roots have acquired previous to the time of their being forced than on any assistance that can be derived from a large amount of root space. In selecting Hyacinths amateurs should rely upon the good and well proved older varieties. Though Hyacinths are such general favourites, their comparative uselessness after the first season's blooming makes them much dearer than most other bulbs. The Polyanthus Narcissi have not this objection, for after being flowered in pots they can be planted out in the open borders, where they will make a fine display in succeeding years; the agreeable perfume and form of their flowers especially adapts them for cut purposes. Similarly in subsequent seasons Tulips flower well, and many of the fine single-flowered varieties deserve to be much more largely grown in pots than they are. Crocuses, especially such kinds as Queen Victoria (white), Sir Walter Scott (pencilled lilac), Pride of Albion (white, striped violet), Mont Blanc (white), and New Golden Yellow are very beautiful, and most useful where grown in sufficient quantities so as to keep up a succession. If their wants are attended to after blooming they will, in future years, be equally as effective out-of-doors, and much superior to the commoner kinds more generally used for planting in borders.

Squills (Scillas), particularly S. sibirica, can hardly be too largely grown in pots, in which there is no difficulty in getting them to bloom freely. The charming shade of blue and elegant manner in which the flowers are produced especially adapts them for bouquets. When grown in sufficient quantities they will be found most serviceable, particularly in severe winters, for a continuous supply until those in the open borders flower; ordinary sandy loam suits all the above kinds of bulbs admirably, and the pots should be well drained. As to treatment after potting, nothing answers the essential object of getting a plentiful supply of roots before much top-growth is made better than the old-fashioned method of plunging them in a bed of coal ashes out-of-doors with 4 in. or 5 in. of the same material underneath the pots in order to keep out worms, and 6 in. above. In five or six weeks they will generally have made plenty of roots.

Ixias and Sparaxis.—These beautiful plants are fine objects in pots, their rich and varied colours, together with the graceful habit of their flower-spikes, are such that no doubt they would be much more cultivated in this way if they were better known, though most of

them are old introductions. Six-inch pots are large enough for half-a-dozen bulbs of these; but after potting they should be placed in a cold frame, so as not to be so much exposed to the wet in the way that Hyacinths and other similar bulbs would be, as they do not like as much moisture until they have got plenty of roots.

Tritonias.—These are amongst the most useful greenhouse decorative subjects we have, as they may be had in bloom from early in the season until the summer is far advanced, when greenhouse flowering plants are comparatively carce; but though thus not coming under the head of forced flowers, it is well for those who think of growing them to obtain them at once and pot them. Those who are acquainted with the old well-known orange kind (T. crocata) may form some idea of the effect that may be produced by growing an assortment of the blush, scarlet, white, and shaded varieties. A dozen bulbs grown together in 7-in. or 8-in. pots will be found a very useful size; where larger specimens are needed, all that is requisite is to have larger pots containing a proportionately larger number of bulbs.

Flower Garden.

Carnations and Picotees.—All who are growing collections of these will now be busy amongst them, removing and potting the layers, or planting them out in beds of fine soil to be afterwards transplanted. Each layer must be carefully raised out of the ground. If roots have been formed the plant may be cut off; if not, press it into the ground again to remain until roots appear. If it be intended to plant out into the open ground, the beds should be prepared for them by being deeply trenched, and, if necessary, some rotten stable manure should also be worked into the ground, but it ought not to be nearer the surface than 6 in. Clumps of the commoner border varieties are much appreciated when placed near the front of herbaceous borders. The best way to manage them is to layer the shoots in the manner as recommended for the choicer varieties, and allow the plants to remain where they are layered. Good rich sandy loam and manure should be placed round the roots. Such clumps as these produce scores of blooms during the season.

Dahlias.—The fine weather suits these, and we are still getting masses of very fine blooms. There is no further attention required than to tie the stems to the sticks, and allow the plants to produce as many flowers as they will. Such flowers are very useful for cutting, and if they do not attain the size of exhibition blooms they are none the less useful for room decoration. The single-flowered kinds, such as D. coccinea, lutea, and Paragon, ought to be grown more than they are. The plants may be carefully lifted at the first signs of frost, and taken into a Vinery from which the Grapes have been cut, or a similar place, where they will continue to produce flowers for several weeks.

Gladioli.—If the spikes of these are cut just as the first two or three blooms expand the others will open indoors if placed in water to the top of the stem. If there are any seed-pods ripening they should be gathered just as they begin to burst. Lay them on paper in a dry, airy place, where they will open in a few days and the seeds fall out. A green caterpillar is at present busy in eating the flower-buds before they appear out of the sheath; these should be at once sought for and destroyed.

Pinks.—No time should now be lost in planting these in flowering beds. The plants should be carefully lifted and a hole dug out for their reception large enough to contain half a spadeful of good loam and manure; place this compost carefully round the roots. The plants should be 9 in. apart each way. A few of the best named Pinks are Blondin, Bertram, Boiard, Cristabel, Device, Dr. McLean, Dr. Masters, Emerald, Emily, Excelsior, Freedom, Godfrey, Harry Hooper, John Ball, Lady Craven, Mildred, Mrs. Mitchell, President, Reliance, Shirley Hibberd, and Victory. In making up a collection such sorts also as the following should not be omitted: Lord Lyons, rosy-purple; Lady Blanche, pure white; Anne Boleyn, Derby Day, and Mrs. Pettifer. These are quite distinct in type from the florists' section, and are much valued as cut flowers.

Pentstemons.—These are still flowering most freely; the stems from each plant are numerous and quite loaded with flowers. All the attention they require is to see that the stems are supported with sticks, but where they are planted in beds the stems support each other. The seed-pods must be removed, as they tend to check the production of flowers. Cuttings must now be put in. There are always plenty to be obtained at this season; the small side shoots at the base of the stems are best. Insert the cuttings in pots or boxes of fine sandy soil, and place in cold frames or handlights, as may be most convenient. Shade them from the sun, and water them moderately.

Herbaceous Borders.—These should now be carefully looked over, removing all decayed stems and leaves which would otherwise give shelter for insects and other pests, and every possible means should be taken to destroy them—such as hand-picking and spreading lime, soot, &c., over the surface of the ground. If these precautions are neglected many valuable plants must inevitably suffer from their depredations. A clean cut is most essential in everything connected with pruning, so it is important that a sharp knife should be used for cutting away the woody stems, or much damage may result to the stools of some kinds in consequence of the loosening of the roots and splitting the stems. The soil must be carefully forked between the plants and all vacancies made good by dividing old stools, &c. Pansies, Daisies, Arabises, Aubrietias, and such-like spring flowering plants should be put out at once, so that they may establish themselves before severe weather sets in. Bulbs of various kinds should also be planted in the most open spots, placing a thin layer of silver sand beneath them to prevent rotting and accelerate the formation of roots. For this purpose Hyacinths, Tulips, and similar kinds which flowered last spring will be found extremely useful if they have been properly treated and stored. They should be planted in clumps of six, eight, or ten, and from 2 in. to 3 in. apart; a small stick should be placed in the centre to prevent injury when digging or stepping on the borders, and as a guide when mulching them for protection during the winter, if necessary. Herbaceous plants, it must be remembered, do not ripen their stems and foliage simultaneously, therefore only those whose stems are ripened should be cut down, as many kinds would be thus injured if they contain active sap.

Shrubbery.—Strange to say, many still persist in planting such evergreen trees, shrubs, and Conifers which have not the slightest chance of thriving; they are therefore unsightly, and a continuous source of trouble and expense. In places where planting is scanty, the bare ground is always an eyesore. A shrubbery should be formed by various kinds of plants, with the foliage harmoniously blended, and planted sufficiently wide apart so as to obviate overcrowding. From time to time they should be pruned or even taken away where it is desirable. Where specimen plants are required they should be planted singly, as the shrubbery is certainly not the place for them. As it is useless in towns to plant varieties that are quite unsuitable, it is far better to plant those possessing qualities that render them capable of thriving in smoky districts, though they may not be the handsomest. Amongst the best shrubs for such positions are undoubtedly the Privet, Euonymus, and Aucuba. Of Privets there are several varieties which can be recommended, such as the oval-leaved, the Japanese, the evergreen, the Box-leaved, &c. Of Euonymuses there are also several kinds which may with safety be planted, the green-leaved varieties being the best and strongest. All these, as well as the Privets, naturally form pretty shrubs, and should not be clipped into all kinds of shapes, but allowed to grow freely. The Aucuba is too well known to need description. In wet seasons when the foliage is kept in a fairly clean condition, the leaves of these shrubs present a fine lustrous appearance. The varieties of Forsythia and Rhamnus will also do well in town gardens. The broad-leaved kind of the latter grows into large specimens in a very few years. The Rose of Sharon (Hypericum calycinum) is a well known and excellent shrub for forming undergrowth, and for planting on the borders of plantations, &c. Amongst deciduous shrubs the varieties of Ribes are perhaps the best, and should always be included in the list. The Sumachs, too, are very useful for such places. The planting season being near, a trial of these shrubs may be made, allowing one shrub to the square yard at least. In all small gardens there should be facilities for washing the foliage of shrubs when necessary. After planting, the surface of the soil should be covered to a depth of about 2 in. with well-rotted manure or horse droppings mixed with road scrapings in equal proportions; the latter collected off flint-metalled roads is the best for the purpose.

Vegetables.

The earthing up of all the Cabbage tribe that are large enough for the operation should be done at once for the sake of protection from the effects of the wind, and also for the free action of the air to the land; any other benefit derived from such a practice is of a doubtful nature, and if it were not necessary for the reasons above given, the earthing-up system had better be abandoned. Celery requires attention as to earthing, and should be tied with bast previous to the operation, in order to prevent the soil getting into the centres of the plants. The Celery-fly is prevalent this season, and we find a sprinkling of soot applied once weekly an effective antidote, for though it does not destroy the pest outright, it hinders the spread of it. Cauliflowers that are now turning in will need daily attention to keep them from injury by frost; break the leaves over the flowers, or, if a quantity be ready for use, and it is found necessary to prolong the supply, take them up with the entire stems, and hang them in a cool shed, head downwards; in such a position they will often keep for six weeks. Lettuce, Endive, and herbs for winter use all demand particular attention at the present time, so that there may be no scarcity when required. Protection should be in readiness, as frosts may now occur any night. Tomatoes not yet ripe, and that are of a size large enough to be used, should be cut, and, if hung in a warm, airy house, will ripen perfectly. The storing of Beetroots and Carrots will soon be necessary. As a rule we winter them in the ground, and use Bracken or straw for protection, and by this method the roots are more tender than when pulled up and stored in sand. Look over the stores of Potatoes and Onions in wet weather. The latter will keep best if bunched and hung up rather than laid on shelves. Rhubarb and Seakale will soon demand attention. Give abundant ventilation to French Beans in pits, and from now all the sowings will do best in pots; to keep up a continuous supply it is necessary to sow a batch fortnightly. Tomatoes that are fruiting indoors should have the growths kept thin and the fruit also; they may then be expected to continue in fruit throughout the winter.

Winter Onions.—Where there is an inclination to grow these as large as they are capable of becoming, a piece of ground should now be deeply dug and heavily manured, getting the manure well down to the bottom of the trench, say 15 in. or 18 in. deep, and on this some of the autumn-sown Onions should at once be planted; they must be carefully lifted with a planting trowel, so as to retain all their roots uninjured; for planting use either the trowel or an ordinary dibber, but whichever is employed see that the fibres are not doubled up, but put in straight down in their natural position; plant them in rows 1 ft. apart, and 4 in. or 5 in. asunder in the rows; this will admit of every other being drawn for use in the spring, allowing the remainder to grow to their full size. I have tried both autumn and spring planting with this crop, and find that the present is much the best, the roots attaining a larger size when moved at this time than in the spring, when they are making more active growth; another advantage is that the check which they now receive has the effect of rendering them hardier and better able to stand a severe winter, should such occur, than those that are allowed to remain in the seed bed.—B.

Endive for Autumn and Winter Use.—In wet seasons tying up Endive is of little use, as it is sure to become rotten at the heart before it is sufficiently blanched. To prevent this I find it a good plan to double in the outer leaves and place a clean blue slate on the top of each plant; the slate is less likely to harbour slugs or vermin than wood. If the plants be on a sloping border so much the better, as the slates will throw off the rain, blanch the Endive beautifully, and make it more crisp than if tied up. Another good plan, in the case

of late Endive, is to take it up with a good ball of earth and well tie in the leaves, selecting a dry day for the operation; then pack the roots in mould in a light open shed, or, better still, at the foot of a south wall, letting the roots into the ground; then place an inclining board over them. This will make them white and preserve them a long time. Endive, thus treated, will have white hearts larger than a man's fist, and these, with a little Mustard and Australian Cress, which can easily be obtained at all times, make a good salad in autumn and winter, when Lettuces and other things are scarce.—C. H., *Oxon.*

GLASSHOUSES & FRAMES.

Habrothamnus elegans.—Some say that plants of this Habrothamnus are only suitable for pillars and walls; also that they should not be stopped until after the flowering season, when they can be cut hard back; but I prefer small plants for autumn use to using them as climbers, also that they should be stopped for this purpose, as it causes them to flower earlier, and keeps them in good shape for the conservatory, greenhouse, or table. Like many more, I did not value this plant in a small state until my attention was especially directed to it in that condition. I then took about a dozen healthy shoots, with a heel attached to them, off an old plant, which was neither useful nor ornamental; these I struck in the usual way, and I potted them in June in 5-in. pots, and grew them on near the glass in a warm greenhouse, stopping them frequently until some time in July or August, when I removed them to a cooler temperature, where they soon showed signs of flowering. They blossomed freely, and, from the commencement of the flowering period up to the present time, they have not ceased to form striking objects, and they still look as if they would keep in bloom for some time to come. It is therefore clear that if this plant be grown properly in 5-in. pots, or in any other size required, it will become both useful and ornamental at this season of the year, when it is difficult to keep conservatories well supplied with flowering plants. I am also of opinion that if it be kept in good shape and healthy it will make a valuable table plant, both as regards duration of bloom and also brightness of colour under gas or other artificial light.—C.

Wintering Calceolarias.—As the best season for propagating these has now arrived, let me recommend those who have hitherto experienced any difficulty in keeping their plants healthy through the winter to look well to the quarters in which they are placed. They cannot bear artificial heat, and therefore a cold frame is the best for them; set it on a hard foundation of coal ashes, and spread over the ashes 6 in. of good fresh soil, consisting of sandy loam and a little leaf-mould; beat all down firmly, and insert healthy cuttings from growing shoots 4 in. apart each way. Water freely, and keep the frame close until the cuttings are rooted, after which ventilate freely on all favourable occasions, and water when necessary, as drought is injurious to Calceolarias of this class. Pinch out the points as soon as they commence to grow, and by April they will be fit for planting in beds. The roots being in a solid mass will move in square blocks by cutting down between each plant, whereas plants in loose soil will not recover the check sustained by transplanting for some time.—J. G.

Roseate Maiden-hair Fern (Adiantum rubellum).—Most Ferns are remarkable for their fresh greenness, but several of the Maiden-hair kinds are delicately tinted with dark rose or rosy-purple. A. rubellum is one of the most ornamental in this respect, its delicate fronds being richly tinted with a roseate hue, which is all the more apparent when contrasted with other forms of the British Maiden-hair (Capillus-veneris) section to which it belongs. As will be seen by the accompanying illustration, the plant is dwarf and compact in habit; and its elegantly tinted fronds, which are produced in abundance, vary from 6 in. to 8 in. in length. It is a native of Peru, and was introduced several years ago by Messrs. Veitch & Sons, of Chelsea. It grows well in a cool Fernery, or anywhere where there is a very moderate temperature. Its culture is as easy as that of other Maiden-hair Ferns, and should be treated to fresh fibrous peat and sand, together with a moderately humid atmosphere, and a liberal supply of moisture at the root, when growing.

ANSWERS TO QUERIES.

3215.—**Climbing Red Tropæolum.**—Probably "Heather" refers to the Flame Nasturtium, so called Tropæolum speciosum, which is usually treated as a hardy herbaceous plant, the roots remaining in the ground all the winter where it is dry and fairly sheltered, although, perhaps, safest lifted and stored for the winter if the soil be cold and subject to intense frost. An excellent place for this Tropæolum is amidst low-growing shrubs, where in the summer the growth covered with rich scarlet flowers can run at will over the tops of the shrubs, and decorate the green foliage with brilliant hues. In other places the plants do well at the base of a south wall where it is warm and sunny, but the fact that it thrives so well in the north rather shows that a cool situation will suit it well. Propably one of the chief desideratums for it is a deep, cool, sandy soil, and some little added protection for the roots in the winter. There is no reason why it should not do well in Somersetshire.—A.

3121.—**Annuals for Profit.**—A good bed of the double Indian Pinks would be of the greatest value to cut from for bouquets. These may be sown now or early in the spring. Various hardy annuals, such as white and carmine Candytufts, Mignonette, not gay of colour, but ever acceptable for a nosegay; Scabious in several colours, the blue, yellow, and purple Centaurea, or Cornbottle, the blue a lovely thing, and the yellow or Sweet Sultan, one of the most charming of all yellow flowers for cut uses. Ageratums are tender, but of the utmost value as cut flowers, the colour of the flowers chaste and pleasing, and stems long and stout; Globe Amarantus, the flowers of a pretty purple hue are very showy. Rhodanthe Manglesi is a charming plant, the flowers rosy-pink in colour; and Helichrysums are not only very varied, but furnish an immense quantity of bloom. Phlox Drummondi is not strictly hardy, but it is a capital summer annual, and furnishes a number of flowers for cutting. Asters also are exceedingly valuable as cut flowers, and whilst the large blooms are best suited for nosegays, the small side flowers may be used almost for any purpose. The Myosotis is not an annual, but is quite charming for button-hole purposes; perhaps there is nothing prettier with a white Pink or Carnation and a spray of Fern than a piece or two of the Myosotis, or Forget-me-not. Especially pretty for pot culture under glass are the bright red and yellow Celosias, or feathered Cockscombs. These are all very elegant and beautiful, the side shoots supplying most desirable button-hole material. The Bartonia aurea gives a bright yellow colour in small flowers, and the Erysimum a deep orange hue. There are few of these things that are not best grown in the open air, but some if sown in the autumn in pots will bloom early, and if sown in August will bloom late under glass.—A. D.

3190.—**How to Collect Lobelia Seed, &c.**—The usual way to collect seed of Lobelia is to cut the plants off close to the ground, spread the cut portion on a sheet of paper and lay it in the sun until ripe; then rub out, clean it, and put it away until the time to sow next March. Balsam seed is gathered now or when ripe. Watch the pods, and when they become yellow gather carefully and put them into a paper bag. Rub the seed out after all is gathered, dry it, and keep until April; then sow under glass. Perilla is always sown in pans or pots under glass in April, and is better for a gentle heat, as it is a tender plant. Seed of this is usually imported, and we think it is doubtful whether you can save any. If the Phloxes named are of the annual or Drummondi section the seed-pods should be picked off as soon as they become brown, and put into a paper bag. This should be sown in a frame or greenhouse in the month of April, as it is a tender annual.

3185.—**Seedling Calceolarias.**—The proper season for the herbaceous Calceolaria to bloom is the months of May and June. Shrubby kinds bloom all through the summer. Yours are probably herbaceous and tender. You will find very considerable difficulty in keeping these in a room without their being very much drawn, and becoming exceedingly gawky. You must keep them close to the light, give all possible air, and watch well for aphis, by which the plants are soon infested if the atmosphere becomes dry. The plants must be often turned to allow the light to play on all sides. The proper place for them is a cold frame till Christmas, and after that they should go into a greenhouse. The best soil is composed of one-half nice turfy loam, and the rest of well-decayed manure, leaf-soil, and sand, all well mixed. We fear that these herbaceous Calceolarias will prove to be very unsatisfactory window or room plants.—A. D.

3109.—**Keeping Potatoes.**—There should not be any difficulty in keeping Magnum Bonum and other late Potatoes until the end of May if stored in any dry and moderately cool place. Late Potatoes if kept where the air is dry will not begin to spring at the eyes until April, and then if once looked over and the shoots rubbed clean off, will hardly require further attention before the end of May. We give the preference for convenience and space to storing in disused flour barrels, as whilst the bulk may seem great the open tops permit all perspiration or sweating exudation to escape freely. Further, if there are several barrels full the contents can be emptied one at a time, be picked over, and replaced. A cool, dry room, a dry cellar, or even an outhouse will make excellent stores if frost is excluded.

3120.—**Fuchsia Buds Dropping.**—Your complaint of Fuchsia buds dropping is a very common one, and invariably arises from the dry and unhealthy condition of the atmosphere in which the plants are kept. Fuchsias if well watered and not too freely exposed to scorching sunshine will bloom abundantly on a window-sill, but inside the window will drop all its blooms ere they expand. This simple fact shows that although plants may in both cases suffer from being pot-bound, yet where the plants are exposed to the cool external air that is no serious evil, whilst inside, and in combination with a dry atmosphere, it is a serious one. If the plants are in a room give, if possible, more air and light, and whilst the plants are still growing, water freely, and see that the roots do not become dry at the bottom, though perhaps moist enough at the top.—A. D.

3193.—**Striking Cuttings without a Greenhouse.**—If your window space is limited you would do wisely to allow your cuttings to remain in the cutting pots until March, but if you have ample room, and the cuttings are well rooted, then pot off at once in small pots singly, as in these they will sooner get established than in larger ones, and you can give them a shift into such in the spring. If potted now with poor roots the plants may soon damp off and die. The season is now almost past when active growth takes place, and if they make no growth between potting and the winter no good can result from the performance of the operation now. Give all possible air when there is no frost and the wind is not strong or cold; the more the plants are hardened by exposure the better will they stand the winter.

3214.—**Window Plants.**—We should certainly advise for a winter window-box a few nice, ornamental dwarf shrubs or little Conifers, assuming of course that the box is to be outside the window, and not within. Some three or four of these might have a carpet of Myosotis, double Daisies, Arabis, Aubrietia, &c., or it may be filled with blood-red Wallflowers and a carpet of blue Nemophila or white Arabis, or of a few good plants of white Iberis corifolia carpeted with purple Aubrietia, or planted with Hyacinths or Tulips and Snowdrops, and carpeted with a green Sedum. All or any one of these combinations would look very nice. Such things as Pansies mixed look pretty in a window, but for winter decoration the shrubs are best.—A. D.

3176.—**Conservatory Plants.**—The first thing to do is to make a good border for the permanent plants. The excavation should not be less than 3 ft. deep, in order to give space for drainage and soil. The drainage may consist of broken bricks or stones, and should be 8 in. or 9 in. in thickness, filling up the remainder of the space with good turfy loam and peat in about equal portions; crushed charcoal and sand may be added to insure porosity. If

a tropical character is to be given to the interior of the house, then Palms and tree Ferns should be used; but I think flowering plants, such as will bear the knife when they become large, will be more satisfactory in so small a house. The following flowering plants will be suitable for planting out: Camellias, Luculia gratissima, Rogiera gratissima, Acacia longifolia magnifica, A. armata, Cytisus racemosus, Daphne hybrida, Grevillea elegans, Habrothamnus elegans, Linum trigynum, Nerium album plenum, Plumbago capensis, Polygala Dalmasiana, and Veronica Andersoni. A few foliaged plants might be added, such as Dracæna indivisa, D. rubra, and Ficus elastica, but I have generally found flowering plants prove the most satisfactory. Fuchsias will do beautifully planted out in such a house; Mignonette would grow into a tree lasting for years, as would also Heliotropes. The climbers may be selected from the following: Bignonia Cherere, Clematis lanuginosa pallida, Cobæa scandens variegata, Hardenbergia monophylla, Jasminum Poiteau, Lapageria rosea, L. rosea alba, Mandevilla suaveolens, Passiflora Colvilli, P. Newmani, Rhynchospermum jasminoides, Tacsonia Van Volxemi, and Tropæolum Ball of Fire. It will be best not to aim at too much. A few plants well grown will give more pleasure than a crowded collection spoiling each other. Tea Roses may either be planted out or be introduced in pots. I suppose there will be a small border round the sides of the house in which to plant the climbers, and this narrow border and the edge of the centre border could be always kept gay with plants in pots, or else be planted with Club Mosses and Ferns to give a green margin to the flowering plants. Undoubtedly having permanent plants in the borders will be the most economical arrangement, and if the selection is carefully made there may be flowers all the year round.—E. H.

3107.—**Plants for Small Garden.**—The first thing to do in the case of a piece of ground which has been laying in a neglected condition is to thoroughly work the soil, and bring it into a free mellow state before attempting to plant in it. This precaution is all the more necessary in the case of heavy retentive soils, which require considerable preparation to bring them into the desired condition. In the first place, we would throw up the soil into rough high ridges, that is to say, bring two spits together, thus leaving a furrow between each ridge of earth. Allow it to remain in this state all through the winter, when the united action of frost and wind will sweeten and pulverise it, so that by the middle of March it should be in prime order for the reception of seeds and plants. If at the same time some river sand such as builders use, road-scrapings, or ashes of any description can be added to it, it will be thereby rendered much more free and manageable. Choose a dry time in March, pull down the ridges and level the soil, breaking all lumps. Seeds of hardy annuals, such as Godetia, Clarkia, Bartonia, Collinsia, Mignonette, Saponaria, Leptosiphon, &c., may then be sown, to be followed a month later by Scarlet Linum, Mimulus, and Convolvulus minor, finishing up in May with Tropæolum, dwarf and climbing Canary Creeper, and climbing Convolvulus. Pansies and bedding Violas may be sown in June, transplanting them later on to their permanent quarters; Honesty, Canterbury Bells, and Sweet Williams to be sown in March, planting out when large enough to handle. In the sunniest position in the garden Wallflowers will succeed, and a portion of the wall where the sun comes should be devoted to Chrysanthemums, training to the wall and protecting when in bloom. Daisies and Pinks would in all probability succeed very well, as would also Columbines and such plants as Arabis albida, Alyssum saxatile, Aubrietia purpurea, the Gentianella, Christmas Rose, Winter Aconite, Snowdrops, Primroses, Polyanthus, Crocus, and Daffodils. A few Roses may be tried, and we would also plant Clematis Jackmani, lanuginosa, and candida, training them up to stakes or to the walls where not much shaded. Gloire de Dijon is a fine Rose for wall culture. Where but little sun comes Ivy must be planted, such as the small-leaved variegated, the large clouded, and the common Irish. Where much shaded, try hardy Ferns, London Pride, Daffodils, Forget-me-not, Primroses, Winter Aconite, Lily of the Valley, and Snowdrops.—J. C., *Byfleet*.

Roseate Maiden-hair Fern (Adiantum rubellum); suitable for cool greenhouse.

3095.—**Cactus not Flowering.**—Cereus flagelliformis, the cat's-tail or rod-shaped Cactus, is one of the most free-flowering species we possess. The pot containing it should be slung near the roof, so that it may get full light and sun, and where the pendulous habit may be displayed. Other free-blooming kinds consist of Cactus speciosissimus, Cereus Mallisoni, Colvilli, formosus, and rosaceus. Perhaps your plant is not yet large enough to flower; a Cactus requires several seasons' growth before it can produce bloom. In any case the effects of potting will not be seen until next year. It is on the wood of the previous season's growth that flower-buds are formed. Grow in the full sun during the summer, and expose them in the open air in a warm situation during the latter part of August.—J. C.

3097.—**Imperfect Fuchsia Blooms.**—Some error in the treatment has occasioned the formation of imperfect blooms. Fuchsias like a free, mellow compost of two-thirds turfy loam and one-third leaf-mould, adding thereto some silver sand. Next spring, when young shoots are beginning to form, allow the plants to dry out, turn them out of the pots, shake away all the old soil and replace in the same sized pot, shifting when required. Place in the open air in June until the buds are well formed.—J. C.

3094.—**Plants for Greenhouse.**—Tacsonia Von Volxemi would be a suitable plant for covering the wall, as it grows freely and flowers profusely. It will give the greatest satisfaction if planted out in a border of prepared soil consisting of loam and peat in equal proportions. About 18 in. of soil will do; the greater the width and length of the border the longer will the plant last in good condition. Cinerarias and summer-flowering plants generally merely require to be screened from frost, a temperature of from 40° to 50° being quite enough for them. The Cineraria likes a cool, moist atmosphere, but should never get in the least frozen, as it is one of those plants that never recover from the effects of frost-bite. Fuchsias from the latter end of October should be kept rather dry,

watering only when necessary, and giving just enough to moisten the soil through. In this manner the leaves will fall, but the wood will remain sound and plump. In March prune the young shoots back to three eyes, and when fresh leaves are formed shift the plants into larger pots. Balsams must be thrown away, as they are annuals, and the Coleus would do best in a warm room.—J. C. B.

3172.—**Culture of Ixias and Sparaxis.**—If required for pot culture the bulbs should be potted at once in fibrous loam, lightening the same by an admixture of leaf-mould and silver sand. Water gently, plunge the pots in a cold frame, giving no more water until the foliage appears. Keep the lights quite off, except in frosty or very wet weather, and early in February remove the plants to the greenhouse, where, if a gentle warmth is maintained, they will come into bloom by April. An easy method of growing them is to plant them out in a frame, where they will get just the protection they need; or a turf pit will do, covering in bad weather with shutters. When thus grown they will furnish a large amount of beautiful flowers for cutting in May. For open-air culture, plant in well-drained, rather light, and free soil in a warm situation in January.—J. C., *Byfleet*.

3171.—**Flowers for Fern Case.**—The attempt to grow flowering plants in a Fern case can only result in disappointment, the atmosphere being much too confined and damp for them. Better try and grow a few interesting subjects such as the Cephalotus follicularis, Cape Sundews, and Sarracenias, and such pretty variegated subjects as Fittonia argyroneura, Eranthemum sanguineum, and Sonerilla margaritacea. Some Orchids would grow in such a situation, but the flowers would spot as soon as opened.—C. B.

3196.—**Flowering Gladiolus.**—Want of vigour may be the cause of your plants not flowering satisfactorily; at the same time there are some kinds which do not open many flowers at a time, whilst others form a long spike and expand some ten or twelve blooms at once. These are the kinds most in favour for exhibition purposes. The Gladiolus requires to be highly fed, and from the time of expanding its first blooms must be screened from hot sun, or these soon fade. The following varieties are amongst the most satisfactory as regards forming a large spike of bloom: Le Vésuve, Horace Vernet, Eglantine, Mons. Legouvé, and Carnation.—B.

3169.—**Keeping Window Plants in Winter.**—We think that with a little management the plants in question may be preserved in good health through the winter, especially if a small stove could be fixed in the room, so that in severe frosty weather, a little fire being made, the inmates would be quite secure, and light could be constantly admitted, as there would then be no need to block up the window. Arrange the plants so that they get as much light as possible, and open the window when the weather is mild. Pick off all decayed leaves as they appear, and give the Geraniums but little water. The Calceolarias must be kept more moist, but with respect to this plant we will give you a useful hint, which we hope that others straightened for glass accommodation will make a note of. Take healthy young shoots, cut them in the usual manner of propagating, and insert them in a pot in light, sandy soil. Sink another pot a size larger in the open ground, keeping just the rim above ground so that water may not flow in. In this place the pot of cuttings, cover with a pane of glass, and cover up in severe frosts. Fine young healthy plants will be formed by spring. Fuchsias may be stored in any out-of-the-way corner until they commence to grow again, but should be pruned in in January.—J. C. B.

3216.—**Hardy Autumn Flowers.**—The finest of all autumn-flowering plants is the Japanese Anemone, the red and white varieties of which bloom freely until severe frosts come. A few clumps of this alone would make a border gay in autumn. When well established it attains a height of nearly 3 ft., but it requires well-stirred soil, a good coating of manure yearly, and copious waterings in dry weather. Rudbeckia Newmani is another showy plant, with large yellow flowers, growing some 3 ft. in height. Echinops strictus is a Thistle-like plant, with numerous blue flower-heads growing from 2 ft. to 3 ft. high, and Lobelia fulgens has scarlet flowers, and attains a height of 18 in. to 2 ft. Then there are the Michaelmas Daisies, the best of which are Aster Amellus, bessarabicus, longifolius, formosus, and sericeus, all running some 2 ft. high, and the Golden Rod (Solidago virgaurea). Another fine autumn-flowering plant is Clematis flammula, which should be allowed plenty of space to ramble, and which loads the air with sweet perfume during the autumn months. Plant in October and a good show of bloom will be obtained next autumn.—J. Cornhill.

3183.—**Spiræa japonica.**—Without the accommodation of a forcing house it is impossible to get the Spiræa into bloom by March. The best plan will be to plunge the pots in a cold frame until February, when they may be brought into a warm room, placing them in a light window, and giving air when conditions are favourable for so doing. A portion of the stock might be left in the frame to come along with the season. They will flower much finer and somewhat earlier when thus protected, as this plant generally gets injured by frost when in the open air.—J. C. B.

3202.—**Tea Roses.**—We willingly give you the best of our advice upon this subject, but we must admit that we do not expect that any great success will attend the attempt to grow Roses in the dwelling, they being plants that require so much light when growing. From this time forward until the middle of November expose the plants to the full air night and day; when they should be pruned back to three eyes, turned out of the pots when the soil is in a dry state, working away as much of the old earth as possible, replacing them in the same sized pots, using a compost of good rich soil. Then place them in an outhouse or cold apartment, keeping the soil just moist until February, when they may be introduced into a warm room having a sunny aspect. Give as much air as possible, and in April when the weather is very mild set them in the open for two or three hours daily. During the early stages of growth water very carefully, allowing the soil to dry out between each watering, and as soon as the foliage begins to develop, gently syringe or wash it about twice a week with tepid clean water.—C.

3182.—**Treatment for Eucharis amazonica.**—This plant requires a warm house where the temperature ranges from 50° to 60° in the winter. We would prefer to keep it in a warm room during the winter than to place it in a cool greenhouse, and we would not attempt to divide or repot at present, as it certainly flowers best when the pot is full of roots. During the summer it may be grown in an ordinary greenhouse, shading from hot sun, and feeding with a little weak manure water. Keep the foliage clean by frequent spongings during the winter, and sprinkle freely in hot weather.—J. C. B.

3213.—**Culture and Propagation of Bouvardias.**—Bouvardias are generally propagated by means of cuttings, furnished by plants which have been put into heat early in the year. The cuttings should be struck early in the spring, so that the plants get a long season of growth. Having filled a 4½-in. pot half full of drainage, cover the same with Moss and then fill to within 1 in. of the rim with light free soil, finishing off with clean silver sand, which should come quite level with the rim of the pot. Water gently and allow superfluous moisture to drain away. This done, take off the cuttings with a sharp knife, cutting each one to two joints and insert them immediately, placing the pot in a close case in a warm house where a minimum night temperature of 60° is maintained. Give a little air each morning, and when the cuttings are seen to have made root gradually inure them to the temperature of the house. In the course of a week each cutting should be potted off into a small pot in a well-sanded compost of two-thirds leaf-mould to one-third loam. Place them in a light position, shade from bright sunshine, promoting atmospherical humidity by syringing in hot weather. As soon as three joints are made nip out the point of the shoot, and when side breaks are formed shift into the next sized pot. By shifting on when needed, and pinching in the main shoots, a neat compact little plant full of wood will be formed by the latter end of May. Two courses are then open to the grower: he may either plant out in rich soil in a frame or shift on into 4½-in. pots. The former plan is more generally adopted, as being calculated to ensure a more luxuriant development. During the summer water freely, shade a little in hot weather, exposing the plants to the full air when the nights are calm and warm. Do not stop after the first week in June, and pot them up the beginning of October. By the latter end of the month place them in a warm house near the glass, and near the top ventilators, so that they get a free circulation of air. Plants thus treated will flower well and profusely throughout the winter months.—J. C.

3166.—**Lycopodium Moss.**—The Lycopodium delights in a cool, moist, shady situation, thriving perfectly well in a greenhouse or in a cool apartment. It is propagated by pulling the plant to pieces, taking with each piece a portion of the hard stem, and dibbling them in some sandy peat and leaf-mould. Keep the soil moist, but not too wet, or they will damp. March is the best time to divide it.—C.

3208.—**Winter Decorations.**—You cannot have a better plant than Grevillea robusta, which has elegant Fern-like drooping foliage. Aspidistra lurida is also an excellent subject for the purpose. The yellow Feverfew may be thus employed; it remains fresh and bright throughout the winter.—C. B.

3206.—**Plants for Baskets.**—We cannot help you to a list of flowering plants for baskets having the desired habit. Better fill them with nice foliaged plants, such as the Wandering Jew Saxifrage, Panicum variegatum (very prettily variegated), and Tradescantia zebrina. These three would form a charming contrast, and would remain in good condition throughout the year.—J. C. B.

3173.—**Climbing Rose Trees not Flowering.**—Want of vigour is probably the cause of the tree dropping its foliage. Cut out all the small shoots and prune back the strongest to about four eyes in March. During the summer give occasional waterings with liquid manure.—J. C.

3178.—**Cloches or Bell-glasses.**—These may be obtained of James Carter and Co., 237, High Holborn.

3175.—**Renovation of Soil.**—"Alpha" may dig in the ashes, soot, lime, and leaves, which will improve and lighten a heavy soil, but we should not recommend salt in such a case.—J. Carter.

2802.—**Botanical Distinction of Fuchsias.**—We do not think that botanical descriptions would enable you to determine the species in question. Can you not submit them to a good plantsman or gardener in the neighbourhood? In attempting to determine them by written descriptions you would still remain in uncertainty.—C. B.

3195.—**Climbing Plants.**—Cotoneaster microphylla Clematis flammula (not evergreens, but highly recommendable), golden variegated Honeysuckle, Clematis Jackmani and nivea and large clouded white and Irish Ivies. By planting the evergreens and Clematis alternately a charming effect will be obtained.—B.

3167.—**Winter Salads.**—Lettuces, Endive, Radishes, and Mustard and Cress can easily be grown in such a house; and Tomatoes, Cauliflowers, early Potatoes, Seakale, Asparagus, Horn Carrots, early Peas, and in short nearly all kinds of vegetables can be grown if there is space enough. Light, warmth, moisture, and air are the chief essentials, and if these are present in proper quantities success will be easy.—E. H.

3176.—**Plants for Conservatory.**—Camellias, Azaleas, Geraniums, Fuchsias, Genistas, Cinerarias, Primulas, &c. Creepers include Heliotropes, Habrothamnus elegans, Fuchsias, &c. Palms and tree Ferns would look and do well planted in a warm moist temperature.—J. B.

3191 & 3203.—**Pruning Gloire de Dijon Rose.**—In answer to above queries, I cannot do better than refer the writers to two articles on Roses in Gardening, Nos. 54 and 55, where I think they will find the information they want.—Hartside.

3197.—**Insects in Fern Cases.**—It is impossible to advise without knowing what the insect is. Is it green fly? The cast in the soil is caused by small worms, which have bred in or were introduced in the mould.—C.

3198.—**Gloire de Dijon Rose Withering.**—If the tree in question is healthy, we can only account for the Rose not expanding in the supposition that the weather has been too damp and cold lately in your locality. The last autumn blooms often fail to open well.

3109.—**Keeping Potatoes.**—To store Potatoes for any length of time they should be kept in a dark, dry, cool, airy place, and protected from frost.—J. Carter.

3098.—**Prickly Comfrey** (Symphytum asperrimum).—Unless "C. W." has a nice piece of rich free soil, and can dress with liquid manure, we should recommend Prickly Comfrey in preference to Lucerne, as being easier of cultivation. Stock of all kinds may be taught to eat it, and, when they know it, like it exceedingly. If any difficulty is experienced in getting them to taste it, bruise a little and mix it with the other food to begin with.—J. Carter.

3177.—**Kitchen Apples.**—Dumelow's Seedling, Kentish Fillbasket, Cellini, Manks Codlin, Lord Suffield, Warner's King.—E. H.

3210.—**Moving Apple Trees.**—The Apple trees may be moved, if the work be carefully done, as soon as the leaves begin to fall. Have them securely staked to prevent the wind swaying the tops about and displacing their roots.—E. H.

3125.—**Trees fer Shelter.**—For shelter plant the Huntingdon Elm or the Ontario Poplar, or if an evergreen is required plant Pinus austriaca. The Apples, if properly selected, will be ornamental inside the shelter; so would Pears.—E. H.

3212.—**Cucumber Disease.**—Stamp it out by destroying all the plants and everything in connection with them. Have the houses or pits well cleansed, painted, and whitewashed, and start again with fresh soil and seeds from a healthy stock.—E. H.

3119.—**Unfruitful Grape Vine.**—The north is a bad aspect for a Grape Vine. Better remove it, and substitute a Victoria Plum or a Morello Cherry.

3102.—**Autumn Planted Potatoes.**—If the land is retentive or not well drained, adopt the lazy-bed system, *i.e.*, throw the land into ridges with deep alleys between. Dig and manure the same as for spring planting, but plant deeper, not less than 6 in. deep. Plant in October.—E. H.

3101.—**Diseased Peach Trees.**—It is impossible to give any opinion about the diseased Peaches without knowing something of the symptoms, and of these Mr. Bolton does not say one word.

3110.—**Colouring Grapes.**—Bloom on Grapes is a very fragile thing, easily removed, but cannot be replaced. A dense bloom is a point of high culture, and where present signifies the interior management of the house has been suitable. Bloom is often removed by a late use of the syringe; by a careless application of moisture or ventilation its formation is prevented.—E. H.

3115.—**Planting Currants and Gooseberries.**—Trench the ground up 2 ft. deep, or deeper if the soil will bear it, working in plenty of manure; plant as soon as the leaves fall. Old Currant trees will not readily assume the espalier form—better start with young trees. The following are good sorts of Gooseberries: Red Warrington, Companion, London, Crown Bob, Champagne Red and Yellow, Criterion, Golden Sovereign, Victory, Rough Green, White Eagle, Whitesmith.—E. H.

3271.—**White Lisbon Onions.**—Better sell at a sacrifice now and plant the ground with Cabbages at once than hold them on till the spring. I should tie them in bunches and send them to market; they will do for present use, and will go at a cheap rate. The seedsman ought to bear a part of the loss for not supplying true seeds.—E. H.

3175.—**Renovation of Soil.**—The soot, lime, ashes, and salt will be beneficial dug into the land as suggested, but the Pear tree leaves will be better laid up in a heap till they decay, or be mixed with stable manure. If dug into the land at all bury them deeply, but they decompose quicker when exposed to the atmosphere.—E. H.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

3284.—**Leaf-mould.**—*A. Calvert.*—Elm leaves make good leaf-mould, but Oak leaves make the best.

3285.—**White Worms in Garden.**—What can I do to get rid of a lot of small white worms that infest a part of my garden which had some fowls' manure applied to it?—ALFRED CALVERT. [Give it a good dressing of salt, lime, and soot.]

3286.—**Wistarias.**—Is Wistaria sinensis (common single lilac variety) perfectly hardy, *i.e.*, will it grow and flourish in a north or east aspect? also is it usually a quick grower? or does it take time to cover a comparatively small space? climate, S. Wales.—LA ROSIERE. [It is perfectly hardy, and will grow very rapidly in any position when once established, but it will not flower so well in a north or east aspect as in a southern one.]

3287.—**Veitch's Virginian Creeper.**—Is Ampelopsis Veitchi perfectly hardy? Will it flourish and spread in any situation out-of-doors, or must it have a warm aspect? climate mild and southern (South Wales).—LA ROSIERE. [It is perfectly hardy, and if planted against a wall in deep, rich, sandy soil it will grow very rapidly.]

3288.—**Nurseries near London.**—Will you kindly tell me the best and cheapest nursery south-west of London for procuring young trees and flowering shrubs?—ARUM. [There is little difference in the charges made for trees and shrubs by respectable nurserymen near London; you will be honestly dealt with at any of the well-known nurseries.]

3289.—**Shrubs in Lily Beds.**—I have just made a bed for growing large Lilies of hardy kinds; it is shaded by trees, but faces south-east. What plants or low shrubs can I grow to afford the roots shelter and make the bed look green? Can I plant Lilies of the Valley as a border in the front? I have been told they must have a bed to themselves.—E. C. [Choice Rhododendrons or evergreen Azaleas; any beautiful evergreen bush which you like and which does not grow too rampantly. Tufts of Lily of the Valley would do well towards the margin. The shrubs should be placed so far apart that there could be no possibility of their crowding even when old. In this way the character and beauty of habit of each will be better shown than in the usual one, while there will space for the finer hardy flowers between.]

3290.—**Gentians not Flowering.**—I have a few plants of the Alpine Gentian very healthy, but they never flower; they have been in the ground in fair garden soil two years. What can I do for them?—E. C. [If you mean the common Gentianella (G. acaulis), we do not see why it should not flower if it is not shaded too much. It might do good to make the soil firmer round the roots.]

3291.—**Champion Potatoes.**—*Monaghan.*—All these large coarse kinds of Potatoes are liable to be hollow. The reason some of the stalks remain green after the majority have died down is probably owing to the eyes being more dormant when planted; consequently they did not start so soon into growth as the others.]

3292.—**Fowls' Manure.**—*J. T. Z.*—This, mixed with soot and a good bulk of soil or road scrapings, will make excellent material for vegetable land of any description.

3293.—**Red Spider on Cucumbers.**—*J. C.*—Keep up a temperature of 70° at night and 75° to 80° by day; syringe the leaves well every morning early, and when you shut up the house at two o'clock in the afternoon, well saturate the floors, beds, and plants with water. When a sunny day occurs you might keep the house shut up close and syringe frequently during the day, but do not let any portion of the house get dry. Liquid cow manure in a diluted state is excellent for Cucumbers.

3294.—**Wintering Myrtles.**—I have some very large Myrtles in pots which are in the garden in the summer and in an out-house during the winter. Can any one tell me the best method of keeping the frost from them, and if they require to be watered often? One of my best died last winter.—E. B. B. [If the pots were completely buried 3 in. or 4 in. in a bed of ashes close to a wall, and the plants were covered over with a few mats or canvas during severe weather they would be safer than in a dark, draughty outhouse.

3295.—**Wintering Gladioli.**—Would it be safe to leave Gladioli in the open ground during the winter?—E. L. B. [Yes; if the soil is well drained and the roots be covered with ashes a few inches deep.]

3296.—**Raspberry Canes.**—My Raspberries have made numerous long side shoots? Should these be shortened or cut clean away?—E. L. B. [Cut down to the ground all canes which have borne fruit, and leave only those canes which were produced during the summer.]

3297.—**Musk and Lobelias.**—How can I keep some Lobelia and Musk plants through the winter? I have some in pots in the house windows.—BESSIE. [Keep them in a light sunny position in the window, and give them enough water to keep the soil from getting dry. Cut half of them down now, and the others in spring, and see which do best.]

3298.—**Wintering Lobelias.**—How can I keep Lobelias now in the flower beds until next summer?—BESSIE. [Cut off the flowers and seeds and pot the plants, and keep them in a window or greenhouse, giving them enough water to keep the soil in a moist, but not wet state.]

3299.—**Planting Bulbs.**—Should the bulbs of Tulips, Narcissi, Hyacinths, &c., be planted under the mould in the pots or above? I have planted them other years below, but they did never thrive, either in bloom or foliage, and the bulb nearly always rotted. If I commence with a fresh stock of bulbs, what bulbs would you advise me to buy? and how many shall I sow in a pot?—G. H. M. [The bulbs of Hyacinths and Tulips should be potted so that their crowns are just visible above the soil. After potting give them a good watering, and let them remain in the open air for a few hours to drain. Then bury them in ashes or Cocoa-nut fibre, 4 in. or 5 in. deep, until the pots get full of roots; then introduce them to a greenhouse or frame—one Hyacinth in a 5-in. pot, or three in an 8-in.; three Tulips in a 5-in., and five in a 6-in.]

3300.—**Draining Land.**—Last March you advised me to trench my ground 2 ft. or 3 ft. deep, and bury a quantity of old bricks, &c., to drain it. Can I do this now? or shall I wait until later on?—G. H. M. [Do it now.]

3301.—**Wireworms in Land.**—My ground is very much infested this year with wireworms and earwigs. Will you give me some information as to the destroying of same?—G. H. M. [Apply a good dressing of lime and salt, and let the land lay rough all winter.]

3302.—**Cropping Garden.**—My ground is now nearly empty, with the exception of a small plot of Turnips. What profitable vegetables, that can stand the hardship of frost, &c., could I sow seed of now?—G. H. M. [Get some Cabbage plants and plant thickly, and they will give you a few Greens by-and-bye. Dig up remainder of ground, and let it remain till January.]

3303.—**Begonias Eaten by Insects.**—Would some one give me a remedy for this? I have tried washing the leaves in Tobacco water, which has proved unsuccessful.—M. F. J. [It is probably a caterpillar or slug. Search morning and evening under the leaves.]

3304.—**Transplanting Raspberries.**—Will it do to transplant Raspberries just now? Also when should I cut down the old canes?—WILLIAM HERD. [Cut down the old canes now, and transplant the others in a month's time, or early in spring.]

3305.—**Propagating Pansies.**—If I sow Pansy seed now, will it stand the winter outside and produce plants to flower in spring? also will it do to strike cuttings now?—WILLIAM HERD. [The seed should have been sown in August. If you sow now it must be in a frame, where the plants can remain till spring, and be then planted out. Cuttings struck now will flower in spring.]

3306.—**Vines in Pots.**—Will some reader kindly inform me the proper time to plant Vines in pots? what sized pots? and in what soil?—E. J. D. [In what state are your Vines now? We cannot advise you without further particulars. Now is the time to purchase Vines in pots ready for fruiting next year.]

3307.—**Treatment of Adiantum farleyense.**—How should I treat this Fern?—F. W. [Keep it in a temperature of 60° shaded from the sun. Give plenty of water at the roots, but do not wet the foliage.]

3308.—**Length of Pipe for Vinery.**—What length of 4-in. pipe will be required to heat a span-roofed greenhouse 18 ft. long, 12 ft. wide, and 12 ft. high at the ridge, inside measurement, in order to be able to force the Black Hamburgh Grape?—CHINGFORD. [Two rows all round, or if three be put all the better.]

3309.—**Planting a Garden with Fruit Trees.**—My garden is 100 ft. by about 124 ft., and enclosed by a wall 7 ft. high. The soil is mixed, rather gravelly, subsoil loamy, well drained. I want to plant the walls with Plums, Apricots, Peaches, Cherries, and Pears. What are the best sorts to plant, and the distance apart? and which aspect would suit the different kinds?—A NEW BEGINNER. [If you adopt the fan system of training, which might perhaps be the best in your case, you will require fewer trees, and if you select those three years trained you would not be long without fruit. One south wall should be planted chiefly with Peaches and Nectarines, and the other with Apricots. The west wall should be planted with Pears, and one east wall with Cherries, and the other with Plums; the north walls with Morello Cherries, Plums, Gooseberries, and Red and White Currants. Plant the Peaches, Nectarines, Apricots, Plums, and Cherries 18 ft. apart, and the Pears 20 ft. The walls are so low, the trees will require space to extend laterally. The following are good sorts to plant: Peaches—Early York, Royal George, Alexandra Noblesse, Lord Palmerston, Walburton's Admirable; Nectarines—Downton, Elruge, Victoria; Apricots—Moor Park (chiefly), Hemskirke Peach; Plums—Green Gage, Transparent Gage, Golden Drop, Washington, Kirke's, Blue Imperatrice, Victoria, Pond's Seedling, Magnum Bonum, Goliath; Cherries—May Duke, Black Tartarian, Governor Wood, Holman's Duke, Elton Bigarreau (Frogmore), Morello; Pears—Beurre Bosc, B. Brown, B. d'Anjou, B. Easter, Jargonelle, Williams' Bon Chrétien, Pitmaston, Duchesse d'Angoulême, Dovenne du Comice, Foudante d'Automne, Marie Louise, Glou Morceau, Winter Nelis, Bergamot d'Esperen. Plant as soon as the leaves fall.

3310.—**Tomatoes for Winter.**—*Novice.*—Place the plants on a shelf close to the glass in a house where a temperature of at least 60° is kept up. When in flower pinch out the growing points of the shoots on which the flowers are produced.

Old Indian.—Kindly send us your address and we will communicate with you.

Heating Greenhouse.—*O. G. K. Y.*—See GARDENING Sept. 4, page 321.

May Flowers.—*W. H.*—Send us a branch, and we may be able to tell you the name.

Names of Plants.—*Credo.*—Double Marigold (Calendula officinalis).——*J. R.*—Japanese Honeysuckle (Lonicera japonica variegata); it will grow up a wire fence 6 ft. high; it does not bloom.——*Tom W.*—Tradescantia zebrina.——*E. A. H.*—Bocconia cordata.——*T. R. M.*—Some of the large Rose growers might possibly help you with similar material to that you send us, but we cannot.——*Constant Reader.*—Musk; send us something more than a dried-up leaf.——*E. S.*—Send us a spray of the small Fuchsia, and we may be able to name it; there are lots of kinds with small flowers.——*Bebington.*—Spar-mannia africana; it will do in a greenhouse.

QUERIES.

3311.—**Soil for Gum Flax.**—Can any reader inform me the treatment and soil required for Australian Gum Flax and Silver Leaf? I believe they are natives of Australia. I had some seed given me which I sowed, and the plants have come up.—A SUBSCRIBER.

3312.—**Pines in their Native Habitat.**—Can any reader tell me from experience how Pines grow in their native country?—J. BURFORD.

3313.—**Plants for Greenhouse.**—I have just completed a small greenhouse, 12 ft. by 6 ft. Will any of your readers kindly inform me the most suitable plants to grow?—CITY OF LIVERPOOL.

3314.—**Wireworms in Lily Bulbs.**—I have grown Lilium auratum for many years, and every year I have lost a quantity of bulbs, and in every case of death I have found wireworms in the pots. I am very careful with the potting mould (good loam, sometimes a mixture of peat). I look over it and break up any lumps to prevent these pests passing me. I wish some one could suggest any other means of getting rid of them. I am not troubled with them in any other Lily in this manner. My bulbs are all imported ones. Is it possible that they come over in the bulbs, because in one instance I found a worm before potting?—C. E.

3315.—**Climbers for Covering Porch.**—I wish to cover a porch facing north with handsome creepers, that at the same time grow quickly (not Ivy or Escallonia). What should I plant? Will Ayrshire Roses do? and would they bloom, or would no kind of Rose succeed in such an aspect (climate mild, South Wales)?—LA ROSIERE.

3316.—**Lilium auratum.**—I should be glad to have such instructions as to the successful growth of this bulb in pots as may lead to a better return of flowers than has been mine this year, as I have only one bloom on a bulb of the largest size?—S. N.

3317.—**Making Lawns.**—Will some one kindly give a full description of how to prepare the ground for and lay down (with seed) an entirely new lawn? the ground would have to lie fallow until the spring.—ARUM.

3318.—**Furze Hedges.**—Would Furze be a good material to face the south side of a Thorn hedge? and if so, what would be the best time to plant it? The soil is sandy loam, well drained. Is there any variety of the common Furze more vigorous in growth than others? I lately saw at Bournemouth tall hedges of this plant, beautifully green, and close from top to bottom, and I should be glad to have one like them here if possible.—J. M.

3319.—**Fruit Trees.**—Will some one name the fruit trees most suitable for training against Oak palings facing W. S. and E., suburban garden with stiff clay subsoil? When should trees be planted? and what precautions should be taken?—S. W., *Aylesbury.*

3320.—**Roses for Clayey Soil.**—Please name best sorts of hardy standard or dwarf Roses for W. S. and E. aspects, stiff clayey subsoil.—S. W., *Aylesbury.*

3321.—**Lily of the Valley among Grass.**—Will Lily of the Valley thrive among Grass? The Grass has seated itself too deeply in my bed for hand-picking, and I fear the use of the fork would injure the Lily roots.—M. J.

3322.—**Pyrus japonica.**—Will any one kindly give me some information as to the culture of Pyrus japonica? Mine, which is trained against a south wall, grows so slowly, though it generally blooms well. I should like to know how it should be pruned?—E. A. H.

3323.—**Hyacinths for Windows.**—Will some reader favour me with directions as to soil and manure for Hyacinths, time of planting, &c.—J. E. CHEESE.

3324.—**Old-fashioned Flowers.**—I have a border 100 ft. long by 2 ft. wide, facing the S.W. Can any one give me a list of cheap old-fashioned perennials suitable for such a border? At present it is fallow, but has had Strawberries on for a year or two.—ORNITHOLOGIST.

3325.—**Name of Rose.**—Can any one tell me the name of a Rose that grows on the wall of the Villa Doria, at Genoa? It is a large yellow Rose, with a peculiar blood red shade through it.—H. J. P.

3326.—**Cinerarias Dying off.**—I have raised some Cinerarias from seed sown in April, but they do not grow ½ in. from the soil; they make plenty of leaves, but they die off. What am I to do, as this is not the first year that I have had the same difficulty with them?—TOM W.

3327.—**Roses for Arches.**—Will some one give me the names of the four best climbing Roses for training over single arches about 8 ft. high? Would Gloire de Dijon be suitable?—H. S.

3328.—**Flowers for Verandah.**—What plants (flowering if possible) would grow on a north aspect trained up the supports of a verandah where there is very little sun?—H. S.

3329.—**Lavender Culture.**—Having been informed that growing Lavender is very profitable, can any one give me information as follows? If it could be grown successfully in Norfolk: what rate of profit per acre would it yield; mode of cultivation; and first cost of plants or cuttings; whether any special class of ground is necessary.—ENFIELD.

3330.—**Sea Sand for Plants.**—Will some reader kindly tell me if sea sand is of use in making up soil for

flowers in the same manner as silver sand is? If so what kind of plants is it best suited to?—Inexpertus.

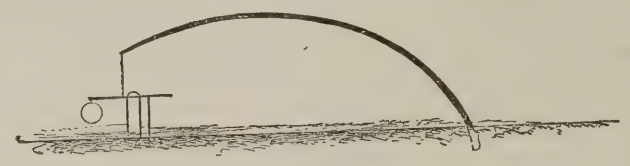
3331.—**Trees for Clay Soil in Devon.**—What kind of ornamental trees, which grow quickly, could I plant near a house in South Devon situated high, and therefore exposed to rough winds? The soil is heavy red clay. I do not want common Firs, &c.—Sevarg.

3332.—**Red Potatoes for Exhibition.**—Would some reader inform me which are the best red round Potatoes for exhibition?—W. G. S.

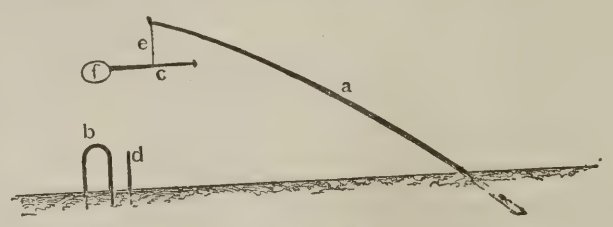
3333.—**Propagating Pyracanthas.**—Will any reader of Gardening Illustrated tell me how to strike cuttings of this? also the proper time for pruning? and what month should trees be removed?—M. B. G.

POULTRY.

Rats in Fowl Houses.—I have always found the following a very good plan to get rid of rats: Cut a good strong stick *(a)* about 3 ft. 6 in. or 4 ft. long, and another small one *(b)* about 1 ft. long. Tie a double piece of twine *(e)* about 4 in. long to the top of the longer stick. Next procure a small piece of stick *(c)* about 4 in. long, make it round at one end and flat at the other, cut a groove round the middle of it to keep the string from slipping, and tie it to the other end of the piece of twine. Now take a piece of thin copper wire, make a running noose *(f)* at one end of it, and fasten the other end securely round the small piece of stick in the same groove as the twine. Cut yet another small piece of stick *(d)* about 8 in. long and your trap is complete. To set it, bend the stick *(b)* into the form of an arch, and stick it firmly into the ground by the side of the rat's run. Next take the small stick *(d)* and stick it in the ground about 3 in. behind the arch, that is, away from the run; now stick the long stick into the ground, and bend it down towards the others: take the stick *(c)* and place it under the arch *(b)*, and rest the end on the top of the stick *(d)*, so that the noose is about 1 in. from the ground. As soon as the rat finds his head in the noose he struggles to get free, which displaces the stick *(c)* from the top of the stick *(d)*; the stick *(a)* then springs up and swings the rat up into the air and strangles him. I think this is one of the most useful traps one can have, as it is impossible for fowls to get hurt in it.—W. T. D.



Trap set.



Trap unset.

Diarrhœa in Poultry.—This disease in poultry is often caused by a sudden change of food, but more often by poor food, combined with exposure to wet and cold. If seen to in its earlier stages it is readily checked, but if allowed to run on it often causes death at the expense of severe suffering. The affected bird should be confined in a warm dry pen, free from draught and fed on soft food only, drink of any kind being withheld. Oatmeal made rather wet with boiling milk and with a good sprinkling of chalk and either cayenne or pulverised cinnamon will in most cases effect a cure. Two teaspoonfuls of cold brandy and water may be given twice a day. Some advise a dose of castor oil before treating as above. In severe cases small quanties of laudanum may be given, dose half-a-teaspoonful twice a day. A fruitful source of diarrhœa is in giving the birds sudden access to unlimited green food after they have been deprived of it for some time.—Andalusian.

Fowls with Coughs.—I have seen with interest the inquiry of "F. H. A." as to fowls with coughs. In attempting to cure a disease it is essential to determine its cause. The causes of coughs in poultry differ. It is possible in the present instance that a peculiar species of worm in the windpipe or lungs may cause the cough, which is not improbably analagous to the "hask" or "husk" in calves, which has, I believe, been prevalent this year, at least in this district. If this be the case, softening the food given will have little practical effect. There are in a fowl two tubes—one through which the air passes to the lungs, the other through which the food reaches the crop. Food or medicine given in food would, I suspect, only affect the lungs indirectly by permeating the system through the blood. To reach the worms (if these be the cause) the birds must be made to inhale some vapour strong enough to kill the worms, but not the fowls. Powdered sulphur burned in a large flower-pot saucer on hot coals would possibly do this, or the vapour of a small quantity of carbolic acid would probably be still more effective. Of course, the birds must be carefully watched during the operation. They might be placed in an open-worked basket in a small outhouse or large box, where the vapour could be confined. The operator must necessarily be guided by their appearance, and himself take care not to inhale (especially the carbolic acid) fumes.—A. K. C. L.

Hens not Laying.—I feed my hens on Maize and give them milk to drink, but they do not lay, and, as they are not moulting, I am at a loss to account for it. What is the best plan to adopt with them?—B. J. C.

Salt for Poultry.—Salt is bad for hens, as it causes blindness.—W. B.

Rearing of Poultry.—*S. R. T.*—The Honourable Mrs. Arbuthnot's book on poultry is a good one. It is called "The Henwife."—Mrs. M.

Duck with Webless Feet.—I have a drake with no webs to his feet and his bill pointed, the edges turned up and serrated. Is not this a curiosity? He was one of eight of my own settings; six were as usual, and there was one drake like this one.—G. W.

Broody Hens.—Forty years' experience teaches me that the happier fowls are the more eggs they lay, consequently I disturb mine as little as possible. Putting fresh ones in disturbs their laying for a week. When a hen has laid a lawter, Nature requires rest to keep her healthy. My practice is to let her sit on a dummy egg in the breeding compartment away from the others; she has a dust bin to roll in. I feed her once a day. At the end of three weeks I take away the nest and turn the box upside down, keep her there for two days, then turn her in with the others; she takes no more notice, and in a week commences to lay. I believe I get as many eggs as is possible to get by any undue pressure.—T. C.

Fowls' Feathers Coming off.—One of my Dorking hens has now been for about two months stripped of its feathers from its back and head. I have waited to see if they would grow again, but it seems as if they will not. I feed the fowls twice a day on poultry mixture and once with scraps from the kitchen table. The mixture contains Hemp seeds, which I have been told is the cause of feathers falling off. How can I get the feathers to grow again?—G. H. M.

Books on Poultry.—Lewis Wright's "Illustrated Book on Poultry" is now considered the standard work on poultry; Tegetmeier's is also very good. There is a cheap work, published at 170, Strand, entitled "Poultry for Prizes and Profit," and another on "Fowls," by Baily, Mount Street, London, both useful little works.—J. D.

Vermin in Fowl Houses.—I have found washing the nests and floors of fowls' houses with diluted carbolic acid is a good way to destroy vermin. See also that the fowls have plenty of ashes to roll in.

HOME PETS.

Parrot Poisoned with Parsley.—Can any reader tell me if Parsley is poison to parrots? We were told it was so, but a servant not knowing it gave a piece of Parsley to a parrot last week; all that day the bird would not eat or speak, and next morning was lying dead in its cage. As Polly was in good health and plumage up to the time of eating the Parsley, and there was no apparent cause for her death, I should like to know if any similar case has been known; also what poisoning properties Parsley can contain. The parrot was dull and drowsy, but her feathers remained unruffled.—H. J. P.

Baths for Cage Birds.—Will some bird fancier kindly explain whether canaries or any other cage birds should receive their bath whilst they are moulting.—Amateur.

Canaries for Exhibition.—Will some one kindly say which are the best sort of canaries for show purposes?—Amateur.

Keeping Jays.—"J. V. M." should feed his jays on Acorns, fruits, Beechmast, worms, cockchafers, and other insects, as well as mice, frogs, and small reptiles, or they may be fed like the raven upon pieces of raw meat (beef and mutton being preferred), ground Oats, mixed stiffly, and any table scraps; they are also fond of picking a bone.—Canary.

Breeding Canaries.—Having a convenient place, I wish to go in for breeding canaries; will some of your readers inform me as to the best time to commence, and the best book of instructions to procure.—Beginner.

Book on Goats.—"Kid" will find the address of the British Goat Society at 6, Strand, and the best and only book, I believe, at a shilling, is the "Book of the Goat," published at 170, Strand, W.C.—G. Robjent.

BEES.

Commencing Bee Keeping.—I have read the article by "Bar Frame" in Gardening Illustrated of September 11 with the greatest pleasure. I wish he would give us more of his experience. I began to keep bees a short time ago, and bought a stock hive from near Hitchin. I met it at Finsbury Park Station, where I found the bees had got out and were flying about, when I got it home, and found that the honeycomb had got knocked down and probably half or more of the bees were killed. The bees again got away whilst I turned the hive upside down, and got four pieces of comb in again. The bees had settled then on a wall. I brushed them into a new skep which I inverted under the old skep with the comb in (fastened by two canes). After being out for the night the new skep was taken away and the floor board put under the old one. The bees are in now, and appear only to cover the inside of the two middle combs, that is so far as I can make out by lifting the skep and looking under. Possibly the queen bee was destroyed with the others. I want advice as to how to proceed now. There is a bung in the crown of the skep, but nothing over it. Would it be well to try to get another lot of bees into the skep to strengthen the hive, and make sure of its having a queen? The honeycomb with honey, dead "brood," &c., not utilised is at my disposal—more than half of what was in the hive at first. Would it be well to get a "frame" hive fixed in some of this comb, then put in bees obtained from some one with a swarm at his disposal, and try to keep them through the winter by feeding? I may say the bees were out two nights near the hive.—J. W.

Bee Keeping.—"Kensington" may commence bee keeping at once by purchasing a stock or swarm, but they will not work in supers now. The months of May, June, and July is the proper time for supering. The price of a stock will depend on what kind of hive they are in; bar frame hives are most of them dear. A common straw flat-top hive, weighing with bees and honey about 30 lb., may be purchased for about 30s. to £2, according to the weight of the hive.—Apiary.

Disposing of Bees.—I wish to dispose of six or seven beehives or their contents. Living in rather an out-of-the-way part of Ireland, I find no sale for them. Will some one suggest what I ought to do?—C. D. E.

Bees in Windy Weather.—I have read that bees in windy weather take up little stones to poise themselves when flying, as described by Virgil in his "Georgics," Lib. iv., 194, 195, and also by Aristotle. Is it true?—D. E. M.

Slinger for Bees.—"Bar Frame" says any tinker can make a slinger. I would like very much to get one, but don't know what it is like, and can't get a tinker to work without instructions. Would "Bar Frame" give directions with dimensions, and if possible a sketch of what a slinger is like? I am sure it would be a great boon to many who, like myself, are beginning bee keeping.—A Novic

Dark Honeycomb.—"Amateur Bee Keeper" will always find comb dark that has been three or four years in the hive. As to its being empty, it is either from the death of the queen or from robbers. Bees will rob each other, and wasps are great robbers of honey at this time of the year. If you wish to drive your other hive you can do so of course, but lift it up first to see if it is worth driving. If it is a late swarm it may be empty, but you must feed the bees liberally if you drive them. Not less than 25 lb. of syrup should be given to each hive.—Apiary

Keeping Bees through the Winter.—I have lately bought two stocks of bees, and find the hives are full of combs, that one hive weighs 21 lb., and the other 22 lb. without the floor board. Is this sufficient to keep them well through the winter? and if not, how must I feed them, and what with? I wish them to throw off strong and early swarms, and shall be thankful for any hints to attain this end. I should add that the hives are made of straw and rather old.—A Weaver.

We regret to announce the death of Mr. Arthur Veitch, of the firm of Messrs. Veitch and Sons, Royal Exotic Nursery, Chelsea, which took place quite unexpectedly on Saturday, September 25.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

WHITE LAPAGERIA (L. ALBA).
Sketched from a Spray of Flowers grown by Mr. Titus Salt.

LAPAGERIAS.

If we had a greenhouse, either heated or unheated, in which there were only room for one climber, we would plant the white Lapageria (L. alba). If two plants could be accommodated, we would add the rose Lapageria (L. rosea). Both will grow well and rapidly when they once get a start, and yield an abundance of wax-like blossoms all through the autumn months. A greenhouse kept at a temperature of 40° to 45° during winter suits the Lapagerias best, but in an unheated greenhouse they will grow and flower freely so long as their roots never get frozen. Lapagerias do fairly well in pots filled with moist, fibrous peat, with the addition of a little turfy loam, but they must not on any account be allowed to become dry at the root. Planting out, however, will be found to be the best plan, if there is convenience for so doing, as it is less troublesome to the cultivator, and gives better results. When planted out in a cool, peaty compost, and trained on the roof of a partially shaded greenhouse, Lapagerias seldom fail to make luxuriant growths and to flower abundantly. For glass corridors such plants are peculiarly adapted, and never fail to bloom well if liberally treated with regard to moisture when making their growth. The shoots should be trained close to the glass, where they will flower their whole length. The best plan is to stretch wires 4 in. or 5 in. apart in the direction in which the shoots are to be led, and they should be allowed to follow the wires themselves, which they will do—twisting along as neatly as possible—without the least assistance, except that when more than one shoot is allowed to a wire care must be taken to prevent the leaves being caught in the twists. To attempt training the shoots by ties is troublesome, and not a successful plan. Stopping the shoots occasionally induces flowers to come sooner than they otherwise would do, and produces little spurs, each of which furnishes several flowers. When the wires are covered the side shoots should be allowed to droop loosely, by which means, when thickly laden with bell-shaped, waxy flowers, a much better effect is produced. In sunless places in cool houses even in London these plants succeed perfectly, and can therefore scarcely be too highly valued. Lapagerias may be planted almost at any time from March to October with every prospect of success. If plants be obtained from a nursery in pots, they should be turned out, and the soil should be carefully loosened from the roots, which, when clear, should at once be laid carefully and regularly out in the new compost, covering them with 2 in. of fibrous peat rubbed through the hands. A good watering should then be given, and the soil never after be allowed to become dry. Lapagerias are generally propagated by means of layers, but the demand for the white variety, which is still sold at rather high prices, has induced raisers to try more expeditious plans of propagation. Layering is, however, the safest plan. The shoots of the previous season are simply bent down around the parent plant, and pegged on a bed of peat and sand, and covered over, leaving the point of the layer above the soil. Roots are formed at the joints, and several plants sometimes spring from the same shoot, springing up like Vine eyes but the points of the shoots usually make the strongest plants. When the Lapageria is propagated by seed—a plan not to be recommended—the seed should be sown as soon as ripe in a pan of fine soil, covered with a pane of glass, placed in a gentle heat, and kept moist.

VEGETABLES.

HOW TO GROW GOOD LEEKS.

Preparing the Soil.—The soil in which it is intended to grow Leeks should be lighter than that in which Onions are generally cultivated, and they thrive best in alluvial deposits of rich black earth thoroughly impregnated with decomposed manure. What is known as rank manure is not at all suitable. The best mode of preparation for Leeks is to dig or trench the ground early in autumn, covering it with a heavy coating of manure, and leaving it as rough as possible during winter to mellow the surface and assist in the perfect decomposition of the manure.

Sowing.—About the middle of February sow the seeds either in rows at distances of 1 ft., or even 2 ft. apart (according to the richness of the soil, the mode of culture to be adopted, or the size to which the produce is expected to grow), or in a seed-bed of rich soil. The seeds should be covered with about ½ in. of soil, and the surface finished in the same way as for Onions. Sow again in March, April, and even May, for successional crops; these latter sowings should be in drills from 12 in. to 15 in. apart, and the plants should remain where sown to come in during the winter and spring months. Where a constant supply of Leeks is required successional sowings are necessary, for the first-sown will grow under liberal treatment to a large size, and are not so hardy as those of a smaller size and later growth; all that is requisite to be done is to thin them to the extent of from 6 in. to 12 in. apart in the rows and to keep them clear from weeds throughout the summer; those sown in March might also be earthed up with about 4 in. of earth on either side of the stems before winter sets in. The success of the crop is mainly dependent upon the manner of sowing the seed, which operation should be performed thinly, whether in drills or broadcast on a seed-bed, in order that the plants may not be weakened, for thousands of plants are crippled and damaged for life by overcrowding in nursery beds and lines, which no subsequent attention can repair.

Thinning and Earthing.—On the heels of thin sowing severe and prompt thinnings must follow, which thinnings may be planted in either of the ways described further on. But I will first deal with rows planted so widely apart as to be left till the Leeks have attained their full size where sown. As soon as the crop is thinned to about 1 ft. from plant to plant, hoe the ground well to clear the surface of seed weeds; within a week, draw some loose sweet earth up, so as nearly to touch the Leeks on either side, and leave a small ridge 1 in. or 2 in. from the plants, which will then stand in a small drill. Hoe the level surface again, and as the Leeks grow, draw a fresh supply of fine, sweet soil to increase the size of the ridge, and so proceed throughout the season. As they develop in size of top and number of roots, sprinkle a little guano on the surface before each earthing up, and flood it occasionally with guano water or house or yard sewage, for the Leek is a moisture-loving plant with a superabundance of roots, and should never be allowed to become dry; if the plants receive such stimulating and nourishing treatment as that just mentioned, they will make extraordinary progress. After August the earth may be drawn up quite close to the stems on either side, forming a ridge from about 1 ft. to 1½ ft. in height, which will have the effect of blanching the stems to that height, and will insure that whiteness, solidity, and mildness which are the chief recommendations of a perfect Leek.

Growing in Trenches.—Another mode of growing fine Leeks is to form trenches for them in the same way as for Celery, though not so wide—9 in. or 12 in. being quite sufficient. Fill each trench at the bottom with about 6 in. of well-rotted, rich, light manure; surface this with a few inches of soil, and leave the top from 6 in. to 12 in. deep. Plant the Leeks out of the seed drills or beds into the trench in dull, showery weather, taking care to preserve all their roots. This will be found a most convenient method to allow of the easy application of water and manure. See that the plants are kept clear of weeds. As they advance in growth fill in the earth a little at a time; this will refresh and stimulate the plants. By the end of the season the trench will be level with the surface, or probably converted into a slight ridge on either side of the Leeks, which will be from 12 in. to 18 in. long, thoroughly blanched, and of the finest quality. Leeks are sometimes planted with a dibble in newly-dug, highly-manured ground in the same way as Cauliflowers or Cabbage plants, and simply left to shift for themselves.

Crowbar Planting.—This is the last mode to which there is any occasion to refer, and it is doubtless one of the best The ground can hardly be too rich and fine for this style of planting; where it is otherwise, a huge crowbar or dibble is often used to make a hole from 18 in. to 2 ft. deep, and about 4 in. in diameter; several inches of the hole are then filled up with rotten manure or rich compost, on which the Leek plants are then dropped, and frequently left to shift for themselves without any subsequent treatment; and they mostly grow so fast that before the autumn their long blanched stems have filled the holes and hidden them and the whole gronnd with crowns of enormous leaves. It used to be customary to crop the leaves of Leeks at the time of planting to check evaporation, and also, as was supposed, to throw more strength into the roots and stems, while some cultivators, with the same mistaken notion of the effect, took the points of the leaves several times during the summer; but experience has since proved that the leaves and the roots must be left intact as far as is possible if the finest Leeks are to be produced.

Lifting the Crop, &c.—These useful vegetables are in season from September to April, though it is possible to have them earlier and later. Those sown in February will last until the end of January, and those later sown will keep well without running to seed till April or May. Many cultivators take up their Leeks in the autumn, and "heel" them in closely together, and rather deeper than previously, after the manner of Broccoli; some also cut off the roots, and store them in earth or sand like Celery is preserved in cold climates; they are, however, apt to lose flavour when kept long after this fashion either in the ground or in a cool cellar. It is a common practice with those who wish to prolong the Leek season as far into the summer as possible to lift the entire crop about the middle of March, and lay in the plants pretty closely together, without unduly crowding them, in a north border, choosing the shadiest and coolest position.

Varieties. — There are several kinds of Leeks, as the St. David's, Musselburgh, London Flag, Ayton Castle Giant, Large Rouen, and others, all garden selections from the original species—Allium Porrum, and perhaps A. sativum and A. lineare, either of which will develop into fine Leeks if well cultivated. There are few plants that pay better for liberal treatment, or sooner resent neglect in any shape, than Leeks. D. T.

Scarlet Runners for London Gardens.—On my way through Hammersmith the other day I noticed that the outhouses belonging to several cottages were almost entirely hidden by the green foliage and flowers of the Scarlet Runner; and, contrasting these places with others that were black and grim-looking, I could not but regret that so few of the inhabitants of London turn to account their small but valuable space in this way. Nothing is more easily accomplished than to cover all available spaces with Scarlet Runners, which, in addition to forming a pleasing and refreshing sight to passers-by, would be a source of pleasure, as well as a pecuniary benefit, to the occupiers. A plentiful supply of water and a fairly-drained ordinary soil is all that is required to ensure success. Liquid manure is, of course, a great help in poor soils.—S.

Parsley for Winter.—I know of nothing in a small way so useful as Parsley. Many take it up and grow it under glass, but no coddling is needed. When we plant our Broccoli in July, we take a little Parsley seed and sow it broadcast amongst them. The young Parsley plants grow with the Broccoli, the large leaves of which duly protect them in the winter, so that a good supply is always at hand.—R. G.

Lifting, Wintering, and Cooking Beetroot.—Frost is most injurious to Beetroots, which should, therefore, be dug up by the end of October, or provision should be made for protecting them in the ground, in the event of severe weather setting in; this latter mode, though it entails the greatest amount of labour, is really the best way of preserving the full flavour of the root. Stable litter, hay-bands, or Bracken (Pteris aquilina) will effectually protect Beet, but, of course, where neatness is studied rather than utility, this manner of protection should not be thought of; in that case, the roots should be dug up at the time mentioned above, and "clamped" in the same way as Potatoes; or they may be layered in dry soil or sand in a cool shed, but it must be really cool, or they will start into growth and the flavour will become deteriorated. When lifted, the tops should not be cut but screwed off, and the roots should not be injured more than can be helped, as such injury induces decay. Before cooking, the roots should be well washed, but not peeled or scraped, or in any way bruised, for, if such be the case, much of the saccharine matter escapes during the boiling, a process to which preference is generally given, and this mode of cooking doubtless renders Beet most agreeable to the generality of palates; though some prefer to bake it, by which mode a deeper colour of flesh is ensured and a firmer texture, and where these are desired, or the roots much bruised, baking should be the plan adopted.—W. W.

A Cure for Clubbing in Cabbages.—During this season I have been greatly troubled with clubbing amongst the several varieties of the Cabbage family, for the removal of which I have tried sundry remedies. The following treatment I have found to be quite successful:—Having planted seven rows of Brussels Sprouts by way of experiment, I made a paste of equal parts of loam and manure, to which I added some red lead, mixing all well together; the roots of two rows of the plants were covered with the paste exposed to the sun for an hour and then planted; the plants in these two rows are quite as large again as the others, and are all of equal size, while the remaining five rows are clubbed, and they seem to diminish instead of increase in size.—W. S.

Destroying Wasps' Nests.—I have seen many remarks lately about the unusual number of wasps and the best mode of taking their nests. I have taken ten about my house with the greatest ease and safety by means of a common squib of gunpowder rather moist. Go after dark to the nest, light the squib, and put it into the hole; then put a sod on the top for two or three minutes; then dig out the grubs and comb and destroy them. Pouring in water or coal-tar, &c., will not do, as very often the nest is higher than the hole; and although the wasps are stupified for a time they revive afterwards, and the young ones hatch out. To destroy the nests properly the grubs and comb must be dug out, and the grubs make good bait for fishing.—D.

Salt as Manure.—When applied as a winter dressing to vacant land the beneficial results of salt are twofold—it destroys insects, and, when thoroughly incorporated with the soil, eventually assists growth. When applied to crops in a growing condition, the best plan is to administer it in a liquid state and largely diluted with water, for although some vegetables will withstand strong applications of it, it is at all times wisest to use it harmless as regards strength, and to give it more frequently. Most of the Cabbage tribe are improved by its application, also such root crops as Beet, Parsnips, &c.; Celery is likewise greatly invigorated by it when given in a liquid form, and its application is a means of keeping off the attacks of slugs and similar plagues, which in some soils greatly disfigure it.—J. G.

FRUIT.

SETTING OUT ORCHARDS.

In this operation two important requisites must be kept in view: the first is to do the work well, and the second is to do it at small expense. If needless cost is avoided, the owner can afford to perform the operation better than where every part is encumbered with heavy outlay. For example, if instead of doing all the digging by hand labour, a large part can be effected with horse power, there will be less occasion or excuse for its superficial performance. The more nearly straight the rows are set, the easier will it be to cultivate between the trees. The best way is to mark off intended rows with stakes driven into the ground on the four sides of the allotted piece of ground. Procure a strong cord, which may be as long as one side of the ground, or as long as a portion. With a measured pole mark off the distance for each tree, and stick a common pin through at that point as a temporary mark. Then, for permanent and more visible marks, sew red yarn through the cord; this may be easily seen in future operations. This cord will enable the operator to stake out easily and correctly the four sides of the lot. Be careful to have these outside rows of stakes straight. Next, to save the labour of digging large holes by hand, and to supply a deep mellow bed of soil for the future roots of the trees, run the plough straight across the field between opposite stakes for each row. Allow 6 ft. wide for each ploughed strip of ground, beginning outside of this strip and throwing the soil outwards from the centre. Repeat this ploughing, and then deepen the loosened bed of earth with a subsoil plough. Previous under-drainage is, of course, essential if the subsoil is liable to hold standing water; and the addition of old manure, to be repeatedly mixed in while the successive ploughings are going on, will materially aid growth if the land inclines to sterility. The owner need not deem it wasted labour to do several successive ploughings, for the more mellow the bed of soil is made the better it will be for the trees, and the easier will be the work of planting them.

Everything is now ready for final staking and planting. Take the cord already marked and stretch it from stake to stake in the middle of each ploughed strip of ground. Stretch it just enough to reach the opposite stake, and fasten it. Then proceed to stick in a small peg or corn-cob at every red yarn mark. The exact place for every tree is thus rapidly made, and when the whole ground is marked, it will be

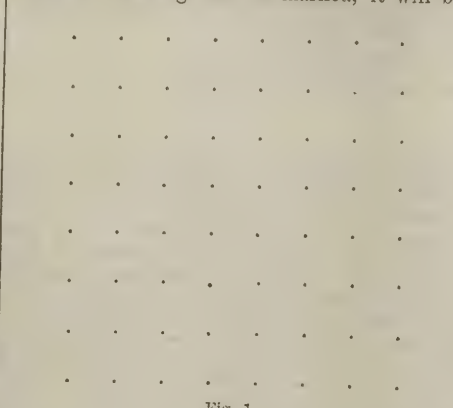

Fig. 1.

like fig. 1. Without stopping to look, they will all range perfectly both ways.

The next thing is to set the trees. A common and slow way is to set each tree by looking both ways with the eye, requiring much time and care, and often obtaining crooked rows in the end. But with the method here described no "ranging" whatever is needed; the work is

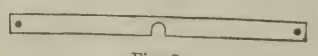

Fig. 2.

rapidly done, and the rows will be so straight, that in looking along them the first tree will hide all the rest. Next take a strip of board, say about 8 ft. long and 6 in. wide, as shown in fig. 2, and cut a notch in one side at the middle, just large enough to let in the stem of a tree. Bore a hole through each end exactly at equal distances from this notch. Then whenever a tree is to be planted, place the middle notch around the peg, and thrust two other pegs through the holes at the ends. Then take up the board, leaving these two pegs, dig the hole, replace the board, and set the tree in the notch. Proceed in this way till the whole orchard is planted. It is obvious that the trees will stand precisely where the first pegs were placed, and will range in perfect rows. A large number or series of the two pins may be set successively by the board, so that a number of workmen may be digging and planting at the same time.—*Country Gentleman.*

Pruning Bush Fruits.—The pruning season being close at hand, a few words on the subject may not be unacceptable. The Gooseberry, though undoubtedly one of the most popular of fruits, is nevertheless seldom managed as well as it ought to be. It may often be seen in the form of a stunted, starved bush, crowded with old, Moss-grown, unfruitful wood, or as a great, overgrown, ungainly bush, with nothing in the shape of fruit-bearing wood about it. In a general way, both these incongruities arise from mismanagement. Another form of mismanagement may be found even in some well-kept gardens, where the bushes are annually pruned into some symmetrical form, regardless of their fruit-bearing properties. The Gooseberry will grow and succeed well in almost any soil, but it does best, undoubtedly, on deep, rich alluvial deposits. Grown in such soils it sometimes becomes, as regards size, a tree. Given a good suitable soil and healthy plants to begin with, there ought to be no difficulty in keeping Gooseberry bushes always in a shapely form and bristling with strong, clean, healthy fruit-bearing wood. It is no uncommon thing in many gardens to follow the pernicious practice of cutting the young wood back to two or three buds—a system decidedly wrong, because it does away with a large amount of fruit-bearing wood, and also because the Gooseberry, being naturally addicted to making spurs, this system induces it to make many that have eventually to be removed. To avoid this, it is necessary to remove entirely all superfluous wood and to leave the leading shoots quite two-thirds of their length. At the same time all overcrowding must be avoided. Bushes treated in this manner rarely fail to produce heavy crops of fruit of the finest quality. It will also be found that they will bear well up to the very tips of the previous year's growth, an important advantage in cases where fruit is grown for profit.

Red and White Currants, as a rule, produce fruit of finer quality when spurred close in than when the wood is left at greater length. Therefore, the most satisfactory way of pruning these is to cut the current year's growth back to two buds. In places where sparrows do not pick out the fruit-buds Currant bushes may be pruned as soon as the leaf falls; but where these little depredators are plentiful it is perhaps as well to defer pruning until spring, unless, indeed, the bushes can be protected from their ravages by means of netting. Our method of pruning these is to entirely remove all the old and worn-out wood, also any superfluous young wood, always keeping an eye to the shape of the bush. The fruiting wood left is not shortened at all, or cut in any way, the great object being to have as great a quantity of strong, short-jointed wood as possible without overcrowding.

Raspberries ought now to have all the old fruiting canes removed, in order to allow a free circulation of light and air through the plantation, without which it is useless to expect the wood to ripen or the fruit buds for the ensuing year to mature. After the leaf has fallen the young canes will have become hard and firm, and will be in a fit state to be shortened. The length will have to be determined by the operator; it should be regulated by the growth which the plants have made, as should also the number of canes to be left. Where the growth is vigorous from five to seven canes, from 5 ft. to 6 ft. high, may be left; these may be slightly twisted round each other and bound at the top with a piece of Willow. The twisting causes them to break more regularly than they otherwise would do. Of course where Raspberries are grown as espaliers this twisting is unnecessary.—T.

Out-of-door Grapes.—The summer of 1879 was so sunless that few of the out-of-door Vine shoots of that year were sufficiently ripened to produce fruit-buds. But an exception has to be made in favour of Miller's Burgundy, which has, with me, produced a good many bunches, although small (they are generally small at the best), and which have ripened perfectly, and are ripening, in the present nice warm weather. The flavour of this Grape is exceedingly good, and Mr. Hoare, in his treatise on the culture of the Vine on open walls, truly describes it as "a very hardy and prolific Grape, and one which ripens perfectly in any season." It may be remarked in contradistinction that Sweetwaters this year, in consequence of the non-ripening of their buds during the last, are, as regards crop, a total failure. The Black Grapes, such as the Miller and Esperione and allied kinds, seem to be decidedly preferable to Sweetwaters and White Muscadines as regards fruitfulness in unfavourable seasons.—J. M., *South Hants.*

Autumn Crocuses.—This is a name applied to the autumn Meadow Saffrons (Colchicums) on account of the close resemblance of their flowers to those of the ordinary Crocuses. The genus Colchicum consists of hardy bulbs that flower in the autumn, just when summer-blooming plants have lost their freshness, and when the days begin rapidly to shorten. Unlike many bulbous plants, their presence in the ground early in spring, when the borders are being prepared for summer-flowering plants, is not likely to be overlooked, for after the flowers have disappeared in autumn, we find no trace of them aboveground during the winter months, but amongst the earliest harbingers of spring appear the vigorous leaf-stems, bearing three or more leaves, and carrying with them the seed-pod or capsule. It would hardly be possible for those who have not seen the various varieties of Colchicum in bloom to conceive how beautiful they are in the flower garden, and how valuable for prolonging the succession of flowers. In September and October, and even in November, the display produced by a good collection of Colchicums proves most attractive. Some of the varieties have beautifully chequered flowers, and most of them are so floriferous as to cover the ground with a sheet of blossom, and as the leaves do not appear till spring, at a little distance the effect is peculiar, there being nothing but colour. The best position in the flower garden for Colchicums in the mixed flower and shrubbery border, or separate little beds may be made on purpose for them, where they can be planted in carpets of Stonecrops (Sedums) or Mosses, so that the blooms will not get splashed with soil during heavy rains. All the species may be grown successfully in ordinary garden soil, but to have them in perfection, choose a situation fully exposed to the sun, with the soil of a sandy character; in fact, such a spot as is likely to dry up during summer—here they will luxuriate and enjoy the autumn, winter, and early spring rains. Colchicums may also be grown in pans or vases in the same way as the spring Crocuses, and they will also succeed in small vases of water like Hyacinths. They require to be planted in June, July, or August whilst the bulbs are at rest. The species and varieties most worthy of cultivation are C. autumnale, the well-known British species, with its many varieties, varying in colour from deep purple, rosy-purple, and rose to pure white, while some forms are more or less striped with white; the same species has also several very beautiful double forms. C. byzantinum, which we now figure, is a noble species, the petals of which are of good substance and very regular in outline—the whole flower most perfect in form. Of this species there is also a handsome form with variegated foliage, C. variegatum, and another very beautiful kind named C. Parkinsoni (figured in Gardening, October 11, 1879) has the flowers chequered in a manner somewhat similar to the Snakeshead (Fritillaria Meleagris); C. speciosum is probably the noblest plant of the family. It is a native of the Caucasus, and it is also said to inhabit the south-west shores of the Caspian Sea. Although this species varies a little in point of colouring, the annexed illustration in no way exaggerates the beauty of the plant or its size, but may be regarded as a good typical specimen; a few, however, are a little darker in colouring. Like C. byzantinum, it is exceedingly floriferous, as indeed are all the section more or less, each bulb throwing up many flowers. There are many other species of Colchicum well worthy of cultivation, but those just enumerated may be considered the best.

Autumn Crocus (Colchicum byzantinum).

Chrysanthemums in Pots. — Cold nights remind us that frost is near at hand, and that it is high time that even such hardy plants as Chrysanthemums should be safely housed, or be so stationed that they can be afforded temporary shelter to preserve their buds from injury should cold weather set in. In cases where they are removed to the shelter of glass, it should be where they can have a damp atmosphere surrounding them, such as is afforded by standing on the soil of an orchard house or Peach border, and if this be supplemented by an occasional syringing, the plants will be all the better for it. See that they are kept well supplied with liquid manure, and never allow them to become at all dry at the root, or the foliage will soon become shabby, and the blooms will not attain their full size or proper development. —J.

Wintering the Rice-paper Plant.—The usual mode of wintering this plant, Aralia papyrifera, is in greenhouses; even those used in the flower garden in summer are taken up in October, potted, and stored under glass. Such, too, is the safest plan, but where stock is plentiful, the plants strong, and have been growing out of doors during summer, the following plan, which is practised at Battersea Park, may be tried: Mulch the ground over their roots with leaves or litter, and twist a straw or hay-band around the stems of the plants. In spring, by pruning back to prominent eyes in the old wood, the plants soon start into growth and progress vigorously, amply compensating with large and broad leaves the care bestowed on them. As soon as all fear of hard frost in spring is over the bands may be removed.—W. F.

Calceolaria amplexicaulis. — This, though in some cases discarded from the flower garden, is, nevertheless, a most useful vase plant, its shade of yellow being so pure and delicate. This morning I measured some shoots about 3 ft. long hanging from the sides of a large vase of mixed plants. Tropæolum Lobbianum is a good companion plant to it, the shoots drooping almost any length. It is still the most beautiful of Calceolarias, and the most useful where its free habit is not objected to.—P. M.

TUBEROSES FLOWERING THE SECOND YEAR.

In the description of Tuberoses grown out-of-doors at Mr. Ware's, which formed the frontispiece of Gardening Illustrated of Sept. 25, I find that the idea of the bulbs being of little service after the first year of flowering is still adhered to. But as we have had them flower far better the second year than the first after importation, I venture to ask some of your readers to give the plan a fair trial before throwing the bulbs away, as is usually done, after flowering. That Hyacinths and similar bulbs do not flower well the second year after forcing is quite correct, as stated by your correspondent; but, considering the treatment they receive after flowering, this is not remarkable, as bulbs of all kinds that depend so much on fully maturing their foliage, and thereby laying up a store of organised matter in the bulbs for producing flower-spikes the following year, cannot be expected to flower if either deprived of their leaves altogether, or their chance of perfecting their growth almost destroyed by placing them either under half dark stages, or suddenly setting them out in the cold, or drying off before their growth is half completed. In fact, imported bulbs are treated, in the majority of cases, as if their term of existence was at an end as soon as they had flowered the first, for it is nothing unusual to find the sticks that are put to Hyacinth flowers inserted right in the heart of the bulbs, and probably piercing the bulb that would flower the next year right through. If they do not flower much the second year after this kind of treatment it is not anything remarkable, but rather that they maintain their vitality and flower at all. I could enumerate many good examples of more rational treatment, but sufficient to illustrate my meaning is the fact that many of the most successful growers of the much admired Lily of the Valley have forced the same roots several years in succession; but to do this they take the greatest care of the foliage, for one might as well expect our hardy Lilacs, Deutzias, &c., to flower well year after year, if treated like bulbs often are. They are all naturally free flowerers every year, and only fail under very adverse circumstances. But returning to Tuberoses, I may say that when our roots ceased flowering last year, they were placed on a shelf in a cool, span-roofed house, and gradually ripened off by giving less water, and as soon as they showed signs of growth in spring they were shaken out from the old soil carefully, and re-potted in rich, light material, and plunged in a Cucumber pit. They grew away rapidly, so that we gave a shift into larger pots, and as the summer advanced we gave plenty of air, with abundance of moisture at the root and overhead. As their flower-spikes pushed up we removed them to a cool orchard house, where they perfected very fine trusses or spikes of their wax-like flowers, three or four spikes of a dozen flowers each to a pot, and as they made equally good leaf growth as last year, I see no reason why they should not flower equally well next year, and any not required for pot culture will be tried planted out-of-doors, and next year I hope to report as satisfactory a result as that recorded at page 352.

J. Groom.

A Pansy Election.—The greater number of gardening amateurs have limited space, limited means, and few opportunities of seeing for themselves the numerous varieties of each kind of flower that they wish to grow. For these reasons a selection of a few of the very best varieties is at once their best policy and their most difficult task. They cannot see for themselves the hundreds of varieties of the Rose, the Pansy, the Viola, &c.; they cannot trust to

catalogues ; they probably know no one who is a competent judge from whom to obtain the information and guidance they need, and they have neither time, space, nor means to try for themselves one after another all the varieties contained in every nurseryman's list and stock. For these reasons you would confer a great boon on your readers by holding what are called elections, to settle the relative merits of the different varieties of each kind of flower. May I suggest that you should help your inexperienced readers by kindly undertaking an election for the class of bedding Pansies and Violas. It is of no use attempting to distinguish a Pansy from a Viola for this purpose, as it is often difficult to determine under which class some varieties should be placed, and it matters not whether the variety be a Pansy or a Viola if it possess the qualities needed. I would suggest that experienced persons be invited to favour us by recording their votes for the Pansies or Violas which they consider the very best for bedding purposes in answer to the following test questions : Which are the three best varieties of purple, of blue, of yellow, and of white? their merits or qualifications being determined by their possession of the following qualities : (1) long and continuous blooming ; (2) profusion of bloom ; (3) high quality of the individual blooms, both as to shape, colour, and size ; (4) robustness of constitution, enabling them to stand cold and heat, and ordinary soil, and needing no coddling or special care ; (5) dwarfness and compactness of habit, making them less liable to be injured by strong winds. It would undoubtedly be a great advantage to your inexperienced readers to know what 12 varieties were considered by competent authorities to combine all the above qualifications in the highest degree ; and also which variety of each colour was most generally voted to the highest place of excellence.—A Perplexed Lover of Pansies and Violas.

Pentstemon gentianoides.—This is the common garden Pentstemon bearing large panicles of purplish-red flowers during the summer months. It flourishes freely in light sandy soils, and forms full handsome bushes, but in wet clayey soils it perishes in winter. The florists' varieties of Pentstemons are, perhaps, better adapted to stiff cold soils than this.

HARDY FLOWERS FOR SMALL GARDENS.

(Continued from page 343.)

In the foremost rank of hardy flowers stand the Primrose and the Polyanthus. Their merits are too well known to need description ; at the same time I would observe that there exist many fine and distinct varieties of these charming spring flowers which do not appear to be extensively grown. Some few of them appear to need especial care, but the majority are of easy culture, are extremely hardy, and bloom most abundantly.

Primroses. — These are very pretty and effective, and comprise shades of crimson, purple, rose, yellow, lilac, and white, and it is easy to form by their means alone a most interesting feature in the garden. What they really need in order to grow them to perfection is a free, fairly enriched soil, and if accorded a position where they may enjoy positive shade they will repay such care by a luxuriant growth, increasing in strength and beauty with each succeeding year. P. cortusoides amœna is a charming plant, which should be in every garden. It has this year proved itself to be extremely hardy, growing with the greatest freedom, and flowering profusely in well-drained positions at an early period of the year. The foliage of this Japanese Primrose has an extremely fresh and verdant appearance, showing up to great advantage the numerous umbels of rose-coloured flowers which issue from it. This is one of the very first plants that an amateur commencing the culture of hardy perennials should procure, as it is no less distinct than beautiful. Primula denticulata is a pretty and interesting little plant of vigorous growth, with fresh bright green foliage and bluish-lilac blooms. It is a moisture-loving plant, and should be accorded a sheltered situation, as, blooming at an early period of the year, it is apt when growing in an open, exposed position to be much disfigured by heavy rains. P. capitata is an attractive kind, which flowers at a much later period and is worthy of a place in any collection ; and the beautiful P. japonica must not be forgotten. I should, however, mention that this latter plant is somewhat capricious in its likings, being liable in some soils and situations to die off in the winter. Those who are favoured with a nice, mellow, sandy, well-drained loam may hope to attain complete success in the culture of this handsome member of the Primrose family, taking the precaution, however, of protecting the crowns with a little litter during periods of severe weather. It is, however, more the combination of cold and wet than cold itself that is to be dreaded. Planting, therefore, in free, well-drained soil will do much towards securing good results in the culture of this plant. Another interesting and pretty kind is found in P. farinosa, a native species, forming dense tufts of silvery foliage. It should be accorded a damp situation. There are also P. luteola, involucrata, integrifolia, and scotica, all of them beautiful, and worthy of a place in any collection of hardy plants.

The Polyanthus.—This is a charmingly

Common Pentstemon (P. gentianoides).

effective plant, the presence of which would of itself suffice to render a garden gay and interesting in early spring. The Polyanthus has long been subjected to the manipulations of the florist, and many beautiful named varieties of it still exists, many of which, however, require some protection against the vicissitudes of an English winter, and which display their lovely markings to much greater advantage when afforded the shelter of a glass roof at the blooming period. I should, however, observe that it is not from cold that the plants suffer, but from the combined influences of cold and wet. A cold frame, therefore, is all that is needed to preserve them in health and vigour. The named varieties of the Polyanthus are rarely seen in good condition, and although growers are commencing to pay more attention to them, owners of small gardens who may not wish to be troubled with tender plants would find in the Polyanthus a fine subject for a hobby. A collection of two or three dozen kinds would afford much pleasure and occupation, and in yearly raising a batch of seedlings from them there would be the gratification of obtaining new and interesting forms, and there is always the chance of raising a new variety of sterling merit.

There would also be the advantage of obtaining a number of fine, showy flowers for the embellishment of the flower garden. Those who might desire to quickly work up a stock of plants for open-air decoration should procure a packet of seed of a first-class strain. Sow early in spring in well-drained pans of sandy loam and leaf-mould, two-thirds of the latter to one of the former, slightly covering the seed and placing the pan in a frame, and covering it with a pane of glass. When the seedlings appear, gradually inure them to full exposure, and when large enough to handle prick them out in pots of free soil, or in a bed of prepared soil in a frame. If planted thinly they may remain there until the latter end of August, when they should be placed in the positions which they are to occupy permanently. It will thus be seen that good, strong, healthy specimens will be secured by the commencement of winter, which, if they have been planted in congenial soil, cannot fail to make a brave display the following spring. If a frame cannot be devoted to them, prepare a nice bed of free soil in a cool situation, choosing, if possible, a position screened from the noonday sun, but where its morning and evening rays penetrate. Prick them out about 6 in. apart, and attend carefully to watering, sprinkling overhead at least twice a day in hot weather, as, unless the Polyanthus is kept cool and moist, it quickly falls a prey to red spider. Plants of choice kinds grown in pots of both Primroses and Polyanthuses should be repotted about the latter end of August, shaking away all the old soil, dividing the crowns, potting each one separately in a 4½-in. pot, or if larger specimens are desired three may be put into a 6-in. pot. A compost of two-thirds turfy loam to one-third leaf-mould and well-rotted manure suits them well. Water moderately for a time, and place in a cool situation until well established, when copious supplies of water must be given, and by the latter end of September the plants should be brought out into the full sun, there to remain until the latter end of October, when they should be placed either in a cool greenhouse or in a cold frame, giving air freely throughout the winter on all favourable opportunities. This treatment will result in the formation of well-developed, robust crowns, capable of producing vigorous stalks bearing blooms of surpassing quality, the grower having as a reward for his pains the pleasure of seeing a brave display of these beautiful spring flowers some time before they come into bloom in the open air. It has always been a matter of considerable surprise to me that the Primrose and Polyanthus should not be more generally grown for conservatory and room decoration.

They need no forcing, the protection which they receive being alone sufficient to bring them fully into bloom at a time when our gardens are comparatively bare of colour. Even those who have no glass accommodation whatever may manage to enliven their dwellings with them at an early period of the year. Grow them as above advised, and on the approach of winter plunge the pots quite to the rims in ashes in a sheltered situation, protecting the crowns in frosty weather with a little litter. About the middle of January clear away all the old foliage, and place them in a cool room, and they will come finely into bloom. For windows having a north aspect it is difficult to find flowering plants that will grow into beauty

in early spring. The Primrose and Polyanthus delight in a cool, sun-secluded situation, expanding their pretty cheerful blooms quite as freely as if placed in a lighter position, and lasting a long time in perfection. Two excellent varieties of the Polyanthus, either for bedding purposes or for pot culture, are Early Admirable and Golden Plover, the former being a rich crimson, the latter golden-yellow; the effect which they produce when massed is very fine indeed. Those, however, wishing to form a collection of named kinds must consult the catalogue of some firm making a speciality of this class of plant.

Pinks.—Another beautiful flower to which I would direct attention is the Pink. I feel quite sure that were it more generally known that so many charming varieties exist of this old-fashioned flower some of them would be found in every garden. The inclination which has of late years prevailed to fill our gardens with flowers of brilliant hue is probably the cause of their being so little grown. Let us, however, hope that a more refined taste will in future guide the operations of those interested in flower gardening, and that we shall see these pretty, free-flowering subjects, with their chaste, refined colours and delicate markings, fully reinstated in public favour. Unlike their near relations, the Picotee and Carnation, many of which are of delicate constitution, they are by no means fastidious with respect to soil or situation, a fact which renders them of great value to the owners of villa and suburban gardens generally, who often suffer under considerable disadvantages in this respect. In any case, however, the soil should be well worked before planting, and if of a heavy, retentive nature, it should be lightened by the admixture of some river sand or leaf-mould. Good, healthy plants procured now and planted carefully will get well established by the winter, and will flower freely next year.

J. Cornhill.

(To be continued.)

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 18.—Potting Tropæolum Jarratti, Charles X. Lilac, and Kalmia latifolia, also Lilium speciosum (lancifolium) album and rubrum in peat and sand, late Stocks for winter flowering, and Echeverias from borders; planting bulbs in flower beds, Brier Stocks for budding, and Box for edgings; removing Centaureas from flower garden and plunging them in a cold frame; taking up Dahlias, the tops of which are all killed; taking up Endive and putting it where it can be protected; shifting double Wallflowers into 6-in. pots; nailing Currants and Gooseberries on walls; putting Chrysanthemums into conservatory and all Strawberries in pots under cover; gathering all Scarlet Runners which are fit for use; taking up Carrots and Beetroot; thinning some of the inside shoots from Nut trees; hoeing among young Strawberry plants; cleaning Asparagus beds.

Oct. 19.—Sowing Nemophila and Saponaria in pots; planting Wellingtonias, standard Roses, Hollies, Wallflowers, Silenes, and Tulips, also planting Lettuces under the protection of a hedge; washing Orange trees; sweeping centres of walks to keep leaves from being trodden in the gravel.

Oct. 20.—Potting variegated Dactylis for flower beds; putting a few more Primulas into 8-in. pots; taking off Chrysanthemum layers; putting some Pears in a warm place to ripen; getting all Strawberry plants, Pinks, and Carnations stacked; taking up Lettuces and putting them under protectors in front of south wall; washing a Fig tree infested with scale with soft soap; top-dressing Peach house outside border with ½ in. of bones, short manure, and loam; trimming up conservatory creepers.

Oct. 21.—Potting Forget-me-nots for flowering in pots; planting Feverfew, also Aubrietias, Arabis, Alyssum, and Pansies in beds; examining the roots of Cherry trees, giving them some new soil; getting all Pelargoniums from frames, &c., into house; placing old roots of Salvia patens in boxes, and putting them under stage in back pit for cutting in spring; sending in Raspberries, also Marie Louise Pears, and gathering Josephine de Malines and Glou Morceau; top-dressing second Peach-house border with half-a-bag of bones, short manure, and loam; earthing-up July-sown Cabbage.

Oct. 22.—Potting layered Carnations, also Lily of the Valley for forcing; putting long straw over Laburnums in pots for forcing, and plunging Rhododendrons for the same purpose in straw; taking up Bath Cos Lettuces and putting them under protection; protecting Cauliflower heads by tying the leaves over them; beginning to nail Morello Cherries; putting straw round Violet frames; top-dressing early Vines with good loam, bones, sand, and horse-droppings; turning manure for Seakale forcing; gathering Easter Beurré Pears.

Oct. 23.—Planting Nemophila, Limnanthes, and Silene in flower-beds; manuring Roses; earthing-up Celery for the last time when the weather is dry; giving Calceolaria cuttings a little air, and only shading them for about an hour at noon.

Flower Garden.

At present by far the most interesting portion of the flower garden is the mixed, or what is generally termed the herbaceous borders; for, though many kinds of flowers are over and beginning to look weedy, others, such as Michaelmas Daisies, herbaceous Phloxes, Anemone japonica, and Stocks, are likely to keep up a succession till severe frost destroys them; meanwhile a little extra attention in the removal of weeds, decayed flowers, and fallen leaves will add to the fuller enjoyment of such flowers. As soon as the leaves are off the trees, and there is no further likelihood of litter on that account, the borders may be lightly forked over, and any plants the stock of which it is desired to increase may then be divided. Most kinds will bear division with impunity; at the same time it is well to remember that, as a rule, established plants flower most profusely; therefore, except for the purpose of increasing the stock, or preventing encroachments, such division is undesirable except at rare intervals. Plants on rockwork requiring re-arrangement or propagation by division may also now be carried out in their case. Sub-tropical plants that are intended to be preserved ought now to be housed. Those having no accommodation for wintering large plants of this character must depend for a supply solely on seedlings raised in January and February, and therefore the plants can be left in the beds till the frost has done its worst. Up to last winter Cannas wintered safely in the beds in which they grew with the protection of bracken, but all were then killed; they will therefore this season be lifted and wintered in a shed, from which frost can be excluded. Abutilons are worthy of being housed early, as if placed in an intermediate house they soon re-establish themselves, and are invaluable for the production of flowers at a season when they are scarcest. Draccenas and Palms are also valuable for indoor winter decoration, and these too should be taken up early.

Though we have not yet experienced any sharp frost, it will not be safe to risk out any longer tender bedding plants which are intended to be preserved. All the fine-foliaged Pelargoniums are most susceptible of injury, and if at all frost-bitten wintering them safely is a difficult matter. All other bedding plants which have been propagated for stock ought now to be housed, but they should have as much ventilation as it is possible to give them whenever the weather is favourable. Damp is their greatest enemy, and as the careless use of the water-pot tends to engender such damp quite as much as atmospheric conditions, this should be avoided. There is now such a wealth of plants suitable for filling beds in winter, that empty or bare beds ought not to be thought of; a list of some plants most suitable for this purpose was given in a former note. Our hope is that very shortly summer bedding will be so largely composed of hardy plants that but little supplementary planting will be required for the winter season. If this were the case the strongest objection that is with good reason advanced by the opponents of summer bedding, viz., its transitory character, would be done away with.

Auriculas.—Hardy Alpine Auriculas make very beautiful spring flowering plants in the open borders. They may now be planted in an open position, but they had better not be where the sun shines too much upon them. It would not do much harm at present, nor in early spring, but as the plants are intended to remain all through the summer months, it is at that season when the sun's rays have an injurious effect upon them. The soil should be good and well trenched, placing some well rotted manure from 6 in. to 1 ft. below the surface. In planting it is very desirable to place some good fresh maiden loam round the roots if it can be obtained; if not, the plants will succeed without it. Many complain that such plants as Auriculas disappear from the flower borders during summer; the heat and drought are blamed for this disappearance. No doubt Auriculas do not like to be exposed to a flood of sunshine during summer, but they will live and thrive through this rather than be suffocated by Verbenas or zonal Pelargoniums, which cause not only the death of these beautiful flowers, but of many others besides of similar character. Weakly-growing herbaceous plants used to thrive well in borders, and they do so now when they are protected from the devouring influences of bedding plants mixed amongst them in summer.

Carnations and Picotees.—Continue to pot off rooted layers of these as soon as they are ready, and if but few roots have been made the pots should be kept in a rather close frame, and be shaded from the sun until they are established. Those intending to purchase Carnations and Picotees should now do so; they move best at this season just as they are taken from the parent plants.

Hollyhocks.—Seedling plants should now be put out without delay, so that they may become established before the winter. Not only Hollyhocks, but also many other hardy plants, often suffer from inclement winters, owing to their not being established before frost sets in. Much depends, too, upon the state of the ground, the surface of which should be kept loose and dry by being frequently stirred up with the hoe. A close, hard surface sometimes causes an unhealthy growth through the sourness of the soil. These remarks apply to all classes of hardy florists' flowers put out in the open ground.

Pansies.—Hardy plants in pots increase almost too fast, but it is nearly impossible to resist the temptation of trying to grow a frameful under glass. Last season it was late before our plants were put out in the beds, and they did not do well; quite two-thirds of them were killed in winter by the frosts and wet combined. Had they been well established before winter probably not one would have been injured. We will grow one of each variety in pots, and probably the others will be placed in boxes and be kept under glass to be planted out in February or early in March as the weather may determine.

Glasshouses.

Eucharis.—Amongst large white flowers where a continuous supply is wanted, there are few, if any, that equal the Eucharis, especially the well-known E. amazonica. No matter how extensive the stock may be, it is necessary to vary the treatment with portions of it, so as to ensure a successional supply of bloom, otherwise it is quite possible that, even with a moderate-sized houseful of it the cultivator may find himself at times for a considerable period without so much as a single flower, whilst at other times there may be many more forthcoming than are needed. During winter the flowers are of most use, and if the portion of the stock that bloomed and made growth early in the season, and have been kept sufficiently dry with more air, so as to check further leaf production, are now put into a brisk heat, they will very soon begin to throw up flower-stems. By similarly treating another portion, so as to induce rest for the next two months, they will by the close of the year be in a condition for forcing, the flowers they produced keeping up a supply till spring is well advanced. It is only by treating this plant systematically that its blooms can be had at the time wanted. Independent of the value of its flowers for cutting, the purpose for which it is most generally grown, where blooming plants are required to occupy small vases and similar contrivances, there are few plants so effective as single bulbs of this Eucharis grown in 6-in. pots; the four or five healthy leaves from which spring a single stem of flowers with which a well-managed plant is furnished have an effect so employed such as few other subjects are capable of producing. The flowers will keep on the plants in a temperature of an ordinary living room for ten or welve days. and even when the weather is cold this Eucharis suffers less than most tender plants so treated.

Ardisias.—These, which are amongst the best of all berry-bearing plants, are, in many cases, late in getting the berries fully coloured this year, and in order to accelerate this they will require keeping in a little more warmth than would be necessary during ordinary seasons; but they must not be kept too hot, or frequently when submitted to a lower temperature the berries fall off prematurely. Plants raised from seed, or in spring from cuttings, must not be allowed to stay in the little pots which they occupy too long, as the best system of cultivation to follow with them is getting them up to a sufficient size without delay; for if they get into a stunted, slow-growing state they almost invariably lose their lower leaves, the effect of which is to make them so unsightly as to necessitate their being headed down. The tough, hard texture of their leaves is such as to guard them

much better against the attacks of insects than many plants, yet nevertheless if affected with aphides whilst the foliage is young its free development is stopped. Healthy leaves are requisite for the satisfactory appearance of all plants, even in the case of those that are grown for their flowers; but with these Ardisias, as with all other subjects cultivated for their foliage and berries, it is doubly essential that the leaves should be perfect.

Bouvardias.—The present treatment of these will require to be regulated by the time the flowers are required. So manageable are they, that little difficulty is experienced in getting them into bloom whenever wanted. As a matter of course, the strongest plants, such as grown from cut-back stools which bloomed last year, will be the furthest advanced in growth and in the best condition for blooming first; they will bear as much heat as most things, and, where the plants are really strong, will furnish through the winter greater quantities of flowers in succession when submitted to a brisk heat than where treated to an intermediate temperature. Plants like these, in common with others that make some growth through the winter, will be benefited by the application of manure water at short intervals; not only will it assist the development of the first flowers, but also those which come later upon the after growth. A portion of the stock of Poinsettias, Plumbagos, and Eranthemums will now need removal to the forcing pit where a structure of this description is at command, and where not available room must be made in a warm greenhouse, as a moderate heat is necessary to bring them in at the time required, as also to enable such plants as the Poinsettias to attain the full size which in many places is required. Although they will bloom with less heat than is usually present in a general stove, still they are never so fine under the cooler treatment. See that the whole stock of all these plants is perfectly free from insect pests of all kinds, for, with plants like these, that it is necessary to keep in warm quarters, insects, if present, increase apace; they also interfere with the flowering, and entail no end of labour to keep them down. In addition to the above, a portion of any others grown to flower during the winter should likewise be placed under the conditions of heat that will bring them on.

Fruit.

Fruit gathering will soon be at an end, and the fruit room will require careful management till all the fruit has undergone the "sweating" process, which invariably takes place during the first week or two after storing. Keep the ventilators open night and day (unless the weather is excessively wet), and as soon as the fruit seems dry, and has got thoroughly inured to the temperature of the room, then ventilate for about a couple of hours every fine day, and close up during wet, fog, and frost. The fruit should be stored as thinly as space will allow, both to insure its better keeping and to permit its being examined for the purpose of removing any that have begun to decay. Any specimens that it is desired to keep for exhibition or other special purposes should, when thoroughly dry, be wrapped up separately in tissue paper, and placed in drawers or boxes with the view of excluding atmospheric influences as much as possible. The weather is now most favourable for planting, root-pruning, and top-dressing.

IMPROVING CLAYEY SOILS.

I HAVE repeatedly seen paragraphs in GARDENING complaining of clay gardens and the difficulty of working them. The usual proposed remedy has been ashes and once-burnt earth, but there is a plan about Ludlow which is much used on the heavy clays, and which may throw a light on the subject. The farmers in a dry time, and on their fallows, usually pare and burn the headlands, putting the combined soil and weeds in small heaps, and when both are sufficiently dry setting them on fire, and letting them smoulder quietly until burnt out. The remnants of black clay soil are then spread over the ground with most fertilising effect. Some years ago I read of a plan to take the adhesive properties out of the clay permanently, and it was this: First drain the garden thoroughly to the depth of 3 ft. or 4 ft. If fall sufficient can be obtained, then on an elevated part place dry chips and small bits of wood in a long shape, like a Potato barrow, on the roof of a barn. Upon the wood place a layer of the garden clay, and upon that another layer of wood, and so on until the whole heap has reached a reasonable height. Then let the wood be ignited, but in such a manner that the mass should burn slowly, for a fierce heat would convert the clay into what is called about here clinkers, which would spoil all. When the whole has gently burnt out, the residuum will be black burnt clay, which will never become sticky or heavy again, but a nice soil with plenty of stamina to grow seeds, flowers, or trees. Not long ago I consulted a practical brick-maker about the feasibility of this plan, and he answered promptly that it would be quite easy to do, and moreover would answer. This plan can be tried on a small scale at first by any one afflicted with a strong clay garden, and the best plan to adopt would be to employ a regular brick-burner, so that there may be no mistake, and if successful, of which I have little or no doubt, will extricate many from a vexatious dilemma. F. NASH.

TREES AND SHRUBS.

Clothing Bare Places under Trees.—Grass will not grow well under a dense shade; even when frequently renewed the result is unsatisfactory. Yet, in conspicuous positions, the bare earth has an objectionable appearance, and the substitution of something of an evergreen character becomes a matter of importance. Whatever is chosen must either have a creeping habit, like that of Ivy, throwing out roots wherever the branches come into contact with the soil, thus always maintaining a clean, fresh appearance, or else like the Periwinkles, be able quickly to renew themselves from their base. Take, for instance, either the large or small Periwinkle; masses of either of these usually look worn and shabby towards the end of March, but trim off the discoloured growth and foliage, and in a short time they will be beautiful again; and if any light at all reach them, they will flower in the greatest profusion. There is scarcely anything so good as Periwinkles for covering shady banks where the soil is of an inferior description. Even Ivy takes some time to establish itself in bad soil, but the large Common Periwinkle (Vinca major) will grow in anything and almost anywhere. One of the creeping-rooted St. John's-worts (Hypericum calycinum) will also grow well in shady positions; once get it established, and cut it back occasionally, and it will give no further trouble; but all leaves that fall upon and are buried amongst its branches, or that are drifted by the wind, if not absolutely unsightly, should be allowed to remain for the purpose of affording nourishment. Euonymus radicans variegatus will likewise grow in shady places, and when planted somewhat thickly and pegged down it soon forms a close carpet. Lomaria spicant I have also seen do well in woods, where the shade of the foliage was heavy, and very pretty and interesting it looks growing in masses, and it will transplant with safety. Where a less formal growth is admissible the common male Fern (Lastrea Filix-mas), or the Shield Fern (Polystichum angulare), looks well in summer, but the former is not evergreen, and would not suit where a covering of that kind is desired. Several species of pretty close-growing Mosses are found naturally under the thick shade of trees; and where they thrive no better carpet need be sought, as they possess the advantage of always looking fresh and green. The Woodruff (Asperula odorata), when naturalised under the smaller kinds of Conifers, such as Arbor-vitæ, or any other close, low-growing evergreen, has a very good effect. But this, and, indeed, all other plants that may be used for the purpose of forming a close undergrowth, should be given a fair start. It often happens that the soil under large trees is thoroughly exhausted, and to plant in it without some addition would probably be useless; first break up the surface as far as can be done without injuring the roots of the trees, and then spread over it 3 in. or 4 in. of good soil; there would then be a chance of the plants used becoming established before the roots of the trees monopolised the fresh soil, and when well established they would be able to hold their own in the contest. Wherever Ivy is employed, and there is nothing that looks neater or is better adapted for making quick growth, either under the dense shade of the Cedar of Lebanon or the heavy drip of the Beech, it should be kept from climbing the trees if they are choice and valuable specimens; and where fresh soil is applied as a top-dressing in which to plant, it should be placed quite close to the trunk of the trees.—H.

Warning to Buyers of Evergreens, &c.—My attention was called lately to a man selling small evergreens, viz., Aucuba, Box, Arbutus, &c. I felt inclined to buy a few, but hesitated; my hesitancy saved my pocket. My neighbour bought three for 1s.—she was about to pot them for the window. I saw that she had not broken the ball of clay that was around the lower part. I called her attention to it, and said that I would pot them for her. I proceeded to do so. On removing the ball I found a quantity of half decayed Moss tied round the part where the roots should be. I removed the Moss, and to my surprise I found that the plants were merely cuttings inserted into the centre of a root of Plantain—quite a sell. The man had vanished.—JUSTICE.

The Golden-leaved Elder.—This is one of the best of coloured plants for enlivening shrubberies, but it is frequently condemned for its inconstancy in colour, particularly when it attains a considerable size. It is in this respect like many more self and parti-coloured plants, that it shows itself to the best advantage when in a young and vigorous state. It is, however, easily propagated, and when rooted grows so luxuriantly that, considering the purpose for which it is required, it need never be allowed to arrive at any great age or size. I find, moreover, that large plants of it can be kept up to the colour standard by winter-pruning the shoots to within a few inches of where they started from the preceding spring. I know a large plant that used to be grand in colour, but last winter it was left unpruned, and now, in consequence of such neglect, it is almost green.—G. S.

Trenching and Subsoil Manuring.—Heat and moisture being necessary conditions for production, we are greatly at fault in garden culture. If we are found complaining of the first, a cold sunless summer like that of 1879 tends to bring us to our senses, and ask ourselves, not why heat brings vegetable growth to a standstill, but why we do not turn it to profit when we have got it. "E. H." answers the question how—by deep cultivation and manuring to the full depth of the cultivation. How much poor shallow work is done! How fearful men are of the manure washing away through the soil! How little apprehension of the extent to which roots will descend. I see allotments dug with steel forks from which 4 in. of the tines have worn away, the subsoil never stirred, manure just covered over, fruit trees manured as if they were planted in boxes, and this on a dry, porous soil, when roots from an Apple tree have been found on the chalk 20 ft. from the surface. Such things are seen, and the lesson they teach is not learned, even by the man who finds those roots. When soil is enriched deeply, not only do roots find both moisture and food below when they cannot above, but the subsoil retains moisture in proportion to its enrichment. On the plot at Rothampstead, manured every year with farm-yard dung, the outflow of water from the drains is greatly diminished by the great power of retention conferred by that enrichment of the soil. For some crops subsoil manuring is absolutely necessary to make them worth growing. How common a thing is a poor crop of Parsnips, even on soil in good condition! My mode of proceeding is this: A trench is opened two spits wide, and shovelled out 1 ft. deep. The bottom of the trench is then rough dug as deep as a long-tined fork will dig it. Sewage is then poured in in quantity. Three or four poles are thus treated every autumn. I need hardly say that the plants give sufficient sign when they reach the subsoil. We lay bare the crowns, and pull them up with a leather strap and buckle. The effect of deep preparation for the Potato crop is not half realised; the difference of ten days' quick growth in hot, dry weather at the end of June, in place

of a ten days' stan still from drought, may mak all the difference with early kinds between a fai crop and a half-g- own one when the disease appears, and so by dishaulming to get not only a sound, but abundant yield. In this, as in many other ways, there is no time to be lost. We have not only "to make hay," but to grow vegetables "while the sun shines," and the hotter the better, so that we bring moisture as well, or take the roots to a moist food bed.—J. M. Taylor.

GLASSHOUSES AND FRAMES.

STEPHANOTIS FLORIBUNDA.

Although specimen plants of Stephanotis are not uncommon, yet it is much more generally grown wholly for the sake of its flowers in a cut state, their pearly whiteness and delightful fragrance rendering them favourites for nearly all kinds of indoor decoration. When its blossoms are required in quantity the best plan is to plant it out in brick compartments or narrow borders, and to train the shoots tolerably close to the glass, for unless a maximum amount of light and air be given it, it will not flower freely. The most floriferous plant of Stephanotis which I ever had was planted in a narrow border not more than 1½ ft. wide, in a compost of fibry turf, peat, and sand, resting on a quantity of brick rubbish, which acted as drainage. Here it had abundance of water, both at the root and overhead. It is very liable to be attacked by mealy bug, but copious deluges of tepid water will dislodge it. The shoots were trained horizontally on wires 8 in. apart and the same distance from the glass of a span-roofed pit, where they could receive abundance of heat, light, and air, but where they were at the same time carefully shaded from the direct rays of the sun while the foliage was in an immature condition during the early summer months, and while the principal flowering season lasted. During the autumn months they received all the light and air possible, with but an intermediate temperature, and during the winter months the temperature was seldom more than 50° at night, and sometimes even lower than that, but as sunheat increased with the lengthening days in early spring, and more fire-heat was applied for forcing purposes, the flower bunches appeared at the axil of every leaf, so that by the time they began to expand, each wire looked like a bridal wreath, densely furnished with waxy flowers of great substance. While in that condition it was copiously supplied with weak liquid manure to help the crop of bloom and to promote some early growth, that usually flowered well later in the summer. As this plant was confined to the portion of roof over the central pathway, it occupied space that could not well be otherwise utilised; but if trained thinly over an entire house or pit, the majority of plants, such as Ferns, that delight in partial shade, might be grown under it with advantage. Where a narrow border is not available, brick compartments would be preferable to planting it in a large body of soil, more especially where it happens to be associated with stronger-growing plants. Thus treated, the roots are more under command as regards the applying of moisture, and when any lack of vigour is observed the old soil can be carefully removed from the surface and replaced with fresh, well-enriched compost. Any pruning required should be done after the flowering is over; it should consist in cutting any old, bare pieces away in order to give light and air to the new growth; overcrowding, above all things, must be avoided. Plants grown on circular wire trellises frequently fail to flower freely, owing to the young wood being trained so thickly as to be unable to get ripened. In that case it should be trained up thinly on wires until thoroughly matured, and then be replaced on the trellis, when it will be almost certain to produce an abundant crop of flowers. J. G.

Luculias.—In the genus Luculia there are only two species, viz., L. Pinceana, which we now figure, and L. gratissima. L. Pinceana is at present as rare in cultivation as L. gratissima, is common, yet it is equally beautiful, and is even said in some respects to excel it. There is a remarkable similarity in both species, so far as regards general appearance; but L. Pinceana has broader and shorter leaves than the other, and differs from it materially in botanical characters. It was raised from seed received from Nepaul by the late Mr. Pince, of Exeter, in compliment to whom it was named; but although nearly forty years has elapsed since its introduction, it is rarely to be met with in gardens. There are some fine specimens of it in one of the greenhouses at Glasnevin. Its lovely pink blossoms, borne in large trusses, and the delicious and powerful perfume emitted by them, render it a plant to be desired by everybody for growing in a cool greenhouse. Both kinds like a good body of fresh open compost, in which its roots luxuriate, spreading in all directions; still, one occasionally meets with nice little specimens in tubs, but even these would be much better if planted out. A little weak manure water is very beneficial to these plants when making their growth, more especially when their roots are confined. If regularly syringed, and a genial temperature maintained, Luculias are rarely troubled with insect pests; while any little extra attention bestowed upon them is amply repaid when their flowers make their appearance. We have no other plant that rivals them for winter blooming in the conservatory. The plant is readily propagated by means of cuttings or layers inserted in a sandy compost in a genial bottom-heat, and when the young plants are fairly established, they develop themselves very rapidly. The plant does well in a large pot or tub, but if it is planted out in a good fresh

A Beautiful Winter-flowering Greenhouse Plant (Luculia Pinceana).

compost of fibrous peat and turfy loam, it develops itself far more rapidly and requires no further attention than occasional syringings and a good supply of water at its roots. The great clusters of sweet scented flowers of Luculias are generally produced in winter, and this makes the plant doubly valuable, as choice flowers are then generally scarce. The plant should be pruned in about the middle of March, and will soon start into growth, especially if assisted by gentle syringings on warm days. Every encouragement should be given to induce it to make its growth early and quickly, so that the young wood may get thoroughly well ripened in the autumn, as this conduces to large clusters and a far finer crop of flowers. A warm sunny position should be selected, and the compost should be placed on a well-drained bottom.

ROSES.

Dwarf Roses on Seedling Briers (Treatment of the Briers). — Briers which have been raised from seed this year (see Gardening, December 20, 1879) should be transplanted from the seed-beds or drills in which they were grown about the end of October. Transplant into rows 2 ft. apart, and 1 ft. between the plants in the rows. As seedling Briers are budded below the collar of the root, the plants must not be inserted so deeply in the ground as when growing in the seed-bed. After shortening the tap-root, plant them so that the collar of the root may be about 2 in. above the level of the ground. It is on this portion of the root that the buds are inserted in July and August. The operation of budding is rendered more easy by setting the collar of the root a little above ground (as described), but buds may be inserted below the collar on plants not so raised by removing the earth from about the root. One or two buds may then be inserted, and at the approach of winter, having made sure that the buds have taken, the ties may be removed and the earth filled in about the buds, to be again removed in spring when the frosts are over. Roses thus formed producing roots from about the callus of the bud may become Roses on their own roots.—Ombu.

Manuring Roses.—Roses require feeding. The more food the richer the colours, the larger the size, the more solid the texture, and, more marvellous still, the sweeter the fragrance. There is, however, a proper time for manuring Roses. Many give it too late in the season; they seem to imagine that when the strain is heaviest on Roses or other plants, that is the time to assist them with stimulants, and so it would be could the stimulants get at them, but it takes a long while for solid dressings applied at the root to reach Rose leaves or flowers. Even liquid manure, of which we are accustomed to speak and write as if it acted at once, takes days, weeks, and even in some cases months, to reach the points where it is most needed in our Rose trees; while as for solids, they have to undergo no one knows how many processes of comminution and chemical decomposition, and perhaps recomposition, before one particle of their strength can go to support the Rose either in its efforts at growing or flowering; hence the best time to manure Roses is, probably, November. Winds, rains, frosts, snows, sunshine and showers, heat and cold, all these prepare the manure for the plants and assist the roots to absorb it. The roots, too, are also abnormally active during winter; they never cease absorbing unless when frozen, and then during the winter and early spring the manure may be turned in or out, or tossed about in any way best suited for the Roses, without creating much or any annoyance to any one. Under such circumstances, Roses feed at their leisure all the winter, and are well furnished for their work before their flowering season in June. On the same principle, even manure-water should be applied early. March and April are much better months for saturating Rose beds with sewage and other manure water than May or June. Water is no doubt quickly absorbed, but it is exceedingly doubtful if the manure can be appropriated by the plants in anything like the same time; or whether, in fact, it does not really take a long time to convert any of the strength of the manure into Roses. Besides, it is of the utmost importance for the proper enjoyment of a Rose garden that it should be kept sweet and clean throughout the flowering months. What are called surface-mulchings might also generally be dispensed with. They are mostly composed of some loose, unsightly material of slow-conducting powers, to keep the moisture in and the heat out. But a loose surface of the soil itself would answer either purpose as well or better and prove at the same time neat and sweet. Roses are also often rendered disagreeable through the application of insect remedies of various sorts—such, for instance, as Tobacco-water, sulphur and Scotch snuff. All such dressings should be forbidden. Only three remedies against insect pests are at once effective, cleanly, or pleasant. These are the finger-and-thumb cure in the early days of the grub or aphides, heavy washing with clean water from a powerful garden-engine or doses of carbonate of ammonia, or smelling salts, applied with a sponge or a small squirt. This last destroys the insects, adds a new perfume to the Roses, and seems to invigorate the growth and enhance their beauty.—D. T. F.

Soil for Roses.—Opinions differ very much about the soil and situation for Roses, but some of the best Roses I ever saw were grown on a hill about half a mile from where I am writing. The hill is considered to be as high as the highest hill near Buxton, in Derbyshire, and fully exposed to all winds, and the soil is light and stony, being where stone quarries are worked.—J. M. G., *South Yorkshire.*

Prizes for Fruit.—At the Maidstone Chrysanthemum Show, to be held in the Corn Exchange, Maidstone, on Nov. 19 next, there is

prize of £5 5s. offered for the best eighteen plates of Apples (distinct kinds), open to all England. We also notice that a prize of £10 10s. is offered for thirty-six blooms of large-flowering Chrysanthemums, open to all comers. Schedules may be had of the Rev. C. Shepherd, Trottiscliffe Rectory, Maidstone.

House and Window Gardening.

GROWING HYACINTHS IN GLASSES.

As a rule it is not well to put Hyacinths in glasses too early. After growing Hyacinths in glasses for many years I have come to the conclusion that it is well to select the bulbs early, taking care to have them sound and not too large for the glasses, and then put them in a dry and cool place until the ring at the base of the bulb shows signs of swelling, owing to the inclination of the incipient rootlets to become active. As soon as this occurs the bulbs should be placed in contact with the water. Some sorts root much more freely than others; among the latter may be included the deepest coloured reds. Robert Steiger is a charming variety for a glass, but it does not always root well, and I have tried the effect of placing the bulbs for a time on some moistened Cocoa-fibre, and so induced them to start into growth before the bulbs are brought into contact with water. They should not be allowed to remain in the fibre after the roots have gained the length of from ¼ in. to ½ in., as they then begin to take an outward direction, and a little difficulty is experienced in getting them into the glasses, as they are very brittle at that stage of growth.

Now as to the glasses. Let us hope that the old, tall, upright chimney is now quite abandoned. It is ugly in shape, common in appearance, and top-heavy with the weight of the spike. The support for fixing the spike is a clumsy contrivance, and always unsatisfactory. When the late Mr. G. P. Tye, of Birmingham, introduced his registered Hyacinth glass many years ago this difficulty was obviated, for while it was well suited for the growth of Hyacinths in water, it was also an elegant chimney-piece ornament, and well suited for holding cut flowers in summer. Hyacinth glasses are now manufactured of various materials and in handsome designs, and having supports well suited for the purpose for which they are intended.

The tendency of the water in Hyacinth glasses to become putrid is a difficulty with many. I have found it of great value to place in each glass a few small pieces of charcoal, and this seems to keep the water sweet. The glasses are filled up sufficiently high with clear fresh rain-water, and the charcoal is dropped into it. Then the bulbs are placed in the glasses, allowing the water just to touch the base of the bulb. Rain-water should not be employed unless quite fresh and clear, or otherwise it soon emits an offensive smell, and causes the roots of the bulbs to decay. If there is no alternative but to employ hard water, it should be exposed to the influence of the sun for a day or two previously. The glasses can then be placed in a cool dark cupboard or closet, or in a dark cellar for a time, to induce them to root downwards before they begin to make an upward growth. I do not think this is so necessary as is generally supposed, but it is so constantly recommended that one can hardly be an exception to the rule. I have grown very fine Hyacinths in glasses without placing the glasses in the dark, but I always prepared the bulbs for the glasses as above recommended.

There are many failures with Hyacinths in glasses, but it is not the fault of the bulbs, but of the indifferent treatment they receive. Two causes operate to bring about a failure, viz., keeping the glasses in too warm a temperature, and refraining from giving the necessary supplies of water. Perhaps there is one advantage after all in placing the glasses in the dark for the space of six weeks or so, namely this, that during that time the bulbs, when least interesting, are subjected to a uniform temperature, and do not get unduly excited into growth. When the glasses are brought to the light they should be placed near the window, where plenty of light and air can be given them. After Christmas the growth will be rapid, and the prime requisites are to keep the plants growing sturdily, to take care they do not become drawn in the foliage, to have the water sweet and wholesome at the roots, and to keep the water in the glasses up to the base of the bulbs. As soon as the spike of flowers becomes tall enough, the support, which can be bought with the glass, should be placed in position, and as the spike lengthens the supporting hook should be raised to the necessary height.

Hyacinths in glasses are, as a rule, badly managed in the extreme, for it is not unusual to see a spike of flowers hanging down over the top of the glass from want of a support, and the glass but half-filled with water. It is a rare exception to see Hyacinths well grown in glasses in the windows of houses; and yet they can be grown there very finely indeed. R. D. H.

Plant for Wardian Case.—A worthy occupant for a Wardian case is Adiantum Capillus-veneris var. magnificum; it is one of the best Maiden-hairs in cultivation, and should have a case say 24 in. long; an hour's sun daily does it good; give plenty of air and water at the roots. I purchased a small plant in March last, and by treating it in the above manner it has grown into a fair specimen.—J. F. M., *Berners Street.*

The Tree Moss (Selaginella cæsia arborea).

The Tree Selaginella.—The accompanying illustration represents a plant belonging to the Club Mosses, or Lycopods as they are usually called. It is one of the best that can be grown on a pillar or wall in a moderately warm Fernery or greenhouse. It also succeeds well when grown in a pot or deep pan and trained on a wire or light wooden trellis. It grows rapidly in moist peaty soil, and supplies plenty of excellent material for mixing with cut flowers. For training up tall stems of Tree Ferns this Selaginella is a first-rate plant. It is easily propagated, every joint throwing out roots when kept moist or buried in soil. Its name is Selaginella cæsia arborea.

ANSWERS TO QUERIES.

3320.—**Roses for Clayey Soil.**—If the clay subsoil is near to the surface, it should be removed to the depth of 18. in. and filled in with some rotted turf and good manure, or these ingredients may be mixed with the clay together with some road scrapings and burnt ashes, the idea being to prevent an excess of moisture at the roots of the Roses, and to give them something to make roots in and feed on. On stiff, cold land the Brier will do better than the Manetti stock, so procure plants worked on the Brier for standards and dwarfs. The following sorts will be found to grow well, providing, of course, there is pure air, and the garden free from smoke, &c., viz.: Anna Alexieff, Dr. Andry, Duke of Edinburgh, General Jacqueminot, Gloire de Dijon, John Hopper, Jules Margottin, Madame Clemence Joigneaux, Madame Victor Verdier, Maréchal Vaillant, Sénateur Vaisse, Prince Camille de Rohan, Marquise de Castellane, Dupuy Jamain, and Sultan of Zanzibar. Others, of course, can be added as may be required.—WILLIAM WALTERS, *Burton-on-Trent.*

3261.—**Bulbs in China Bowl.**—The best soil would be one-third good loam, one-third leaf-mould, and one-third river sand. I would advise a better way of growing these bulbs in bowls than that usually practised. Take some strong wire and twist it together to form a net with holes the size of the bulbs; fasten it to the bowl, and then fill the latter nearly to the brim with water, placing a piece of charcoal in to purify it; then put the bulbs as you wish them arranged in the holes of the wire, so that their ends may touch the water; then cover with fresh Moss to hide the wire netting. Be sure to keep the bowl in shade the first fortnight, and change the water once a week. I myself have adopted this plan, and my Crocuses are already throwing out numerous small white roots.—BUTTERFLY.

2799.—**Keeping Rain-water Pure.**—In answer to "J. M.," I beg to state that in the mode adopted for preserving rain-water at Knockholt, no "overflow pipes in connection with house drains or sewers" are used, and therefore the evils suggested by him do not and cannot occur. Small plates of metal are fastened in the gutters, so that any leaves or other substances that may fall therein are prevented passing into the tanks. As to the quality of the water, I may state that about three years ago two samples filtered and not filtered were sent to an official analyst in London for his opinion, and his report was that both samples were absolutely pure. The water sent was taken from a tank which had been in use about five years. In having the tank underground the water in the hottest weather is delightfully cold.—S. L. C.

3270.—**Roses for Pot Culture.**—The following fifteen Roses are well suited to grow in pots, are highly scented, and may be closely pruned, viz., Alfred Colomb, Bessie Johnson, Charles Lefebvre, Duke of Edinburgh, Fisher Holmes, Jules Margottin, La France, Louis Van Houtte, Madame Victor Verdier, Marguerite de St. Amand, Marie Baumann, Pierre Notting, Princess Mary of Cambridge, Sénateur Vaisse, Xavier Olibo. These will be found a good variety in colour, and altogether desirable kinds for the purpose. Many more perhaps equally good might, of course, be added to this selection, but "Quidnunc" asks for a few. As regards the Roses with very diminutive leaves and flowers, no doubt they are the yellow and white little Banksian—

> A miniature of loveliness, all grace,
> Summed up and closed in little.

The white variety has a sweet perfume. If these are the small Roses referred to, they appear in the catalogue of Messrs. Cranston & Co., and may be obtained from that firm, or indeed from any of the leading Rose growers. The Banksians constitute a distinct class, and are good climbers when protected in winter.—WILLIAM WALTERS, *Burton-on-Trent*.

3327.—**Roses for Arches.**—Gloire de Dijon would be most suitable; in fact, it is a general favourite, being useful for almost any purpose. Madame Berard is similar in growth, but somewhat darker in the flower and foliage. For darker climbers take climbing Duke of Edinburgh, climbing Victor Verdier, climbing Charles Lefebvre, and, lastly, try Cheshunt Hybrid, which is a splendid grower, and the flowers, cherry-carmine in colour, altogether lovely and distinct. I can fully and confidently recommend this Rose for the purpose, and, with proper treatment, will be found a great acquisition. Give this Rose the warmest position of the four to be planted. Blairi is also a good and useful climbing Rose.—WILLIAM WALTERS, *Burton-on-Trent*.

3189.—**Digging up Parsnips on Strong Land.**—If your Parsnips have penetrated so deeply into the soil, it is really worth your consideration whether it would not be best to trench them out and thus trench the soil at the same time. We have never heard of any special implement for lifting Parsnips; and because the roots are usually growing so close together it would be difficult to design one that would be more effective than a stout steel fork. It is a matter well worthy the attention of tool manufacturers. Perhaps some form of implement having a couple of stout curved blades, long and pointed, might be made—these blades being forced into the ground on either side of the root, then drawn tight together by means of a screw, and then the root pulled from the ground by means of a stout lever.—A. D.

3209.—**Weeds on Gravel Walks.**—If refuse salt is properly applied in dry weather and in sufficient quantity it certainly kills weeds and moss on walks. Of course the effect is not permanent—nothing is; but I have always found an annual dressing, if the walks are well drained, sufficient. Sulphuric acid, one part to twenty of water, will also kill weeds, and when this can be obtained near the manufactory may be employed economically, but railway carriage adds much to the expense. Sulphate of copper (bluestone) is a good dressing for walks, as it does not destroy their colour in the way salt does, but it is expensive to purchase.—E. H.

3207.—**Overgrown Wall Fruit Trees.**—If I were in "E. H.'s" position I should transplant the trees from the wall to some open situation and convert them into pyramids or standards, and start again with young trees on the wall, and take care that the bottom of the wall was covered before much upward progress was permitted. If headed back to a point sufficiently low to insure the bottom of the wall being furnished, they will doubtless break, though cutting off a young tree's head is a drastic remedy.

2982.—**Bury Bugs.**—At p. 360 of GARDENING I notice two replies to a query with respect to the best cure for the bite of the Bury bug, *alias* Harvester. "E. G. H." says mercurial ointment rubbed into the places had the desired effect. No doubt; but what will be the effect of rubbing in this ointment upon his constitution in the long run? "Oxoniensis" is far more reasonable in his advice. Permit me to add mine. First, the remedy against being bitten: Soap the legs, feet, and hands with yellow soap; but this process I found very uncomfortable. In lieu, I used two parts of camphor liniment mixed with soap liniment and rubbed this over the feet, hands, and legs; but should there be a bite, there is nothing like Eau de Cologne for relief, and this should be applied also for the bites of midges, and for wasp bites chloroform. The idea is that the irritation caused by the harvester is occasioned by the bite of this little red spider. It is not so; it is caused by the germination of the eggs laid under the warm surface of the skin.—A SPORTSMAN.

3170.—**Colouring for Fruit Walls.**—The Peach cultivators of Montreuil and the Grape growers of Fontainebleau colour their walls white. Trees trained against white walls are found to be more healthy than those trained against walls more or less coloured. The following experiment is stated by M. Dubreuil to have been made in France. Two thermometers were chosen; one was placed facing a white wall, and at about 1 in. distant from its surface, the other was placed facing a black wall; in all other respects the conditions for the two thermometers were exactly similar. During daylight the thermometer in front of the white wall constantly recorded a mean temperature of 5° Fahr. higher than the thermometer in front of the black wall, and at night the difference of temperature between the two thermometers was imperceptible. Hence if we wish to obtain the maximum of light and heat the walls should be white. As to the movable frames covered with calico, would not light plank be simpler? The querist must remember that the height of his walls should depend on the forms he is going to give his trees. Upright or oblique cordons require a greater height than the palmette forms.—OMBU.

3102.—**Autumn-planted Potatoes.**—Last year was my first attempt to plant Potatoes in the autumn. Just for an experiment I planted about ½ bushel of Myatt's Prolific in the second week in October, in liberally manured well-dug ground. I planted the seed about 18 in. apart and 2 ft. from row to row, not forgetting to plant the seed 2 in. deeper than for spring planting, which is of great importance. This was my plan, and better Potatoes could not be wished for. They were free from disease and all a good size, whilst the spring-planted crop was a complete failure. I mean to plant the whole of my spare ground again this autumn to ensure a good sound crop of early Potatoes, and should advise "G. R." to adopt the same plan.—GARDENER.

3056.—**Plants under Trees.**—I find from experience that London Pride does well under trees. It grows very quickly, and always looks well.—A. J. S.

3192.—**Autumn Planted Potatoes.**—Last November I planted Ashleaf Kidneys without manure, sprinkled with soot only to keep off the worms. They came early and gave an excellent return. Garden Potatoes should not be manured; it only softens the tubers, and collects worms who bore them. Ground previously manured for Cabbages, Carrots, &c., is quite rich enough for Potatoes.—CAITHNESS.

3179.—**Removing Rose Trees, &c.**—Roses had better not be moved until the end of October, but Ferns and Lily of the Valley may be moved now without injury.—BUTTERFLY.

3201.—**Hardy Annuals.**—Sow Nemophila insignis (blue), also Nemophila alba (white), Saponaria calabrica (bright pink), Myosotis dissitiflora (blue). I should also recommend "Novice from the Cape" to try Snowdrops and Crocuses, Ixias, and other spring bulbs to be planted now.—BUTTERFLY.

3122.—**Hollow-stalked Celery.**—We have always found that hollow stalks in Celery is a peculiarity of strain and not of culture. Any good kind will not show that undesirable feature, but only coarse common sorts such as are quite unworthy of culture. One of the very best white kinds is the Incomparable Dwarf White, always very firm and solid, and Williams' Matchless is a solid taller kind. Of red Celeries the Leicester Red is a first-rate sort, very firm, solid, and crisp, and perhaps the finest of the coloured kinds is the Sulham Prize, in colour pink, and very firm and solid.—A.

3179.—**Removing Rose Trees, &c.**—Lilies of the Valley may be removed at once if desired; they should be lifted in good clumps, and be disturbed as little as possible. Rose trees should remain until the end of October before being transplanted. The wood is now maturing, and if the leaves have dropped the plants will be then in an excellent condition for removal. Ferns will also transplant better a few weeks later than now, but under any circumstances at this cool time of the year these can suffer but little if replanted now.—D.

3214.—**Window Plants.**—"Subscriber" does not say if he would like the plants to bloom in winter or spring. Presuming he means spring, I should recommend Tulips, Hyacinths, and Snowdrops, to be grown in sandy, rich soil, and covered to the depth of 1 in. with sifted coal-ashes to protect them from the frost. When in bloom, a layer of Moss at the top freshened daily with water would hide the ugly appearance of the coal-ashes and bare Tulip stalks.—BUTTERFLY.

3104.—**Mosquitos in Houses.**—Take some very dry cow manure from a pasture and let it smoulder. The smoke will soon drive away all winged insects, and will not hurt the eyes, and the smell is not at all disagreeable.—OLD SOLDIER.

3038.—**Striking Geraniums in Road Sand.**—In reply to "B. T." as to striking Geraniums in road sand, I have for years struck mine it it. I have this year struck about 5000 and only lost about fifty, of the kind known as Flower of the Day.—H. L.

3181.—**Brier Stocks.**—I can let "F. J. R." have any quantity.—H. HUTCHINS, *Hordle, Lymington, Hants.*

3184.—**Coping for Walls.**—The best is always the cheapest, and there is nothing so good as York stone. The cheap things give under the action of the weather, and the wall becomes damp and decays. Fruit trees never thrive well on a damp wall. Some of our walls here were coped with brick, but we have substituted stone.—E. H.

3108.—**Leafless Mulberry Trees.**—The unhappy condition of the Mulberry tree is doubtless due to the ungenial weather of the last two or three years. Fruit trees in many places have suffered from the same cause. A good season will put matters right, let us hope.

3334.—**Salvias in Windows.**—Will Salvia splendens flower in a window? or does it require heat?—S. G. [It will flower in the window of a warm room.]

3335.—**Pondweed in Bell-glass.**—I planted a Cape Pondweed in a large inverted bell-glass in the spring; all the leaves have come off. Would it be better to plant it in a small pot in the water?—S. G. [Yes.]

3336.—**Maiden-hair Ferns.**—*Vesuvius.*—The Fern sent is Adiantum cuneatum. It will succeed in a greenhouse temperature. Keep it rather dry during winter, and in spring cut off all the old and rusty fronds, and and when the young ones get a few inches high, pot the plants into larger pots if necessary.

3337.—**Hardy Plant Queries.**—Will three-year-old seedlings of Hyacinthus candicans blossom? [Probably.] Will Eryngium bromæfolium require protection during winter? [Yes, if in cold soil.] Will Anchusa capensis want protection during winter?—W. B. [No.]

3338.—**Paraffin or Petroleum.**—In this neighbourhood we get a little confused by the indiscriminate use of the above words. Paraffin is a solid, inodorous substance; it was formerly produced by distilling tar, but is now, I believe, found in peat. Petroleum is a mineral oil with an unpleasant odour, of which our supply originally came from the East, but latterly it has been found in such quantities in America, and is sold at such a cheap rate, that the bulk of our supply is from that continent, and is used all over this district for lighting purposes. We see paraffin recommended as an insecticide and as a heating medium, but we do not know how to use it.—S. W. K. [Paraffin is a semi-transparent white solid obtained from crude petroleum or paraffin oil. The latter substance is often popularly but erroneously called paraffin. Paraffin oil is a volatile inflammable liquid, obtained by distillation from Boghead coal, and much used for burning in lamps. As an insecticide it must be used with care, being poisonous to delicate plants. Petroleum answers all the purposes, and is cheaper.]

3339.—**Amaryllis.**—*J. W. M.*—See GARDENING for May last, in which is an illustrated article and full cultural details.

3340.—**Cuttings in Tins.**—I have three gross of empty Swiss milk tins, 3½ in. by 2½ in., and wish to utilise them. Would they do to winter cuttings in in a greenhouse if a hole was made in the bottom of each?—BOB. [We see no reason why they should not do.]

3341.—**Unfruitful Trees.**—I have a large garden, and a number of fruit trees on the wall, but for years there has been no fruit on them. What can be the cause of this? I do not think the trees are too old.—H. M. [Get the advice of some good gardener. We cannot advise you without seeing the trees.]

3342.—**Seedling Dahlias.**—*Seedling.*—You may sow Dahlia seed a good many times before you get any really good kinds. Your only way to get good Dahlias is to buy a few plants of the best kinds and propagate them every year.

3343.—**Potentillas.**—Do Potentillas require protection for the winter? I have some plants raised from seed this year that have not bloomed. Will they do so next year?—J. C. [They are perfectly hardy, and your plants will doubtless bloom next year.]

3344.—**Planting Japanese Honeysuckle.**—I have a Japanese Honeysuckle in a pot. It is two years old. Can it with safety be transplanted into the ground to grow against a wall having a north-west aspect? and if so, when is the best time to do it?—T. D. [Plant in spring. It will grow well in the position you name.]

3345.—**Clayey Soil.**—My garden is a very stiff and clayey piece of ground, and I have been advised to put

some lime on it this autumn. I intend, however, planting some Daffodils, Crocuses, and other bulbs, and wish to know whether the lime would be likely to injure them. I should also like to ask how the lime should be applied. —G. C. [Lime will be of little benefit in rendering your ground light and workable. If you can get a lot of old mortar and brick rubbish, road scrapings, or ashes, and well dig into the soil, you will do some good. The lime may, of course, be used in addition if desired.]

3346.—**Pollarding Evergreen Oaks.**—I have an evergreen Oak in good health, about 30 ft. high, circumference of trunk nearly 5 ft. at 3 ft. from the ground. As it has become too large for its position, it is desirable to cut off the branches about two-thirds of their length. Would it be safe to do this? and, if so, when is the best time?—Q. [Do it in January or February; it will be perfectly safe.]

3347.—**How to Ripen Tomatoes.**—Would it be advisable to gather several green Tomatoes that I have and place them in a south window to ripen?—B. J. C. [Yes.]

3348.—**Scale and Ants on Palms.**—*In Altum.*—The ants destroy the scale. Well brush the leaves and stems of the plants with a tooth-brush and warm soapy water; then syringe with clean tepid water. Repeat every few days till you have conquered the scale.

3349.—**Cutting down Ferns.**—*E. S.*—Do not cut them down till young fronds begin to show themselves in spring. They will not require water more than twice a week during winter unless if your greenhouse is only kept at 35° to 40°. Just keep the soil moist.

3350.—**Laurustines.**—About three weeks ago I purchased three Laurustines; they were not in pots when I got them, so I potted them into 8-in. pots, in a compost consisting of one-half turfy loam, one-fourth rotted manure, and one-fourth leaf-mould, with a good sprinkling of silver sand, potting moderately firm; the shrubs are about 1 ft. high, and about 9 in. through, of pyramidal form. During this last week the leaves of the centre main stem have turned yellow, and are beginning to fall, though they have not done flowering; it is the same on all three shrubs. Will some one kindly tell me the cause and remedy? Do they require much water?—A Learner. [The reason the plants have lost their leaves is probably because their roots were mutilated in lifting or remained out of the ground too long before potting. Water when the soil is dry, but they will not want much till the pots get filled with roots. Frequent sprinklings overhead will be of advantage.]

3351.—**Tubers on Potato Stems.**—*Ped.*—It is very common on strong-growing Potatoes, especially this season.

3352.—**Weedy Garden.**—*J. A.*—Your only course is to prevent the weeds getting established by hoeing in spring. Get a Dutch hoe, and use it vigorously two or three times a week all through the summer whether you see weeds or not, and your ground will then be less trouble to you. Burn the weeds you have cleared away, and apply the ashes to the garden.

3353.—**Grapes in Greenhouse.**—Having a small greenhouse, 20 ft. by 12 ft., for bedding-out plants, &c., could Grapes be grown in it to advantage? How many Vines ought to be planted? What would be the best and most profitable sort? How should the Vine border be made? and of what material?—Boo Peep. [Make a border 6ft. or 8 ft. wide by digging out the soil 2½ ft. or 3 ft. deep, putting in the bottom 6 in. of old bricks or clinkers; on this put some stable litter or turves (Grass side downwards), and fill up with good turfy loam from a pasture or the roadside, to which may be added a few barrowloads of horse manure, road scrapings, or inch bones. The border can be made half its width now and the other half in a year's time if more convenient. Plant any time between now and next March strong canes of Black Hamburgh Vines, which may be had from any good nursery. After planting read our calendar weekly.]

3354.—**Cutting Back Grape Vines.**—I have a Vinery in which there are a few bunches of Grapes quite hard and green. Will it hurt the Vine to cut away the branches that have done bearing fruit for the sun to get through? and will it improve the Grapes? I am going to erect a stage at the south end of the house to keep my Geraniums in through the winter. How soon may I cut away all the branches close to the Vine?—G. E. T. [Cut off the green Grapes and throw them away or make a tart of them. You may cut back to about half their length those shoots which have borne fruit, but they must not be cut in close to the old rod until every leaf has ripened and fallen.]

3355.—**Bulblets of Tulips.**—*H. P.*—Plant them out in a warm border of sandy well manured soil. Water them during spring and summer when dry, and keep them free from weeds. When they get to a flowering size plant them out where you wish them to bloom. Such bulbs are not fit for forcing.

3356.—**Clematis Jackmani.**—When is the right time to plant out this Clematis, and what is the most suitable soil?—R. M. T. [Plant now or in spring; soil, deep sandy loam.]

3357.—**New Zealand Palm.**—I have a New Zealand Palm which has grown to an unusual size for out-of doors in this country. It did not suffer from the frost or damp of last winter, and the leading shoot appears to be growing, but it has also lately thrown out three or four suckers from the stem towards the root and higher up. I am afraid whether these may not injure the tree, and shall feel obliged if you will inform me whether it will be right to remove the suckers, and how it should be done.—H. K. [Do not remove them till spring; in case the top should get killed in winter these suckers might be wanted. When you remove them tear them out by the hand if possible; if not, use a sharp knife.]

3358.—**Lawn Mowings and Vegetable Refuse as Manure.**—*W.*—They may soon be made into manure if they be laid in a large heap, so that they will ferment. If turned over occasionally and laid up in a heap again lightly, decomposition will be hastened.

3359.—**Chrysanthemum Etoile d'Or.**—*Emoorg.*—Now the plant has done flowering in the window box, pot it, and put it inside of the window or a greenhouse, and it will flower all winter. If there are any insects in the leaves dip the whole head of the plant into strong Tobacco water.

3360.—**Grapes Sporting.**—*J. Cooke.*—Send us one berry of the white and one of the black. We can hardly believe that a bunch of Black Hamburgh Grapes will sport several berries of Muscats on it.

3361.—**Planting Irises.**—When is the best time to plant Iris acuta and Iris hispanica? Also whether suited for outdoor or indoor planting?—Billy. [Plant now in a warm border of sandy soil.]

3362.—**Eschscholtzia californica.**—In a work on botany I see Eschscholtzia californica described as a perennial, is this correct? It is described as a hardy annual in seedsmen's catalogues.—J. H. [It is a true perennial; but as it may be sown and flowered in the same year and sows itself freely, it is used as an annual.]

3363.—**Moving Shrubs.**—I wish to alter the approach to my house in South Devon, and must move large Laurels, Laurustinus, &c. What is the best time to do so?—Swarg. [Now.]

3364.—**Tulips Out-of-doors.**—I have ordered for bedding for the spring three sorts of double Tulips, viz., La Candeur, Rex Rubrorum, and Yellow Roos. Now they come into bloom in succession at intervals of ten days. Can this be remedied by a corresponding variation of interval in planting?—South Devon. [We think not.]

3365.—**Wintering Plants.**—I have no greenhouse, but have good plants in pots of Coleus, Tree Carnations, Fuchsias, Roses, and Pelargoniums. These have been on stands in my garden, and in windows during summer. What is my best plan for preserving them during the winter?—N. M. [Throw the Coleuses away. Put the Fuchsias in any shed or cellar from which frost is excluded, and keep them dry. Plunge the Roses in ashes out-of-doors, and put the Pelargoniums in your windows.]

3366.—**Geraniums, Fuchsias, &c.**—I have struck several of these in pots. Should I pot them off singly? or let them remain until the spring? I have no greenhouse to keep them in. Is it too late to take cuttings of Verbenas and Petunias?—A. M. K. [Let them remain till spring. It is doubtful whether Verbenas and Petunias will strike now unless you can put them in heat. We would lift a few of the old plants and pot them.

3367.—**Salvias not Flowering.**—Why is it that my Salvias planted out-of-doors are all gone to leaf, very large leaves, and no flowers, whilst one blue one kept in the greenhouse in a pot run up very lanky and ugly, but flowered well?—Finetta. [Most of the Salvias flower in autumn and spring. The blue one flowers in summer. Lift the plants with good balls of earth and pot them, and place them in the greenhouse; they will then flower. They should have been kept pinched in during summer to render them bushy, and should have been potted in September.]

3368.—**White Passion-flower.**—A white Passion-flower, planted (in the ground) in the greenhouse, besides making an enormous growth, has thrown up a great many suckers. Will they make as good plants as seedlings would do?—Finetta. [Yes.]

3369.—**Worms in Soil.**—I have a quantity of soil in which there are a number of slugs, maggots, and worms. What is the most simple way of getting rid of these pests?—S. G. W. [Mix some lime and soot with it, and turn it over frequently.]

3370.—**Horseradish in Drain Pipes.**—At page 353, does your correspondent pack the drain tiles close together, ends up, or apart? How long before he gets a fine clean stem this way?—C. [Close together. They are filled with soil, of course, and the ground in which they stand is rich. It takes a year to get good clean heads.]

3371.—**Fuchsia Leaves Curling.**—*Tom W.*—Keep the plant dry and all the leaves will fall off. In spring prune back the shoots to firm wood and it will flower well next summer.

3372.—**Pears Cracking.**—*W. J. T.*—The best remedy is to cut the tree well in, and graft on it another kind of Pear.

3373.—**Potting Bulbs.**—*A Learner.*—Hyacinths, Crocus, Tulips, Narcissi, and Daffodils may all be potted at the same time, but they may not all flower at one time, which is a great advantage, as the display is kept up for a longer period.

3374.—**Cutting Hedges.**—I have a Privet hedge which has grown far too high and thick. When is the proper time to cut the wood well back?—V. [April or August.]

3375.—**Evergreens on Palings.**—What would be the quickest-growing and most suitable evergreen to plant as a screen against some iron palings about 4 ft. 6 in. in height?—F. E. [Any of the large-leaved Ivies.]

3376.—**Vallota purpurea.**—Is it essential that these bulbs should be only half buried? I have some in pots that have been potted a year, but have not flowered. Would it be better to repot them shallower, or to let them stay buried up to the crown?—Lily Grower. [If they are too deep remove a little of the surface soil with a pointed stick. Keep them rather dry through the winter and spring; if you can give them a warm light place they will probably flower freely.]

3377.—**Planting Clematis and Ivy.**—*A. J. B.*—If the weather is open you can move Clematis Jackmani and Ivy between present time and end of next March.

3378.—**Crocuses.**—I turned out some Crocuses the other day that had been left out-of-doors in pots since flowering, and found in the shell of the old bulb three or four small bulbs about the size of Peas. Will they flower next year?—A. J. B. [Plant them out in good soil and let them alone; they will probably flower next year.]

3379.—**Laying Down Grass.**—Is it too late this year to do this? [No; if the weather is open.]

3380.—**Vines in Greenhouse.**—I am going to have a greenhouse made, but the aspect must be N.E. Would Grapes ripen there without the assistance of heat? How would it suit flowers?—A. J. B. [Grapes would be a failure without heat in such an aspect. Ferns, Camellias, Azaleas, &c., would do in it, but not flowering plants in general.]

Names of Plants.—*R. C. S.*—Scabiosa atro-purpurea. ——*Sener.*—Chrysanthemum Burridgeanum.——*C.*—Anemone japonica.——*E. G.*—Cannot name without flowers.——*G. M. O.*—Briza maxima.——*F. W.*—Aster hyssopifolia.——*A. H.*—1, Chrysanthemum segetum: 2, Godetia Whitneyi; 3, Tagetes patula.——*J. B.*—Tradescantia (species).——*T. F.*—Convolvulus Soldanella. ——*Ped.*—1, Lophanthus rugosus; 2, Melissa officinalis; 3, Monarda fistulosa; 4, Antennaria margaritacea.——*S. S.*—Clematis tubulosa.——*Beta.*—1, Portugal Laurel (Cerasus lusitanicus; 2, Acacia of some kind; 3, Birch of some kind.

QUERIES.

3381.—**Flowering Shrubs and Rock Plants.**—I shall be obliged if any one will give me the names of some hardy flowering shrubs, such as American Currant or Guelder Rose; also the names of flowering plants and Mosses for rockwork—perennial and hardy.—Olive.

3382.—**Aristolochia.**—Can any one tell me how to treat this creeper? It has been tried in a west and east aspect and has made no start. The soil is sandy and light.—Bournemouth.

3383.—**Early Tomatoes.**—I am desirous of growing early Tomatoes. Will some grower of them tell me the earliest and best bearing varieties? also whether I should be able to produce the fruit in a heated Vinery by January or February? if so, how?—G. S.

3384.—**Indian Pinks.**—I have some seedlings of Indian Pinks now nicely rooted in small border running under brick wall facing south. Will they stand the winter there? Having never before grown them, will they do to plant around outer edge of a bed of Carnations, Picotees, and Pinks?—Henry K. N.

3385.—**Planting Vegetable Garden.**—I am now trenching back a piece of land to make a garden, and should be glad if any one could give me a few hints as to what vegetables, &c., should be planted in the autumn.—R. M. T.

3386.—**Flowers for Winter Blooming.**—Will some one advise me what seeds to sow for blooming in the greenhouse in the winter? also the treatment the plants will require?—A Subscriber.

3387.—**Plants for Window Box.**—I have a box outside my window which faces south-west in a smoky district near Bolton, in Lancashire; what can I put in now that will look pretty up to Christmas time? and would it be too late to put bulbs in then? I should also like a few suggestions as to what to put in it all the year round so as to keep it bright and pretty.—Monte-jumbo.

3388.—**Carpet Plants.**—Will some one please give me the names of good carpet bedding plants and colours for a bed with a basket, 4 ft. 6 in. square, in the centre, to be surrounded by eight distinct coloured rings for next summer?—A Learner.

3389.—**Crayfish and Gold Fish.**—I have some gold fish in a globe, and think some crayfish would look pretty with them. Can any one inform me if the crayfish would destroy the gold fish?—M. J. B.

3390.—**Bush Gooseberry and Currant Trees.**—I have 200 of the above in a garden I have lately taken, some of them in almost a wild state. How shall I treat them?—Quiver Dunstable.

3391.—**Preserving Rose Hips.**—How can I preserve these for winter decoration? I have tried putting them in strong pickle, but they have lost their colour. —H. M.

3392.—**Fuel for Greenhouse Fire.**—As winter is drawing nigh and it is about time to think of getting in fuel for the greenhouse fire, will some one inform me whether anthracite coal would not be better and more economical than gas coke, which costs 18s. a chaldron. We cannot get any coke cheaper than the price above quoted, and a large proportion of heating power must have been extracted in the process of gas making. My house is heated by an ordinary horizontal brick flue, reaching along two sides of the house in a horse-shoe shape.—Coal *v.* Coke.

3393.—**Virginia Creeper against Wire.**—Will one of your readers kindly tell me whether it be possible for Virginia Creeper or Ivy to prosper if planted against a wire partition? I planted a beautifully rooted Creeper against a wire partition not long ago, but it does not get on at all. I wish to have something green and fast growing. Is there a hardy plant to be got which will grow well trained to a wire trellis?—Jeearess.

3394.—**Gum Cistus from Seed.**—Will any one tell me how long Gum Cistus raised from seed take to make good plants? In buying one, how should I mention "the one with a purple spot on each petal," as I have been disappointed in having one with the petals all white?—Finetta.

3395.—**Scale on Orange Trees.**—How can I get rid of this? A week after an ordinary washing this pest seems as thick as ever.—W. H. Jones.

3396.—**Culture of Hollyhocks.**—Allow me to ask some successful grower of the Hollyhock for information as to the time and mode of propagating it by cuttings, its culture, and how to remedy the disease; and also, I should like the names of a collection that would give credit to the purchaser.—Walsal.

3397.—**The Polyanthus.**—May I ask the names of a few of the most choice varieties of Polyanthus, time of propagation, and what protection they require?—Walsal.

3398.—**Cardinal Flower.**—Will some reader who has been successful with Lobelia cardinalis tell me how it should be managed during the winter so as to get a fine bud of it in summer? I have a great many pots of plants raised from seed; they are rather tall plants.—P. M. F.

3399.—**Cerastium Edgings.**—I never can succeed in getting my edgings of this satisfactory; they are always rusty looking at the bottom. I should be much obliged for cultural instructions respecting its growth and management.—James Logan.

3400.—**Rose of Sharon under Trees.**—Will any one tell me if Rose of Sharon will grow under trees?—A. H.

3401.—**Gnat Bites.**—Will any one kindly tell me a cure for the painful bites of the gnats and midges which infest the garden?—Butterfly.

3402.—**Pruning Gloire de Bordeaux Rose.**—I have a Rose of this sort planted against a south wall for two years, but, as yet, it has not shown a flower; it has grown very strong, and has shoots about 7 ft. long. Will any one please say how it should be pruned?—Loch Lomond.

3403.—**Seaweeds as Ornaments.**—How can I preserve seaweed, of which I have just brought home a pleasing variety? should be glad to know how to use it for a permanent ornament.—S. M.

3404.—**Daisies on Lawn.**—I should be glad if any

of my fellow readers can inform me of a simple method of eradicating Daisies from a lawn.—H. R. Keates.

3405.—**Pruning Gloire de Dijon Rose.**—In a number of Gardening in August Gloire de Dijon is spoken of as requiring special pruning. Can the writer of the article say what it consists of? I can grow plenty of wood, but few flowers.—T. C.

3406.—**Climbers for Dwelling House.**—I have a large newly-built house two miles from the sea in the south-west of Scotland, the walls of which I am anxious to cover as soon as possible with hardy creepers. What will be the best sorts for the different aspects, and when should they be planted? What is the quickest growing Ivy? and are there any other evergreen creepers?—In Altum.

3407.—**Trees for Screens.**—I wish to plant a narrow belt of trees as a screen in a situation exposed to strong sea-breezes; what would be the best sorts, and time of planting? also the best sorts of ornamental trees and shrubs to plant in the pleasure grounds with same exposure.—In Altum.

3408.—**Flowers and Shrubs in Greenhouse Killed by Tar Varnish.** In consequence of the hot-water pipes in large hothouse having been painted over with tar varnish, a large number of Ferns and valuable plants have died off, and great mischief is still being produced. Are there any means of killing the tar varnish or painting it over with any kind of paint to destroy the fatal effect?—Hyacinth.

3409.—**Oleander not Flowering.**—My Oleander, some three or four years old, will not thrive or blossom. It is in good loamy soil, has just been repotted, and is in a cool greenhouse plentifully watered. The leaves, as soon as they appear, turn yellow, scales come on the backs of them, and the new shoots are curling up and withering. What can be the cause?—Orient.

3410.—**Fungus on a Lawn.**—My lawn is infested with a small black fungus that creeps close to the ground and destroys the Grass, besides being unsightly. A Spruce Fir tree grows near, some of the boughs overhanging the spot, and the soil is sandy. What can I do to remove the fungus?—Orient.

3411.—**Height of Geraniums.**—With a view to planning out my beds for next year, I should be obliged for the relative heights of the following Geraniums:—Lucius, Master Christine, Wonderful, and Madame Vaucher.—V.

3412.—**Poultry Manure.**—Is poultry manure available for using as a heap whereon to grow Vegetable Marrows? I should be very glad of any of your readers' experiences in the matter.—V.

3413.—**Briza maxima.**—This Grass has been introduced this year with very good effect in my window-boxes. Can any one suggest any other hardy annual Grass which can be so grown with advantage?—V.

3414.—**How to Grow an Orange Tree.**—Can any reader give me any information how to grow an Orange tree in a window? It is about 6 in. high, and in a 6-in. pot. What kind of soil is best?—A Learner.

HOME PETS.

Keeping Doves.—I became possessed of a pair of ringdoves three or four years ago, and, pitying the condition they were in, from confinement in a cage much too small, I constructed one for them in a rough way, from unplaned wood and wire netting, about 4 ft. long by 2 ft. wide, and 3 ft. 6 in. high, perches wide enough apart to allow the birds free use of their wings. The cage is on a stand about 30 in. high, and is made with a high gabled roof to the perches in which they retire to roost. Such a cage with wirework only in the front affords sufficient protection in any but the severest weather, when I sometimes put them into a smaller one to bring indoors for the night. As to food, finding Hemp and Canary seeds rather expensive, I determined to try Barley; this they would not take to till pretty severely pressed by hunger, but they will now keep in perfect health and thrive upon it. One day, by way of experiment, I put some Indian Corn into the cage. To my surprise they gorged themselves most voraciously with it, as if it had been the greatest delicacy that could be offered. I now keep them almost entirely upon it. A shallow vessel of water 8 in. or 9 in. wide for them to wash in every few days is a great treat, and the door of the cage should be made wide enough to admit this. I find a sprinkling of garden earth about ½ in. deep on the bottom and changed once a week, keeps the cage very clean and sweet.—A. C.

Disease in Pigeons.—Many of our our pigeons are suffering from a disease in their feet and skin by being covered with warts. I should be glad to know of a remedy.—S. G.

Canaries.—Will some kind reader answer the following questions about canaries: 1—Does bread injure canaries? 2—Will it do for a cock parent and this year's hen to breed together next spring? 3—Who is the publisher of a sixpenny book about canary breeding?—A Subscriber.

Canaries with Asthma.—I have tried the Canaradyne for birds with this complaint, but have not found it do any good. I had a pair of lizard canaries, both suffering terribly. I kept them in a warm room, but the hen died. At last by chance I saw in a paper that canaries were more subjected to pulmonary complaints than any other birds, and require to be kept in a bracing air. I therefore placed the survivor in a cool room, and now it is quite well. I only give canary seed, brown millet, and pure water, no green food. The bird fancier told me to keep them warm.—A Lover of Birds.

POULTRY.

ON FOWL KEEPING IN SMALL SPACES.

Any one keeping fowls without an extensive Grass run cannot expect to make the undertaking profitable. With care and judgment it may be made to cover expenses, but the probability is every egg will cost threepence rather than a penny. I am continually asked, "Do your fowls pay?" and I am compelled to answer, "If by paying you mean do I make money by them, certainly not." But I get a great deal of interest and amusement out of them, besides having fresh eggs.

Cleanliness, Size of House, &c.—The chief points necessary to success in fowl keeping are perfect cleanliness, suitable food and warmth, and judicious selection and management of stock; and I place cleanliness first, because, unfortunately, it is the thing most often neglected, and fowl-keeping then becomes a nuisance to neighbours, and the birds will not thrive. Some people think any sort of covered shed will do for a fowl house, no matter how small, draughty, or ill-ventilated it is. Of course, the first consideration is that the roof should be perfectly water-tight, and the walls free from chinks that would let in draughts. To ensure ventilation, one or two holes should be cut in the wall close under the roof, and the opening covered with finely perforated zinc. As to dimensions, Mr. Wright, who is the great authority on poultry, says, "For a cock and five hens a house 5 ft. or 6 ft. square is sufficient." I should prefer at least twice that size myself for the same number of birds. The sleeping-house must be swept out every morning without fail. It is only the work of a few minutes if so done; whereas, if left till there is an accumulation of filth, it is a task that no one likes to undertake, besides being a fruitful source of fleas and other vermin in the birds. The floor of the sleeping-house should be of asphalte or cement, brick or boards, must be by all means avoided. After sweeping, a little dry earth should be thrown down under the roosting perch. Sand is nicer and cleaner looking, but is too expensive for general use; the earth answers every purpose, and prevents all disagreeable smells.

Fowls' Manure.—One caution must be given about the fowls' manure. It will not do to use for plants without great care. It is, in fact, the strongest guano, and unless exposed to the air for months, and then much diluted, it would kill whatever was treated with it.

Protection from Vermin and Disease.—Once every six months the walls of the house and inside of the nests should be lime-whited, and if there is the least suspicion of vermin in the birds, before lime-whiting go carefully over the house with paraffin or carbolic acid, applying it with a small brush wherever there is a crack or harbour for the insects.

Fowls' Runs.—The run, which should be as extensive as it is possible to allow, should have a south or south-east aspect, and it is essential that some portion of it should be covered over to afford shelter to the birds in wet weather. If possible have a light, movable division or door that will divide the run into two parts. A frame of wood covered with zinc wire netting, or even string netting, will answer very well. It is often necessary to separate some fowls from the others in case of sickness or or quarrelling, and fowls get very tired of being shut up in one place, and even such a slight change as shifting them from one part of the run to another is beneficial. The floor of the run must be thoroughly drained. It should be dug out to the depth of 1 ft., and have a layer of old brick rubbish and old mortar; then fill up with earth and sand, and beat as hard as possible. This should be swept down once a week at least, oftener in hot weather; and after sweeping cover with dry road sand.

Dust Bath.—Under the covered part place the fowls' dust bath. The simplest way is merely to throw a heap of dry earth or sand in a corner, renewing it frequently. Dry sifted ash from a greenhouse furnace answers very well in the absence of sand, but if allowed to get wet and trodden into the run it smells very unpleasant.

Poultry as a Profitable Investment.—Being greatly interested in all that concerns poultry keeping, I give your readers my experience of it. I keep Toulouse geese, Rouen ducks, dark Brahma fowls, and several kinds of pigeons. I have had geese at eight weeks old weighing 12 lb. each at a cost of 2d. per week, ducklings I get ready to kill in twelve weeks at a cost of 1½d. per week, and Brahma chicks eighteen weeks at 1d. per week. Pigeons are unprofitable with me, excepting fancy birds, as every pair costs me 1s. 8d. before they are ready for market. Brahmas as layers with me are excellent. I have had them lay twenty-eight days without missing a single day. I have heard and read a good deal about poultry farming, more against than in favour of it. My opinion, after ten years' experience of poultry keeping, is most certainly in favour of it. I have myself reared 200 ducks in a season, beside chickens and geese, enclosed in a piece of ground about half a rood, and had them taken from my yard as soon as they were ready to kill at 3s. each. I have not reckoned the cost of keep of stock birds in ducks and geese during the year, as mine have generally won as many prizes as have paid for their keep.—North Yorkshire.

AQUARIA.

Fish Dying in Tank.—I have a small brick tank made in a rockery in a conservatory, and lined with Portland cement. There is a small fountain in it which I often keep playing. The rockery, on which many greenhouse Ferns are flourishing, faces south and east, the later morning rays being sheltered by the west wall of the house, and during summer the glass has been shaded nicely by green colour and size. The sun does not shine brightly on the water, but it gets light, though the rockery slightly overhangs it. I had in it five gold fish, two golden tench, twelve minnows, a few mussels, and water snails, but all the fish have died since except two gold fish. There is nothing wrong with the cement, for it was well scalded and cleaned several times before the fish were put in. The bottom has about 2 in. of sea beach, well washed, laid over it, and I have three times got water weeds and planted them, but all have died. I had the tank finished in February or March, but my fish died, and also the weeds. The fish generally got white fungus over their bodies, and some lost their tails. Can any one advise me?—R. A. P.

Plants for Aquarium.—"Stickleback" wants to know if zinc proves injurious to water plants. By this I presume his tank is made of that metal. My own aquarium, as described in a previous number, is made entirely of zinc, and my water plants have grown most luxuriantly, their roots having been buried in a small quantity of river mud, which was placed in one corner and covered with a few shells and stones. If "Stickleback" requires plants for an 8-in. aquarium that will grow very little above the water, let him try the Water Soldier (Stratiotes aloides), which grows to perfection in an aquarium, as it delights in still water. This is, indeed, a very beautiful aquatic plant, as its leaves droop over and form a shelter for the fish. Also try the Frogbit and young roots of Potamogeton natans, a plant which is common enough in our ponds. It is known by its broad, green-pointed leaves floating on the surface of the water, and would be taken for a small kind of Water Lily, but for the difference in blossom.—Newt.

Cement for Aquarium.—Mix white and red lead together with stiff gold size to the consistency of putty; a little lampblack will darken it if desired. This cement sets quickly, and becomes as hard as iron in a few days; and is useful for many purposes.—J. C. Kershaw, *Chester*.

Gold Fish.—In reply to "Una," my advice is to try a fountain that could be kept going all day, if not at night. My fish were exactly the same as his at one time, but on introducing a fountain the difference seemed to be almost momentary, and they are never at the water's surface now, unless, however, my fountain should cease for a few days. "Una" might find it difficult to erect one in a glass globe that would require little or no attention, but even that can be accomplished. Roberts' food for fish can be obtained of Mr. G. J. Roberts, 132, Pentonville Road. Fish are desperately fond of it, but it should not be given more than three times a week.—Newt.

Management of Indoor Aquarium.—Will any correspondent give me a few hints on the management of an indoor aquarium? What is the proper food for the fishes? What does it indicate when the fish come to the top of the water and seem to pant? How often the water should be changed? Whether the green accumulation on the stones at the bottom should be removed, &c.?—A. B. C.

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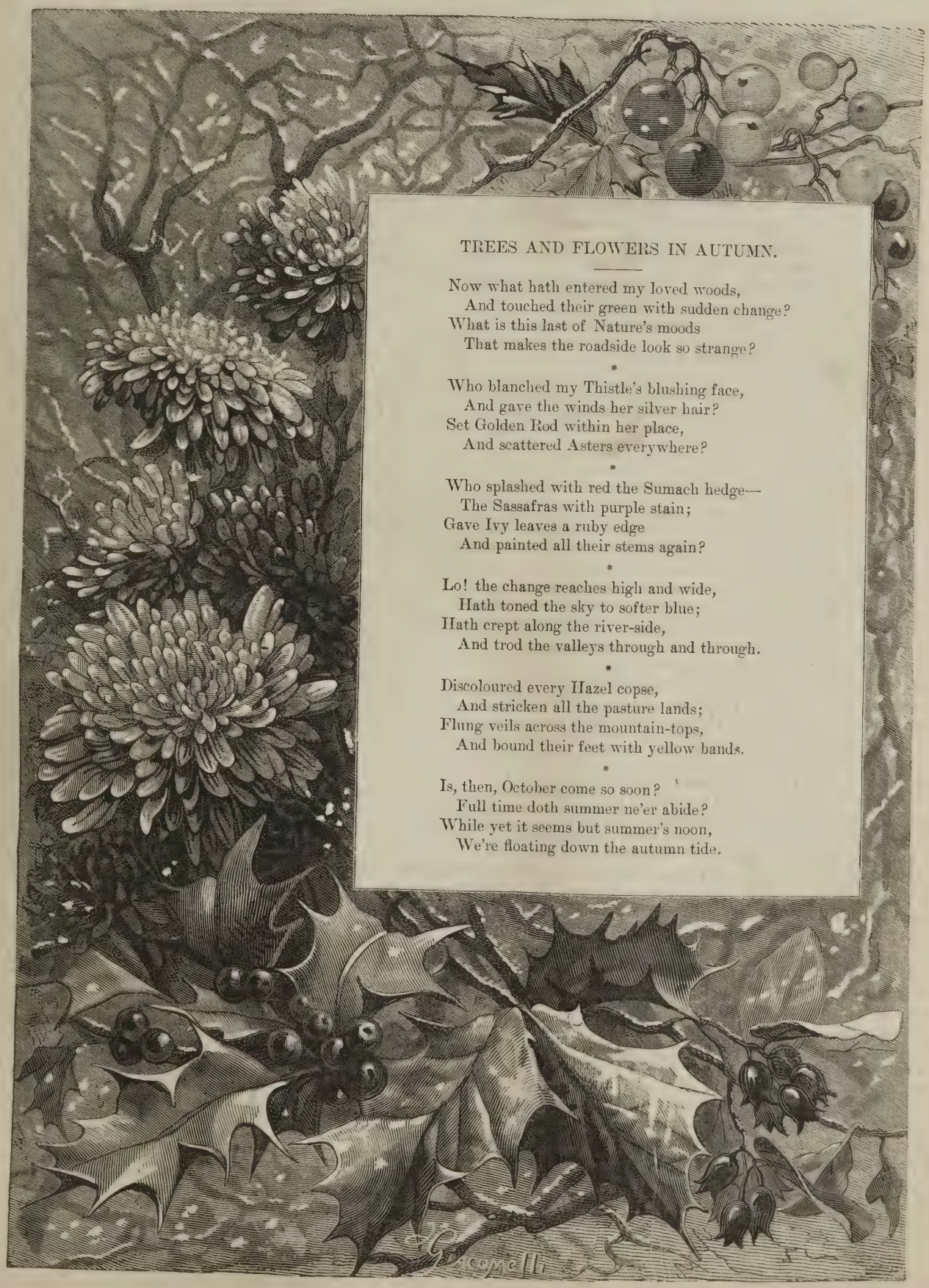

TREES AND FLOWERS IN AUTUMN.

Now what hath entered my loved woods,
And touched their green with sudden change?
What is this last of Nature's moods
That makes the roadside look so strange?

*

Who blanched my Thistle's blushing face,
And gave the winds her silver hair?
Set Golden Rod within her place,
And scattered Asters everywhere?

*

Who splashed with red the Sumach hedge—
The Sassafras with purple stain;
Gave Ivy leaves a ruby edge
And painted all their stems again?

*

Lo! the change reaches high and wide,
Hath toned the sky to softer blue;
Hath crept along the river-side,
And trod the valleys through and through.

*

Discoloured every Hazel copse,
And stricken all the pasture lands;
Flung veils across the mountain-tops,
And bound their feet with yellow bands.

*

Is, then, October come so soon?
Full time doth summer ne'er abide?
While yet it seems but summer's noon,
We're floating down the autumn tide.

AUTUMNAL FLOWERS AND LEAVES.

TREES AND SHRUBS IN AUTUMN.

This has been an exceptional season for displaying the glorious tints of autumn leaves, and where trees were planted with a view to autumnal effect the reward this year will be ample. The following notes by Mr. Berry, of Longleat, will, we hope, be instructive as a guide to anticipating planters.

The Norway Maple (Acer platanoides) was the first to colour, and quite out-shone all its compeers with brilliant and gorgeous-tinted leaves; the colours varied from yellow to glowing fiery-red. The contrast and effect, particularly in the noble and spacious avenue leading from the chief lodge to the mansion, which is planted in double rows alternately with Lime, Elm, and Norway Maple, was a grand sight to behold; the latter at their best stage of colouring seemed to be so many shining lights amongst their more sober-coloured neighbours. The park was literally lit up with them; each tree, so to speak, was like a tree on fire. Of other Maples that coloured before the fall of the leaf, the most noteworthy were Acer colchicum rubrum and Acer Schwedleeri, both dying off pure yellow; the young leaves on the latter during summer are claret coloured and highly ornamental. Last year being wet, the Tulip tree did not appear in its usual deep yellow-shining suit, but this year it is brilliant. The Liquidambar is amongst the richest of autumnal-tinted trees; it is usually beautifully coloured before dropping its leaves, often varying from purple to vermilion and other fiery colours. I am pleased to be able to note that the comparatively new purple Birch may be classed amongst and in the first rank of gay autumn-coloured trees. A fine specimen growing here is just now clad in foliage varying from bright chestnut to vermilion. This Birch is a very free and fast grower; indeed, my experience of it is that it seems to over-grow its strength. The stem and branches become so long and slender that it can rarely withstand rough winds without suffering breakages. I intend in future, when planting this particular tree, to be sparing with rich soil, so as to check its over-luxuriant growth. It is a grand acquisition as a landscape tree, and can hardly be too extensively grown. Whilst speaking of Birches, allow me to draw the attention of ornamental planters and nurserymen to the upright Birch (Betula fastigiata); it deserves to be better known than it now is, for I think it is destined to become a most effective and useful tree, especially adapted for town and suburban parks and gardens, as well as for general landscape planting. It is not so stiff in outline as the Lombardy Poplar, being more light and airy in habit, with a strictly fastigiate growth. I believe it is of Continental origin, and, as yet, only sparsely distributed in this country. The specimens I have of it were imported from France some few years back; they are now about 12 ft. high, and I must say that I am much impressed with their distinct and characteristic appearance.

The stately old Elms in the park are just now fine pictures in burnished golden clothing. The Beech has nearly thrown off its annual russet-brown mantle, and the deciduous Cypress (Taxodium distichum), a shade deeper and brighter than the Beech, stands out very prominently, and is still a mass of bright warm brown-umber coloured foliage; this tree forms a striking and pleasing contrast to all other Conifers on account of its feathery and elegant foliage. There is a weeping variety of it, but it is inferior to the type in every feature. The Wild Cherry (Cerasus vulgaris) must not be omitted from the list of bright, fiery-tinted trees in autumn, some specimens of it here being very conspicuous and beautiful in the landscape; it is a grand pictorial tree for parks and pleasure grounds; yet how scarce it is, generally, in parks, and how seldom planted in situations which are so well suited for such a charming tree to occupy prominent sites for displaying its sheet of white blossoms in spring and brilliant autumn foliage to advantage. Amalanchier floribunda and ovalis, as usual, coloured scarlet and crimson; and Aronia grandifolia was also richly tinted. Some of the American Thorns were coloured with various gay tints, as is usually the case in ordinary seasons.

I will now offer a few remarks on autumn-tinted shrubs, amongst which the old-fashioned Sumach (Rhus typhina) carries off the palm for intense colours with its graceful and brilliant scarlet foliage. Rhus Osbecki is not much inferior, the colours being more varied. Rhus Cotinus is not deficient as regards its violet and red tints. Euonymus europæus shed its foliage in bright magenta colours, and laden with seed, the cases or capsules of which are hardly less attractive than the rich autumn leaves. The great advantage of this shrub over all others is that after the birds have carried off the seed the pretty seed-cases still hang gracefully on the bushes, and will remain ornamental and attractive during the greater part of the winter months. This peculiarity renders Euonymus europæus invaluable as an ornamental winter shrub. Euonymus latifolius was slightly coloured; its leaves and seed-cases are much larger than in the common variety, but the latter very soon become discoloured and drop off; it is inferior in every way to the common variety. The common Dog-wood (Cornus sanguinea) is worthy of notice as a well coloured shrub; it dies off a deep blood-red colour. Its glossy red bark, too, which is best seen to advantage after the leaves have fallen, is an attractive feature of this shrub. Clethra alnifolia is a late-blooming shrub that sheds its leaves golden-yellow. Virgilia lutea dies a deep yellow. Viburnum Opulus (the Guelder Rose) was beautifully tinted; so was V. plicatum. The Viburnum family are all good ornamental shrubs, and valuable for contrast and effect in pleasure grounds. The old variety, V. sterilis, snowball-flowered, is always a pleasing object, especially so when backed up by dark evergreens, its snowy-white, snowball-like flowers showing up prominently. V. macrocephalum is a variety with immense flower-heads. The glossy leaves of Ribes aureum exhibit a variety of lovely tints. Cotoneaster Simmondsi is just beginning to show up its bright red colours; when well coloured and laden with yellow fruit it forms a striking object in the ornamental woods here. The birds do not molest the seed until pressed by hunger during hard weather, which is a great recommendation amongst berry-bearing shrubs. The same remarks apply to C. acuminata and C. frigida; the fruit on them also may often be seen still hanging after most other fruit-bearing shrubs have been cleared by birds; indeed, save these berry-bearing shrubs just mentioned, there are now hardly any worth growing for the beauty of the fruit alone. Since the Gun License Act came into force small birds have become so numerous that as soon as the fruit is ripe it is swept off in a few days. Ten years ago I could cut any quantity of branches of the Mountain Ash covered with its beautiful fruit at Easter-tide for church decoration purposes, but now not a berry can be found a fortnight after being ripe. The Cotoneasters named are the only exceptions that have come under my notice. Lastly, the common Azalea must not be forgotten as a choice autumn-tinted shrub. It has been, and still is, throughout the ornamental woods everywhere conspicuous, displaying its bright-tinted foliage of almost every hue from yellow to purple and red.

Making Lawns.—In reply to several queries in Gardening on this subject, if there is sufficient depth of soil, trench, burying the surface soil with the weeds to the depth of 18 in. any time during winter or early spring when the ground is sufficiently dry to work pleasantly. The advantages of trenching are, that existing weeds are got rid of, and the fresh soil, besides being free from weeds, is more likely to send up a vigorous plant. The soil should be kept as light as possible after trenching, to allow air and water to pass freely through it, which will sweeten and assist in pulverising it. During the trenching the level should be kept as accurately as possible, and if a very exact level is required, it should be done shortly before seed time with the spirit-level, straight-edge, and pegs; but we generally find that a skilful man can do this with his eye. The ground should then be let lie until owing time, which will be about March or April, according to the weather, remembering that dry weather should be chosen for the operation. It should then be forked lightly over and raked until a fine tilth is produced, which is most necessary for Grass seeds. Now tread the ground or roll it until it feels comfortably solid under the foot, which is a very necessary part of the preparations. Scratch the ground with a rake until a little fine soil is produced wherein to sow the seed. If artificial manure is necessary it should be sown after the consolidating of the seed bed at the rate of 5 cwt. of lawn manure to the imperial acre (4840 square yards) raked into the surface-soil, and the seed sown immediately after. A calm day is very necessary for sowing, the seed being easily blown about by a slight puff of wind. Two garden lines should be stretched about 4 ft. or 5 ft. apart to sow between, and the ground should be sown at least twice, which will materially assist the even distribution of the seed. When a breadth has been sown it should be lightly raked and covered to the depth of 1 in. or 2 in. with a mixture of well-decomposed stable manure and leaf-mould in the proportion of about one to two, which should be nicely levelled and not walked upon until the Grass is all well through, when it should be lightly rolled. The ordinary quantity of seed is 4 bushels, but where a lawn is required in the space of two or three months double the quantity is requisite. Although April has been mentioned as the time to sow, it is perfectly safe to sow Grass seeds any time up to the end of September, providing the weather is sufficiently damp. The after management consists in mowing with a scythe as soon as the Grass is high enough, and this should be continued as required, using the scythe for the first three or four cuttings, and after each cutting, rolling well with a light roller. The machine may then be used if desired, but set it as high as possible for the first half-dozen cuttings. Mowing, watering, rolling, and an occasional edging are all that will be required for

some time. When the lawn is well put down it gives greater satisfaction in every way, being easier to attend to, fresher in appearance, pleasanter to walk upon, and lasts longer in good condition than one that is put down in a slovenly manner, with the view to getting through the work as quickly and cheaply as possible.—J. Carter.

TOWN GARDENING.

HINDRANCES TO PLANT GROWTH.

Gardening in towns differs from gardening in the country, inasmuch as, besides the usual labour of raising your plants and keeping them in health, there are three great enemies to plant growth which have to be combated with which the country gardener is but little troubled.

1. **Impure and Poisonous Air.**—This is the greatest enemy by far that our plants have to contend with, as it is more subtle and difficult to deal with than the others. It must be borne in mind that this impurity is divided into two classes—first, actual mechanical impurity, consisting of the soot, smoke, dust, and dirt with which in various forms the air of our cities is loaded. This is much more easily dealt with than the second kind, for by covering, as far as possible, our plants with glass, and thereby preventing the continual deposit upon their leaves, &c., of these injurious particles which would otherwise take place, and which choke up the pores and so suffocates, and in time kills the poor plants; also by constant washing, syringing, &c., the plants and their leaves, especially when the former precaution cannot be taken (and even when it can, as an additional advantage), we can to a great extent moderate this evil. But the second kind of impurity, the chemical, is much more difficult to deal with. The only condition under which this evil may be at all successfully dealt with is in the artificial atmosphere of a conservatory or greenhouse, and the larger the internal area and contents of such a structure, and the greater the extent of healthy vegetable growth and foliage contained within it, also the more perfectly, consistent with the health of its inmates, the external atmosphere can be excluded, the greater will be the consequent advantage. We have found some benefit from the use of Condy's Disinfecting Fluid in the town greenhouse.

2. **Absence of Light.**—Another great drawback to the culture of plants in towns is the gloom, comparative absence of sunshine, and general want of that clear wholesome light which is necessary to the healthy growth of all kinds of plants, and which prevails to so great an extent in large cities, especially in the winter season. This applies also to the last-mentioned evil, viz., the impurity of the air, which is much greater in the winter than the summer season, from the greater number of fires employed for household purposes, &c.; so that on these two accounts common sense tells us that summer is the season for the town gardener, and in practice this is found to be so; his efforts to obtain a winter or even early spring display will meet with but a poor reward, as a rule. All that we can do is to keep all glass, &c., as clean as possible, especially during the dark days, and to take care that our plants get every ray of light that can be had. One great hindrance is that town gardens are often more or less surrounded by high buildings, and in such a case every precaution will fail to prevent the plants being drawn up, and to some extent weak and lanky in appearance. Hence it is advisable, wherever it is possible to do so, to have our conservatory or greenhouse constructed upon the roof of the house, or on as elevated a position as can be had; even outdoor borders may be arranged advantageously on such a space, for plants like a wide uninterrupted view, and light and air all round them, and this is sometimes the only position where they can obtain it.

3. **Unwholesome Soil.**—The sour, soot-permeated, unwholesome, and often altogether worthless soil that is usually found in town gardens is another drawback to the successful culture of plants, but is by far the least formidable obstacle to our success, for though we cannot bring pure air or light from more favoured localities for our pets, yet we can bring them pure wholesome soil; and our friend common sense tells us that in order to counteract as far as possible other unfavourable conditions, we must give our plants the very best of soil and other necessaries that we can. This will be fully treated on hereafter in a chapter on soil.

Cleanliness.—One point must be steadfastly adhered to, viz., cleanliness, no dirt, no disorder anywhere, but clean pots, as clean as water and scrubbing-brush can make them, both inside and out; clean crocks, clean soil (this is no anomaly), and in your greenhouse or window not only clean plants and foliage, but clean shelves and glass and floors; in fact, everything as clean as it can be. Plants hate dirt; it is poison to them; and where a man can live and be in health for fifty years or more an Oak tree may die in a year or two, and all from dirt in one shape or other. Take, for instance, a potful of rooted cuttings where a nice clean pot has been used, clean crocks carefully put in, over that a little Moss, and filled up with nice sweet soil that will scarcely dirt one's fingers. When reversed and turned out on the hand how nice it looks! how the clean white roots coil neatly and strongly among the soil and crocks! and how healthy the leaves above appear! above all, how they grow! Now take one where an unwashed pot has been used, a lot of messy soil crammed in, and the cuttings poked in anyhow, as some people do, and what is the result? Why, failure and disappointment, of course.

There is one other great difference between the air of town and country, viz., that in the former, from obvious causes, the air is so much drier than outside. It is scarcely necessary to enter into an explanation of this difference here. It arises from several causes, the chief of which is, that whereas in the country the surface of the ground is almost entirely covered with vegetation—trees, Grass, &c.—all of which act as reservoirs, as it were, of moisture, as well as distributors, by storing up within their tissues, &c., to a great extent, the rain that falls upon them, and afterwards continually giving off this, as well as what they draw from the natural and constant moisture stored up in the soil by gentle and steady evaporation from their leaves and blades. Yet in a town there is nothing of the kind; paving-stones, bricks, and tiles do not store up any appreciable amount of moisture, and consequently cannot give off any, or at least only a little just after rain. This circumstance leads us to the conclusion that not only may syringing, watering, &c., especially in dry weather, be practised advantageously to a far greater extent than would be advisable in the country, but that this, with other dwarfing influences, renders suitable a much richer soil than is needed where these influences do not exist.

Manure.—Speaking of manure, it is astonishing how much this very important point in the production of good crops of either flowers or vegetables is neglected, especially by amateur gardeners. People are beginning to find out now how very important heavy manuring and deep digging are in the growing of vegetables, but many do not seem to think it necessary to give their flower-beds any nourishment. This is a great mistake; flowers want manure just as much as vegetables do, though it should be of a more delicate, or rather less coarse, description, and it must not be used in such large quantities. Take Geraniums, for instance; the old style used to be poor soil and as little water as possible; now we give them rich soil, though not too much pot room, and plenty of water and liquid manure, and look at the glorious heads of bloom obtained by this method as compared with the old. Therefore, give your flower-beds a good dressing of either leaf-mould—which is much milder and more suitable as a rule for flowering plants than rank manure; or this last, either alone or in addition to the decayed leaves, if very old and thoroughly decayed, may be used regularly every year, and the advantage will soon be most unmistakably apparent. There are exceptions to this rule as to every other; some few plants do better in a somewhat poor soil, but they are the exception.

Vegetables, Fruit, &c.—It may as well be here stated that the gardener in town will find it not nearly so satisfactory to attempt to grow vegetables or fruit as flowers. Potatoes do no good at all. Cabbages grow to such a length of stalk, with so little on the top of it, that the only result is a derisive laugh on the part of one's neighbours instead of a succulent dish on one's table. Even Runner Beans, at least in the heart of London, drop nearly all their blossoms, though in the suburbs, or even a moderate-sized town, they are a capital crop if sown in good rich soil, and carefully trained in a favourable position. Dwarf Beans (French) often produce a fair crop, and these, with a little small salading grown in frames, are about the most suitable crop to attempt. The best dwarf Bean to grow anywhere is the Canadian Wonder. These last, such as Mustard and Cress, Onions, &c., may be grown in frames or boxes covered with glass, for if grown in the open your salad will be so black by the time it is fit for use as to be almost uneatable. A few roots of Rhubarb, planted in a well-manured border, will yield a good gathering, especially if forced or protected by means of large boxes covered with glass, or forcing pots, &c. Vegetable Marrows will sometimes set a few fruit if well grown, and Strawberries do, with care, almost better than anything. A short chapter upon the best method of growing these will be found farther on. Cucumbers, &c., almost invariably turn yellow and drop off when 2 in. or 3 in. long. Hardly any kind of berry fruit will set. Even Solanums, grown for their berries, will never keep more than three or four on, no matter what care may be taken of them. Besides Strawberries, Grapes are the only fruit found to give any appreciable result, and these, unless protected by glass, are so dirty by the time they are ripe as to be scarcely eatable. The obvious conclusion is, with the few exceptions mentioned, to leave such unsatisfactory subjects alone, and confine your efforts to the production of flowers only. Fruit-bearing is a stage beyond flowering; it is as much as the plants can do to reach this stage successfully without going any farther.

However, having determined to grow something, the ambitious amateur's first inquiry is—

What to Grow.—Strange as it may appear, there are some plants that will grow almost without any care at all to all appearance as well in a town as in the country; and again there are others that all the care and expense that can be bestowed upon them will fail to save from an untimely end. Between these two extremes are a vast number of subjects that will give more or less good results, according to the more or less favourable situation in which they grow, and the amount of care and attention bestowed upon them. Of course in the suburbs of a moderate-sized town many things will grow and flourish with ordinary care which it would be of no use attempting to grow in the heart of London. Let it be understood, however, that all my remarks on town gardening, unless where an express exception is made, apply to situations in the heart of large towns, where miles of streets and houses intervene between them and the green fields in every direction.

I have always found that the most unsatisfactory class of plants to attempt to grow in such places are, with few exceptions, our common old-fashioned English flowers, such as Violets, Pansies, Roses, &c. Roses will not grow, even when protected by glass and every possible care taken of them, and especially in London; they only drag out a miserable existence for a year or two, and then inevitably perish. On the other hand, many exotics, such as Petunias, Lobelias, &c., will grow and flower almost as well as if in the country. All forest trees, especially the Oak, Ash, Elm, &c., cannot exist in the smoke of large towns. The common Primrose and the Cowslip may, however, be taken as an exception to the above rule. These will not only grow, but also flower very satisfactorily in any town, if planted in good rich loam and a little care taken of them. To these may be added the common wild blue Hyacinth (not the Harebell), which makes a very pretty show each spring.

However, to sum up, grow only suitable plants of which lists will be given, and take care, also, to grow only the best and most vigorous varieties. Grow them from the very best seeds or cuttings, that is, if you grow your own; and the best, and consequently most expensive seeds will often be found the cheapest in the end. Give your plants the very best of soil and everything else you can afford, and constant attention,

with untiring care, will be sure to produce good results. The watering-pot and syringe will be your best allies. Keep them going constantly in anything like dry weather. Here it may be remarked that, as a rule, for the town gardener, seedling plants will give much better results than those raised from cuttings, as they grow and flower so much more strongly and freely. Of course when you have a good variety of any flower it is advisable to propagate and preserve it by means of cuttings, but the winter in large and smoky towns is such an ordeal, that after a few seasons anything that is not of a very robust description will have become so debilitated as to be almost worthless, at least such is my experience. Therefore grow all such plants as Petunias, Lobelias, Verbenas, and all such plants as give good results as seedlings from good seed freshly every year. Whatever you must preserve through the winter, even such things as hardy perennials, &c., keep as far as possible under glass. B. C. R.

ROSES.

Tea Roses in Pots.—Those plants that have been prepared for late autumn-flowering, as recommended through the spring and summer, will by this time have made good growth, the extremities of the young shoots being set with a number of buds in different stages of development. The plants should, before being taken in, have their pots well washed, and if there be the slightest trace of aphides, red spider, or thrips about them, they ought to be syringed with Gishurst Compound, at a strength of 2 oz. to the gallon; this will be better for the purpose than anything else, for it will not only destroy the above insects, but mildew as well, and at this strength will not injure either the leaves or the young buds. After the plants have been washed in this way, and the mixture allowed to remain upon them for half-an-hour, they should be well syringed with clean water to free the leaves from the white sediment left by the Gishurst. It is a good plan to prepare the solution two or three days before it is applied, as in this way it leaves much less sediment upon whatever it is used. Tea Roses are far the best for autumn blooming managed in the way above described, as not only are the flowers finer, according to their respective kinds, than can be had from any other description of Roses, but they give a succession that no other varieties will afford; the blooms cannot be expected to attain the size they will in spring and summer, but in the half-open bud state they are invaluable for making up into bouquets, buttonhole flowers, or for filling small vases.

Coal Ashes in the Garden.—It has long been known that coal ashes have the effect of mellowing heavy soils, particularly clay. A clay may thus be greatly improved in texture. It has been held that the fertilising properties of coal ashes are small; repeated analyses have shown this. Yet, used as they have been in gardens, without other manure, the effect has been such as to lead irresistibly to the conclusion that they develop in some way a considerable amount of fertility. All cannot be accounted for by the mechanical improvement, as in cases where this is not lacking the effect is still present, and apparently undiminished, if not sometimes increased—in this case acting seemingly as wood ashes do, requiring other (organic) fertility to aid if full results would be obtained. I was surprised, early in the season, on seeing unusually fine Tomatoes and Beans, to learn that the only manure used for them was coal ashes, scattered in the garden to get them out of the way. This was practised for several years, and no manure other than this had been used. My own experience is confirmatory, but I find that the effect is not immediate. It is more tardy than in the case of wood ashes, whose potash and soda act promptly. I would recommend that coal ashes, instead of being thrown away, be used in gardens, removing the coarser parts; also on Potato ground, always mixing them well with the soil, and as early as the ground will admit, and to be repeated yearly, thus giving time for effect upon the soil. I find the best success where the ashes have been applied for several years. The second year is sure to tell, even where thrown upon the ground and left to lie there undisturbed, as I have abundant evidence. But the place for full action is in the soil.—*Country Gentleman.*

Primula denticulata.—This is a hardy plant from the Himalayas, and has long been grown in pots in greenhouses for early spring flowering. When well grown it throws up abundance of stout stalks surmounted by round heads of pretty lilac blossoms. If planted out-of-doors the soil needs to be deep, well drained, but moist. It is best taken up and parted every two or three years. When grown in pots for windows or greenhouses, the best way is, when the plants have flowered, to divide them a little,

Himalayan Primrose (Primula denticulata).

and plant them out in good rich soil. Lift them and pot them in September, give plenty of air and water, and keep them free from green fly.

Anemones.—With us these flower well and are not the least trouble. In mild seasons they bloom from the middle of January to May, and in the early days of spring, when the weather is sunny, large patches of them are a mass of blossoms. These patches are never disturbed, but go on flowering from year to year without any other assistance than a top-dressing of manure in the autumn, care being taken, however, never to cut the leaves off after the flowers are over until they are quite withered. The seed is sown directly it ripens (we collect it carefully on a dry day) in a bed in which garden soil is mixed with plenty of sand. The sowing consists of merely scattering the seed on the surface and sprinkling it with sand. In dry seasons water should be occasionally given. The young plants frequently flower in the autumn of the same year; they can be planted out then or reserved for the spring. We have all shades of colour from scarlet and crimson down to white and violet, with many shades of mauve. Anemones keep fresh in water for many days; they furnish us in spring with an inexhaustible supply of cut flowers for the house.—N.

Fuchsias Out-of-doors.—I believe that there is scarcely one of the cultivated pot Fuchsias that will not survive our ordinary winters with very little care. Although they die down, they spring up in summer and bloom in autumn with a beauty and a vigour never seen in the case of a pot plant. They should be turned ou by the hundred in shrubberies and among herba ceous plants. One of the most beautiful fo this purpose is a variety called Wave of Life, i my opinion one of the best Fuchsias in existenc —T. W. O.

WINTER FLOWER GARDENING.

At the present time, when summer flowers a being cleared off the beds and their places fille with spring flowers, bulbs, &c., it may not b out of place to give a list of the best subjects have found to make a really good effect in winte so that when the beds are planted they may pr sent a furnished, cheerful aspect for the who season. They are selected as being perfectl hardy, and if procured from nurserymen wh make them a speciality, such as Messrs. Veitch Osborn, or Lee, who have exhibited them o several occasions, they will be found so we rooted from the frequent transplanting the receive, that there is no fear of their taking an harm by removal.

For Pyramids for furnishing corne of beds, large vases, &c., the following a first-class:—Biota (Arbor-vitæ) argentea, s ver speckled; B. variegata, gold speckled; B elegantissima, bronzy-gold; Cedrus Deodora all spica, silver; Cupressus Lawsoniana alba pe dula, white and grey; C. L. alba spica, whi and grey; C. L. argentea, silvery grey; C. aurea variegata, golden blotched; C. L. erec viridis, bright green; C. L. ochroleuca, ye lowish-white; Cupressus macrocarpa Cripp green speckled; C. m. sempervirens variegat green and gold; Euonymus japonicus D d'Anjou, striped; Juniperus chinensis aure straw coloured; J. drupacea, bright gree J. argentea variegata, silver blotched; J. v giniana argentea, white speckled; J. virginia elegans, dark green and cream colour.

For Carpeting the Surface, dwa bushy plants of the following are excelle either by themselves or in conjunction wi spring-flowering plants and bulbs: Abies aure gold; A. Engelmanni, grey; Aucubas in varie of foliage; A. vera fœmina, red berries; Bio aurea, golden-bronze; B. filiformis, green; perfecta, green and gold; B. semper aure bronze; Berberis pygmea, green; Buxus na variegata, silver-green; Euonymus latifoli argenteus, striped; E. aureus elegantissimu gold; E. rotundifolius argenteus, silver; Retin sporas—cupressoides, ericoides, filifera, ju peroides, obtusa nana aurea, pisifera lute plumosa, p. alba spica, p. lutea, squarrosa.

For Low Standards as Centres f Beds the following are well adapted: Euon mus latifolius argenteus, E. l. a. elegans, vario sorts of plain and variegated Hollies, vario sorts of plain and variegated Ivies, vario sorts of Privet, Osmanthus illicifolius variegat O. i. aureus, Portugal Laurels, Laurustinus and Bay.

These are all cheap, ranging from 6s. to 1 per dozen, and if carefully planted in the serve garden will last for many years, and wh too large for beds will be available for growi into specimens or for forming shrubberies—fact, a good investment for owners of eith large or small gardens. J. Groom.

Linton.

Creeping Speedwell (Veronica repen —Nothing can exceed the beauty of this pla where a deep green is required in geometric c pet or scroll work; it grows amazingly fast, a scarcely exceeds in height a penny-piece, be rolling like Grass, for which in small intric flower gardens, where the scythe or machines co scarcely be employed, it is an excellent subs tute. It maintains its emerald green colour cold weather, the only objection to it, perha being the short duration of its blooming.—T.

Autumn Primroses.—Amongst ha flowers now in bloom might well be classed lovely single Primroses that are now throwi up their earliest blooms. There is a freshn and beauty in these blossoms that are as acce able now as in the spring, for the summer is pr tically the winter of the Primrose, as it d not suffer in cold weather, and, except in sev frost, is always active. Strange to say, spite of the heat of the summer, the Primro in the open ground here have suffered but lit and are now covered with robust foliage; thi

the precursor of strong heads of flowers, the earliest of which are now developed. Primroses succeed well in the open ground if removed but once in the year, and that in the autumn. It is a mistake to allow them to remain untouched too long, as in the course of growth a woody stem is developed that eventually produces decay. When lifted and divided each autumn the plant has time to become established before the spring blooming period, and at the same time the development of an elongated stem is prevented.—A. B. H.

Plants for Shrubbery Borders.—Having seen inquiries in GARDENING about plants suitable for shrubbery borders, I beg to say that I find the yellow Daffodils to grow very well and look very bright and pretty in the early spring, besides Snowdrops and Crocuses. Later on I have always a quantity of yellow Turk's-cap Lilies, afterwards some large blue Monkshood and yellow day Lilies. The common blue Centaurea will flourish also, but it is a very straggling, untidy plant when flowering. I have two rows of London Pride along the edges of the borders and Thrift, both of which do remarkably well, and have the advantage of being hardy and evergreen all winter. The common Fumitory (Fumaria officinalis) thrives and flourishes on the very roots of trees, and has a pretty, graceful leaf. Evening Primroses (Œnotheras) and Sweet Williams will grow in some spots also.—KATHLEEN, *Didsbury*.

When to Move Tree Pæonies.—I notice that these should never be transplanted except in the autumn. If transplanted at any other season they are apt to perish either during the summer or in the ensuing winter. It seems a pity that these beautiful plants should be so little grown. They are at once among the most showy and striking of all hardy plants. Specimens of them in the herbaceous borders and beds are very striking; but massing them among shrubs or as separate groups on lawns is still more striking and effective. As soon as their leaves fall in the autumn is the only safe season to divide or move them.—D. T.

Hardy Flowers for Mixed Border.—Delphiniums are amongst the most showy of hardy perennials. As they under good culture attain a height of from 5 ft. to 8 ft. they are suitable for the back row of a mixed herbaceous border. They require rich soil, and if the flower-stalks are cut off as soon as the flowers fade, and the plants well watered, they will throw up a second crop of bloom. The Phlox is also a grand subject, exhibiting colours both chaste and brilliant. At the back of the border we would plant some climbing Roses, such as Adelaide d'Orleans, Félicité Perpetué, Gloire de Dijon, Ruga, climbing Jules Margottin, and climbing Victor Verdier; also Clematis of kinds, such as Jackmani, rubro-cœrulea, rubella, lanuginosa nivea, lanuginosa candida, and Lady Caroline Neville. These should be planted at intervals of say 6 ft. or 8 ft., and should be trained to poles some 8 ft. high. Once planted, they will last for years, merely requiring a good dressing of manure yearly. Of vigorous free-flowering subjects may be mentioned Coreopsis lanceolata, Rudbeckia Newmani, Echinops ruthenicus, Buphthalmum salicifolium, Lupinus polyphyllus, Monarda didyma, Lythrum salicaria splendens, Epilobium angustifolium, Aster longifolius formosus, A. Amellus bessarabicus, and Campanula latifolia. Amongst those of more moderate growth may be mentioned Œnothera Fraseri, Œ. riparia, Achillea Ptarmica fl.-pl., Alstrœmeria aurantiaca, Anemone japonica (pink and white), Centranthus ruber, Geum coccineum, Hemerocallis flava, H. disticha fl.-pl., Gentiana acaulis, and Tradescantia virginica. Dwarf-growing subjects consist of Funkias of kinds, Campanula turbinata, C. carpatica, C. pusilla, Potentillas, Sun Roses, Cardamine pratensis fl.-pl., Gentiana acaulis, Saxifraga granulata fl.-pl., Orobus canescens, and Lychnis Viscaria splendens. Then there are the many free-flowering and effective varieties of bedding Pansies and Violas, flowering bulbs, such as Daffodils, Snowdrops, Tulips, Scillas, Triteleia uniflora, and Fritillarias. Hardy annuals may also be sown in September and March, and half-hardy in April and May. A few climbing Tropæolums, Convolvulus, and Canary Creeper might be sown here and there training them to 4-ft. stakes. Stir the groun, well before planting, and plant either before the latter end of November or early in March.—J. C. B.

DWARF NASTURTIUMS.

THE exceedingly brilliant colours seen just now in these gay, but tender, garden plants resemble in one respect the leaves of the Virginian Creeper, which are never so beautiful as just before death. A sharp white frost may come at any moment, and destroy not only the beauty of the flowers, but also the life of the plant. Modern styles of bedding have hardly dealt with the Nasturtium, especially the dwarf kinds. Such rich, bold colours as are found in the compactum strains—sorts that must not be confounded with the Tom Thumb kinds—are marvellously effective when seen in masses, and if the soil be somewhat poor so much the greater the mass of bloom. Bedfont Rival, a deep, brilliant orange-scarlet, has large flowers of fine form, and it is a robust grower. Beauty of Malvern is very floriferous, but the flowers are smaller and have less depth of colour. Hunteri flowers exceedingly freely, but the growth is small and dwarf; this is better fitted for moist situations, whilst a robust kind, such as Bedfont Rival, does remarkably well under drier conditions. The most effective yellow, the flowers of which are profusely produced, is compactum aureum, a good companion to the scarlet kind. Lustrous is an especially rich-coloured kind, having deep crimson-scarlet flowers and

Dwarf Nasturtium (Tropæolum).

leaves of a dark hue. A very pleasing and altogether unusual colour is found in carminatum, a rich carmine-red variety of the large-flowered scarlet kind. The forms of compactum are so constant, that they are never without flowers from first to last. In this respect these outshine the Tom Thumb kinds, which have a short season of flower and then collapse. They can be had good from seed and generally true, but it must be understood that actual truthfulness as regards varieties can only be ensured by means of propagation by cuttings. Fortunately, cuttings are furnished by the plants in great abundance, and these will strike freely anywhere under glass if put in during autumn. A few dozens put into store pots will yield a large number of cuttings in spring, and these spring-struck plants make the best for summer bedding. Plants from cuttings also make less leafage, furnish more bloom, and, curiously enough, produce little seed, but what is so produced may be relied upon to fairly reproduce the parents if no other kinds of Nasturtium are growing near. In growing these for seed it is the practice to weed out everything from the stock that is not true. With such care the truthfulness of the seed produce may be fairly maintained. As the plants cover the ground rapidly, it is found advisable to rake the surface of the soil smooth and fine, so that when the seed is dropped, as it is doubtless will be largely during the summer, it can be gathered up by hand without much difficulty. The Tom Thumb kinds are sown in large breadths in the open ground in spring, but the compactum race grow too freely when so raised, and are best produced under glass and then planted out. Treated thus, they bloom earlier, are more compact, and can be planted out to succeed spring bedding plants. All who appreciate rich masses of colour will find these dwarf Nasturtiums or Tropæolums worth cultivation.

D.

FRUIT.

Free Bearing Pears.—There was mention made lately in GARDENING ILLUSTRATED of three Doyenne Boussock Pears weighing 1½ lb. I have a Doyenne du Comice Pear tree 9 ft. in height, which has given twenty fine Pears, three weighing ½ lb. each, and one 10 oz., most of the others 7 oz. and 6 oz., and none less than 4 oz.—C. T., *Broxbourne*.

Rust on Grapes.—I believe one of the chief causes of this is keeping the house too hot just after the berries are set, and not giving air early enough in the morning to take the moisture arising from the house away before the sun gets on the glass. I have found Grapes very bad with the rust before they have been touched with the scissors or hair of the head or the syringe, but since I have been more careful in giving air I have not been troubled with any rust on Grapes.—G. T.

Plum Reine Claude de Bavay.—This is a good Plum. Any one who thinks of planting Plums against a wall will do well to try this sort. It is a first-rate dessert Plum of exquisite flavour, ripe in the beginning of October, an excellent bearer, and not likely to crack.—T. WINFIELD.

Gooseberry Caterpillars.—Looking over an old book of practical receipts, I find the following for destroying caterpillars on Gooseberry trees: Get a quantity of Elder leaves and boil them in as much water as will cover them until the liquor is quite black, then clear and cool it, and to every gallon of this liquor add one gallon of Tobacco water; when the trees are quite dry, lay it on with a fine rose waterpot, and in ten minutes the caterpillars will fall off. Another way is to syringe the trees with a decoction of Black Hellebore. The caterpillars will eat poisoned leaves, and thereby be destroyed.—H. F.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

October 25.—Potting Lily of the Valley and Hoteia (Spiræa) japonica; planting Ivy about Fernery; Hyacinths and Tulips amongst annuals; and making up failures in Lettuce beds; moving Pelargoniums from frames into houses; putting glass protectors over intermediate Stocks; placing Roman Hyacinths and Roman Narcissi in heat weekly; putting all cuttings from frames into Vineries; getting Mignonette into pits as fast as possible in order to get frames at liberty for Lettuce; sending in Damsons; also Keswick Codlin Apples for jelly; manuring and digging about standard Roses; filling bins with soil in potting shed; turning some long manure, and watering it to sweeten it so as to be ready for hotbeds for Seakale and Rhubarb; digging vacant grounds; putting protection round Calceolaria pit; hoeing among Coleworts.

Oct. 26.—Taking up Gladioli; putting a few of the earliest Cinerarias into a warm greenhouse; pruning and nailing Morello Cherries; cleaning inside of tree guards in pleasure ground; getting all Pea stakes pulled up and put away.

Oct. 27.—Filling up blanks in Cabbage plantations; taking up and replanting some young Cherries in order to check over-luxuriance and induce them to fruit; getting up Dahlias, the tops of which are all killed; rearranging conservatory; moving an Araucaria imbricata; finishing nailing of trees on north walls; taking up Endive and putting it in orchard house; stacking Carrots and Beetroot; giving winter Cucumbers 1 in. of top-dressing; examining all young Pelargoniums in pits, and clearing them of dead leaves and flower-stalks.

Oct. 28.—Planting frames with Violets; also planting Cauliflowers under hand-glasses; staking all Mignonette; putting Gladioli into Vinery or other dry place; pruning and nailing Cotoneasters; hoeing and earthing up Cabbage.

Oct. 29.—Potting Schizostylis coccinea; shifting herbaceous Calceolarias into 6-in. pots; turfing round Roses after having manured them; taking up stock plants of Balm and Blue Salvia; cleaning and pruning Peach trees in early house and otherwise ready for starting; hoeing between autumn Onions and Spinach; rough-raking flower borders.

Oct. 30.—Saving some seed from the best varieties of Balsam and Celosia; sowing Cucumbers for February; potting some Roses in two parts good loam and one part manure; taking up Hollyhocks; putting Achimenes under the pipes in Vinery: Snow's winter White Broccoli ready for cutting; pulling up all bedding plants; cutting dead wood out of Yew trees. Plants in flower—scented-leaved, scarlet, and pink Pelargoniums, Mignonette, Stocks, Heliotropes, Scutellarias, Amarantus, Narcissus, Chrysanthemums, Schizostylis, scented Verbenas, Justicias, Pentas, Primulas, Coleuses, Fuchsias, and Plumbago.

Glasshouses.

The amount of bloom at present will unavoidably be smaller than at any other time during the season. This is always the case until Chrysanthemums come in; but where a sufficient number of Camellias exist to admit of their growth being so regulated as to have a portion opening their flowers about this time, not only will they be found most useful for cutting, but when in a healthy thriving condition, furnished with plenty of foliage, the combination of leaf and bloom which they possess makes them second to no plants in cultivation. The autumn-flowering Veronicas, too, that were lifted and potted some weeks back, will be an acceptable feature now for many weeks. Amongst hard-wooded plants of the easiest possible growth that flower at this season may be named the Croweas, which, although never making such a display at any one time as some plants will, still keep on producing their pretty pink, star-like flowers to the end of the year. These, with Tetratheca verticillata, the red-flowered Leschenaultias, Cassia corymbosa, and some of the Correas, will help to relieve the sombre appearance of the green foliage, which at this time predominates. It is now also that plants grown both as standards and in bush fashion of Habrothamnus elegans and Heliotrope will be found most useful; the little extra warmth kept up in greenhouses will assist the free development of their flowers. These, in company with other quick-growing subjects, though not requiring the assistance of manure water nearly so much as during the principal growing season, will nevertheless be benefited by a weak application once a fortnight. The autumn-blooming Salvias will likewise be available, and will bear standing close amongst larger-growing plants without injury. Any old examples of Primulas that have been kept on from last year will be useful. Where good healthy examples of Oranges exist there is no period of the year when the appearance of their fruit in its different stages is more acceptable than during this scarce time for flowers. Solanums, also, where sufficiently early to even have a portion of their berries assuming the ripened colour, will be of service. The many fine-leaved plants it is necessary to introduce at this season to give conservatories a furnished look should be kept scrupulously clean; the washing and sponging consequent upon this have the double advantage of keeping the leaves in a sightly condition and freeing them from insects, which, where even the highest keeping is maintained, entail more incessant labour than anything else connected with plant cultivation.

Cyclamens.—Pay every attention to these, both the older plants as well as those raised from seed, which have not yet flowered. Where there is not the means at command of growing them in a pit or small house, either wholly by themselves, or where the temperature can be regulated so as to make their requirements the first consideration, if a few could be moved to a position where they can be kept at about 45° in the night, with a day temperature proportionately higher than that of an ordinary greenhouse, they will come earlier into bloom.

Chrysanthemums.—There is often a difficulty with Chrysanthemums where sufficient and suitable accommodation does not happen to exist, especially in the north of the kingdom, where, without some protection, it is not safe to trust them out-of-doors even so late as this; for although hardy, still blooming as late as they do, if their advancing buds are subjected to many degrees of frost, they will be severely injured. On the other hand, they do better with more air than at this season is given to an ordinary greenhouse, for if kept at all close it has the effect of drawing out the flower shoots weakly, and if any mildew is present upon them the absence of a free admission of air day and night tends to cause its spreading, and if put in houses, already in many cases too full of other things, the Chrysanthemums not only get injured themselves, but do harm to other plants as well. Where there happens to be a Vinery in which the Vines are denuded of their leaves, it will be just the place for them for a few weeks until their flowers are about to open, leaving plenty of air on night and day unless there is an appearance of sharp frost. A place of this kind not being available, spare hotbed lights put over a temporary framework up to a south wall, with a loose piece of canvas or mats that can be put up in the nights to protect the ends and front, will answer all the purposes required. Glazed lights being wanting, an ordinary blind, such as that used for shading plant houses in summer, working on a roller so as to let down in the nights and expose them in the day in fine weather, is the next best thing to resort to. Continue to thin out the buds as they get large enough to lay hold of. Much thinning of the flowers for ordinary use is looked upon by many as unnecessary, but this view is far from being correct, as in the case of plants only wanted for decorative purposes if the flowers are reduced to, say, one-fifth of the number formed, these will be very much better than the greater quantity which would be less fully developed, and individually not possess near the substance to enable them to last long which the thinned examples have. The plants will now be benefited by manure water, but for the benefit of young growers it may be observed that although Chrysanthemums are exceptionally gross-feeding plants and enjoy much more moisture in the soil than most plants will bear, still it will not do to keep them too wet, or the roots will be damaged. Whatever stakes and ties are necessary should be given them, for such giving the preference to dry Willows or Hazels rather than painted sticks or the ugly deal often used without paint. Keep a look-out for mildew and dust any affected leaves that are detected, or it very soon will spread with a rapidity that will render the plants bare and unsightly at the time of blooming, with a proportionate weakening influence on the flowers. Should worms have got into the pots let the soil get a little dry, and then give a good soaking of clear lime water, which will dislodge them.

Flower Garden.

Dahlias.—These are flowering in the greatest profusion. We could ill spare any of them, either double or single, but the latter are most useful for decorative purposes when cut from the plant. Paragon is merely a variety of D. variabilis; but be that as it may it reminds us of the beautiful single flowers about which some of the old florists yet alive can speak. The colour, size, and shape of the ray florets are beautiful in the extreme, and if flowers of similar merit could be obtained now, they would be as eagerly purchased as Paragon has been. Dahlias have not suffered in the least from frost as yet, and it is still necessary to tie out the stems, and to see that the ground is kept neat and clean underneath them.

Gladioli.—These, like Dahlias, still continue to produce flowers, but the cold nights are rather more trying to them than to the Dahlias. While the weather is dry the bulbs may be left in the ground, but it is well to see they are taken up should a change occur. The ground intended for planting next year should be prepared at once. Use rotten manure liberally and trench it at least 6 in. below the surface. Trench the ground two "spits" deep, shovelling the loose earth out each time as well. Give two layers of manure—one in the bottom of the trench, the other when a spit and shovelling of earth have been laid over it.

Phloxes and Larkspurs.—Do not cut the stems of these over while the leaves are still green, but as soon as they decay they may be cut over close to the ground. See that the ground is kept clear of weeds, and that the hoe is worked amongst the plants when the ground becomes hard on the surface.

Tulips.—Ground for these must now be prepared, as planting time is at hand; the surface of the beds cannot be turned over too often when they are dry. Look over the bulbs and see that they are in good condition. Some sharp sand and good rotten turfy loam should be in readiness.

Fruit.

Vines.—The fine weather that has lately prevailed has wonderfully assisted the ripening of Grapes, seeing that fire-heat could be applied with free ventilation. Such treatment should still be continued till the fullest maturity is ensured, and then there will be no fear that the Grapes will not keep, provided, of course, they belong to the late-keeping class, such as Lady Downes, Alicante, Muscat of Alexandria, Mrs. Pince, Gros Colmar, &c. As soon as fully ripe the only essential condition to good preservation will be to keep the atmosphere dry, and always a few degrees higher than the outside temperature, which will be certain to hinder the settlement of moisture on the berries. They would keep well in any dry room from which frost and damp can be excluded, and in cutting them all the wood in front of the bunch should be left on, as this serves, as it were, as a safety-valve to prevent too much water being taken up by the berries. There is also another reason why such Grapes should now be cut, and that is the well-being of the plants that have, in many cases, to be wintered in Vineries, and which, till the Grapes are used, have to be kept too dry. Plants and ripe Grapes cannot by any possibility be made to agree satisfactorily together. Vines that have shed their foliage should be at once pruned; this done, the houses should be cleaned, and if necessary repaired and painted. The borders should then be top-dressed and mulched.

Vegetables.

Every moment that can be devoted to stirring the ground amongst growing crops will materially assist to consolidate a growth that will the more effectually carry them safely through the winter. Lettuces, Onions, Carrots, Turnips, and Spinach will all be much benefited by the bestowal of such labour. The weather is also most suitable for finally earthing up the earliest Celery, tying up a quantity of Endive for blanching, and moving and heeling in the same, either in frames or in some sheltered nook, where temporary protection can be easily applied. Root-storing can also, while the weather is dry, be more expeditiously done than when it is unfavourable. Salsafy, Scorzonera, and Beet ought now to be stored in dry sand in a cool shed, or else in clamps the same as Potatoes. Beetroot is sweetest if wintered where it is grown, but protection must be afforded it, which is sometimes inconvenient. Carrots we prefer to house and keep as dry as possible. Parsnips should always be left in the ground till required for use, as the severest frost does not harm them in the least, and the difference as regards their flavour is much in favour of wintering them in that way. Select a few of the most mature crowns of Seakale for a first batch, and other roots may be dug up and again heeled in to induce partial rest before forcing. Asparagus plots may now have a final clearance; cut the stems off to the ground line, then weed, and afterwards stir the surface soil with forks to a depth of 2 in. or 3 in., and the first hard frosty morning give a good dressing of the best manure available; of course those roots that are intended for the present season's forcing need not have manure applied to them. Cabbage, Coleworts, Cauliflowers, Lettuces, and Endive may all still be pricked out, selecting only the most sheltered spots in the hope of wintering them successfully. For the sake of neatness clear away all refuse vegetable matter as soon as the crop is exhausted, and let the ground be dug, ridged, or trenched as soon as it conveniently can be. Unfortunately, there is a disposition amongst us to let the kitchen garden take its chance, a feeling of some such sort as what matters it about neatness so long as the crops are good and supplies forthcoming.

CALCEOLARIAS FOR THE FLOWER GARDEN.

In the summer decoration of flower gardens, Calceolarias, when in good condition, are as yet unrivalled amongst yellow-flowering plants, and as the manner in which they are wintered has an important bearing on the following season's display, a few remarks on the method by which good plants may be secured may not be inappropriate at this, their best season of propagation. I am no advocate for fixed dates for any special operation, for seasons and localities necessarily interfere with such, and cultivators should in all

cases be guided by their own experience, but here October is quite early enough for getting in the principal batch of this useful plant, and our mode of proceeding is as follows :—

An ordinary garden frame is set on a solid bed of coal ashes, in a position sheltered from the north and east, but fully open to the south ; in this is put about 4 in. of loamy soil, sifted moderately fine, and pressed down firm and level, finishing off with ½ in. of coarse sand ; then it is well watered to settle the soil firmly, and healthy-growing shoots for cuttings that have not produced flower are inserted as speedily as possible in rows 3 in. apart each way ; the lights are then shut close, and shaded during bright sunshine, but the lights are removed entirely at night to prevent flagging, and as soon as they will bear exposure without suffering in any way the lights are removed altogether, except during heavy rain or frosty nights. We never put the lights on until the thermometer gets close down to the freezing point, but as soon as there is danger of severe frost the frames should be well protected on both the sides and top with Fern, mats, or litter, removing them as soon as the thermometer rises again, as the less they are coddled the better for the health and vigour of the plants, but in very severe or protracted frosts they will receive no injury if covered up for a week or ten days in midwinter, when they should be at rest, and when growth is positively injurious to their future progress ; but as the days begin to lengthen and solar heat increases the growth will soon become rapid, and they must on no account be allowed to suffer from drought.

In February they will require stopping by pinching out the points, leaving two pairs of

Cutting of Shrubby Calceolaria.

leaves, from the base of which four strong shoots will soon extend, which must likewise be stopped as soon as they are of sufficient length. By the end of March they will be dwarf, sturdy bushes, requiring more space for top growth, and the soil will be a perfect mat of roots. If the beds intended for their reception have been duly prepared by deep cultivation and are unoccupied by spring flowers, they should be planted out at once, when they will become thoroughly established before dry, hot weather sets in. Temporary protection must, of course, be provided, evergreen branches being the best material for defending them from the wind, which is more to be guarded against than frost ; for, although a few degrees will kill plants that have been drawn up in warm structures, they will not affect those that have been treated as above described. The beds should have a good deep mulching of rotten manure, leaf-mould, or Cocoa fibre in May, in order to retain the moisture in the soil. With us, in the beds the Calceolarias are the first to be effective and the last to be cleared off. Where spring gardening prevents such early planting as above mentioned, the only remedy is to transplant into temporary pits prepared in the same way as for cuttings. The benefit of confining the roots to a moderate depth of soil by means of a coal-ash foundation will be fully apparent at the time of removal, for if the soil be moderately adhesive and full of roots, the whole of it will remove in square blocks if cut down between the rows, and the plants will scarcely experience any check, but start into vigorous growth immediately. When it becomes necessary to increase Calceolarias in spring, a close box or hand-glass may be put on a cold bottom in the greenhouse. The plants from which the cuttings are to be taken should have 55° of heat to draw out the cuttings, which are best cut and put in in the same way as Verbenas ; give air every morning and a slight sprinkling overhead with water. As soon as they are rooted, gradually harden them off.

G. R. M.

GLASSHOUSES & FRAMES.

HINTS ON TREE FERNS.

The cultivation and description of Tree Ferns are so simple, that it is almost useless to allude to them, but as questions are sometimes asked under this head, the following may perhaps be useful to some readers of Gardening Illustrated :—

For compost, use good fibrous peat of rather a spongy nature intermixed with Sphagnum Moss, fresh or decayed, and place a good layer of the latter over the crocks in place of rough peat, which is sometimes used ; keep the trunks constantly syringed winter and summer, but more especially when making their young fronds ; at the same time keep them well shaded from the sun. If pots or tubs are used, let them be as large as convenient, as Tree Ferns are strong rooters, but where they can be planted out and treated as above, they will grow almost as luxuriantly as if in their native habitats. A very novel and pleasing effect might be produced by planting the Creeping Fig (Ficus repens) against the trunk, as it is particularly ornamental on the tall growing varieties ; the rough porous surface will allow the roots of the Ficus to attach themselves readily, and it will not only clothe the trunk with a living verdure, but also assist to retain moisture on the stem of the Fern, which is very advantageous. During the hot months the small-leaved Silver Ivy is also useful for the same purpose. Among varieties of Tree Ferns may be mentioned

Dicksonia antarctica.—This is not so rare as many other Tree Ferns, but is probably the most useful from its hardiness of constitution and freedom of growth ; the graceful fronds are of a lively green, from 3 ft. to 7 ft. long, and from 1 ft. to 2 ft. wide, and the crown of the trunk is covered with silky hairs of a glossy auburn.

Cyathea dealbata.—This is one of the finest Tree Ferns, both on account of its upright, handsome trunk, and also for its fine spreading fronds, which are completely covered on their underside with a silvery-white substance which does not wash off ; the stipes are of a glaucous hue, and the trunks are thickly covered with chocolate-coloured hairs, and are generally of equal diameter from the base upwards ; a few have slender stems and with their elegant arching fronds strongly resemble in general outline the elegant Cocos plumosa.

Alsophila australis.—The fronds of the Alsophila australis do not spread so wide as those of Dicksonia antarctica or Cyathea dealbata, but for compactness of growth and symmetry of outline this variety has few equals ; the fronds are of a deep green, and somewhat horizontal in their growth ; the base of the stipes are thorny, and of a dark brown, or in some cases black. The trunks are particularly straight, and of equal thickness throughout, and produce a fine effect in the conservatory.

Alsophila excelsa.—This is one of the most rapid growers of all known Ferns ; it is of the easiest possible culture, and a noble object in any stage of its growth ; the fronds are of a bright green, very large and spreading ; the stipes, which are upright, are densely clothed with light-coloured chaffy scales, 1 in. long at the base, and gradually diminishing in size towards the tip of the fronds. A very effective plant for a cool house.

Cyathea medullaris.—This is truly a giant Tree Fern of noble port. The trunk is densely clothed with black bristles, which interlace the bases of the stipes, and the latter are, when fully developed, as black and smooth as polished ebony. When young they are covered with a glaucous bloom or powder ; and there are, running parallel to each other, two white lines on the upper surface of each of the stipes, which are continued with slight interruptions to the extremity of the rachis. Cyathea medullaris is of rapid growth and of the easiest culture.

Cyathea Smithi.—This is decidedly one of the finest of the New Zealand Tree Ferns. Its trunk is slender when compared with those of other kinds ; the crown of fronds is more upright than horizontal, and are 3 ft. to 5 ft. long, very beautiful and plume-like in appearance. The stipes are clothed with cinnamon-coloured scales, and the fronds are a bright green and of easy culture.

Dicksonia squarrosa.—This is one of the most handsome and choicest of Tree Ferns. The trunks are slender and very upright, and almost black in appearance ; the stipes are thin as compared with others of the same class, and are densely clothed with light brown silky hairs. This plant has a very pleasing effect, beautiful appearance, and rare in collections.

Cambridge. Chas. Wood.

Ferneries in Towns.—How much more satisfactory such a Fernery as the one represented in our engraving (p. 406) would be in town gardens than the usual small greenhouse fitted with wooden stages and shelves, and on which are usually found a few flowerless Geraniums, Fuchsias, or long-legged Myrtles ! When the greenhouse happens to be in a sunny situation, then flowering plants may be grown with fair prospects of success ; but where, as is often the case, the sun never reaches the glass only for, perhaps, an hour in the day, then we would recommend a greenhouse with glass roof and brick or board sides to be turned into a Fernery similar to the one we now illustrate. Instead of the fountain, however, seats might be placed in the middle, and during the summer months such a Fernery would prove a deliciously cool and refreshing retreat. In such a place many of the choisest Ferns would luxuriate, especially if a little warmth could be given during the winter, but if no heat were used we have plenty of beautiful Ferns which would never suffer in the least from cold.

Spiræa palmata.—Exquisitely beautiful as this fine herbaceous plant is in beds and borders, it is even more so forced ; but to have the flowers well coloured they must not be allowed to expand in heat ; the plants should be set in a light cool house, where they can enjoy a moderate amount of air and receive plenty of water. So moisture-loving are they that they do best standing in shallow pans to intercept the drainage that runs through, which they soon re-absorb, and thus keep fresh without the attention they otherwise require to preserve them from flagging. I find that plants grown out in the open and dug up in the autumn are far preferable to any grown in pots, as the latter are never half so strong, and consequently do not bear such fine panicles of flowers. The best way to cultivate for forcing is to plant in very shallow trenches in a half-shady situation, as then they can be easily flooded with water occasionally, which is a great help in warding off red spider, so fatal to the foliage if they are allowed to become dry at the roots. The Spiræa admits of very ready increase by division, made any time before the plants have started much into growth, after which they should not be interfered with, as cutting through them then checks them severely, and is likely to end in their total loss. —S.

Solomon's Seal for Forcing.—For a choice bit of greenery, for the purpose of cutting during winter to associate with flowers, I know of nothing to equal the Solomon's Seal, as not only is it very lovely in the delicacy of its tints, but the stems are arched in the most graceful manner possible, and an additional attraction is the numerous silvery-coloured bells with which they are so profusely hung. This Convallaria is one of the easiest plants to force with which I am acquainted, as it responds readily to heat ; and the wonder is that it has not long since become a market plant, as it is specially adapted for the ornamentation of windows. They are grown largely for pot work by making beds or plantations in open half-shady spots on borders near a west wall ; where by digging plenty of manure into the ground, and cutting or dividing the large fleshy roots before planting, they increase at a great rate, and are ready for taking up again by the autumn. This we do as soon as the tops are fairly dead, when they are potted in rich light soil, and set in cold frames, to be drafted into heat as wanted, putting one or two into heat at a time. Besides being so serviceable for forcing, the Solomon's Seal is a capital plant for the

herbaceous garden, or for planting in the foreground of shrubs, or as patches near the margins of pleasure walks or rides, where it soon spreads and takes care of itself.—S. D.

ANSWERS TO QUERIES.

3254.—**Indian Corn in Pots.**—You must not expect to keep Indian Corn in pots throughout the winter unless in a warm house. You have made the mistake of sowing in September instead of sowing in April. If seeds were sown then, and plants grown singly in 6-in. pots, you might get very pleasing plants for a window or greenhouse, as the foliage is handsome and graceful. Some plants put out in the open ground, if of an early kind, will grow tall and produce both bloom and corn cobs by October, but there is not much ornamental merit about them. Being tender, the plants will not withstand the cold. Sow again early next spring. Of other plants for the window for the winter, it would be best to get some small ornamental Conifers and small Japan Laurels and Euonymus rather than bother with seeds. It would take years to raise such from seed, whilst plants raised from Acorns and Horse Chestnuts would be stunted and worthless.—A. D.

3266.—**Saving and Sowing Flower Seeds.**—Any fairly good garden soil will suit Indian Pinks, Stocks, &c., and the proper time to sow seed of all the plants named is in the spring. Verbena seed will need a little gentle warmth to help it to germinate, but Asters, Stocks, and Indian Pinks will come well if the seed be sown in a greenhouse or frame. To save seed from Asters it is but needful to cut off the flower-heads when the petals have quite decayed, lay them out upon paper during sunshine, and when quite ripe and dry rub them out, and cleanse the seed from all rubbish that can be fanned or blown out. Verbena seed must be treated in the same way. Stocks are pulled or the seed-pods cut when thoroughly ripe, and are hung up in the sun until quite dry, and then put into a canvas bag and threshed out, or if but a small quantity it may be rubbed out. If run through a fine sieve the seed is easily cleaned and fit to put by until sowing time. Indian Pinks ripen seed-pods gradually, that is, one or two at a time, and if these are picked off just as they burst, and are put into a paper bag, the seed when all is gathered may be rubbed out, cleaned, and put into a small bag or packet for the winter. Those who save their own seed should be careful to name all seed when cleaned up, and if they also put on the packets the proper time for sowing, it will serve to remind them when that season has arrived.—A.

View of a Town Fernery. (See page 405.)

3332.—**Red Potatoes for Exhibition.**—Much depends upon what is meant by a red Potato, as if it is meant to include all coloured kinds, then it has a wide application ; but if red ones only, then it is simple enough. Taking it in this latter sense, we put Triumph, an American kind, as the best, because it is the richest coloured, and fairly handsome ; but Red Emperor shows the handsomest tubers, and the colour is very good. Grampian is also a fine and handsome reddish Round, and is always a strong show kind. If red means coloured kinds, then of other coloured varieties we put Vicar of Laleham and Scotch Blue as the best purple Rounds, Radstock Beauty as the best red mottled Round, and Blanchard as the best purple mottled Round. We may add that in Kidneys, International and Woodstock Kidney are the handsomest show whites ; Mr. Bresee, a new American, and Garibaldi the best reds ; American Purple and Purple Ashleaf the best purples ; Heather Bell and Barron's Perfection the best mottled ; and Beauty of Hebron the best pink. Schoolmaster and Porter's Excelsior are the best white Rounds.—A. D.

3253.—**Mildew on Forget-me-nots.**—Mildew such as infests your Forget-me-nots is very prevalent this season on many plants in the open air. It is more obnoxious to the eye than actually destructive to the plants, but none the less it is well got rid of. Under ordinary house culture it may be destroyed by dusting freely with sulphur, but it is difficult to do this in the open air, as the first heavy rain will wash it off. Sometimes the mildew results from drought at the roots ; at other times from excessive moisture. We should advise that the plants in pots be first gently sprinkled with water, and then freely dusted with sulphur, and if the first dressing does not kill the mildew then try a second one. Perhaps the very best thing to do would be to get rid of the affected plants altogether, and get clean ones from another source.—A. D.

3263.—**Transplanting Rhubarb.**—We prefer transplanting Rhubarb after the leaves and stalks are decayed. You will find these disappear in a few weeks, and the plants may be removed then as soon as convenient. In doing so, it is well if a permanent plantation is the object, to cut the larger roots into two or more before replanting, and with a sharp knife to cut out the small crowns, leaving only three or four that are large and full. Such selected roots, if planted in rich manured soil, will soon get established and carry fine stalks. If the roots are lifted to be blanched or forced, it is well to allow them to remain whole, and to cut them up small for re-planting. After being forced, a little long manure should be laid over the newly planted crowns in the open air to protect them from severe frost.—A. D.

3280.—**Culture of Pyrethrums.**—These do not require any special winter treatment, as they are perfectly hardy, not needing the slightest protection during the winter months. They should be at once planted in the open ground, well stirring the soil intended for their reception. If the natural staple is at all light and poor, add to it some well decomposed manure, and in the spring give a good mulching of manure. The double Pyrethrums flower freely and continuously if kept well watered in dry weather, a good soaking of liquid manure being of great service. A light, open situation suits them best, and if so desired they may remain in the same place several years, but every spring the soil around them should be well stirred and a heavy coat of manure given. Where the natural soil is heavy, a little river-sand or leaf-mould mixed with it will do good. Cuttings taken off early in the summer, when the wood is tender, will strike freely in a cold shady frame. It is well to put in a few cuttings every year, so as to command a supply of young free plants to replace any that may show signs of exhaustion. Young plants planted this autumn should not, however, be cut, but should be allowed a season's growth to form themselves into good specimens.—J. C. B.

3262.—**Substitute for Grass.**—There are many plants that make excellent covers for margins and banks. Ivy is a good one, and needs only a little occasional trimming. The creeping Jenny is another that soon forms a dense cover of foliage. Perhaps the best for your purpose, however, would be the green Sedum Lydium, as this needs no trimming, except at the edges, and is always of a dense green carpet. Of creeping plants there is the Herniaria glabra, which becomes very dense, and forms a perfect mat of growth not more than 2 in. thick. It is a charming thing for the making of green carpets anywhere. We like also the Veronica repens, because that too is a dense creeping plant, and has the merit in the spring of being covered with tiny purplish-white cup-shaped flowers. It is then most lovely. All these are perfectly hardy, and any one good for the purpose.

3318.—**Furze Hedges.**—Good or bad Furze hedges are pretty much a question of attention. On light soils, if trimmed in close, there is no difficulty about it. There are several varieties, but for making hedges none are better than the common. The ground should be thoroughly cleaned and kept free from weeds. Plant in March moderate sized (not large) plants. Mulch over the roots, and water if necessary till the plants are established.—E. H.

3319.—**Fruit Trees.**—Plant Apples and Pears. If the clay is near the surface remove some of it, and put in good soil, or else raise the border by placing good soil over it. Plant as soon as the leaves fall. The following are a few good kinds : Apples—Early Julien, Stirling Castle, Manks Codlin, Cellini, Fearn's Pippin, King of Pippins, Court of Wick, Dutch Mignonne, Warner's King, Winter Pearmain. Pears—Williams' Bon Chrétien, Beurré Diel, Marie Louise, Beurré de Capiaumont, Pitmaston, Duchesse d'Angoulême, and Beurré Rance.

3283.—**Cucumber House.**—Build the flue in the centre of the space beneath the Cucumber bed ; the inner wall might be built on arches, the arches to be fitted with shutters to keep in or let out the heat at pleasure. The Cucumber bed may be supported with slates laid on a wood framework over the flue, but not touching it. On the slates should be placed leaves or dung ; on this again the soil. I have seen abundant crops of Cucumbers grown under such conditions. Of course a good deal depends upon the steady management of the fire.—E. H.

3331.—**Trees for Clay Soil in Devon.**—If the clay be well drained many kinds of trees will succeed inside a shelter of hardy trees, such as the Huntingdon Elm and the Abele Poplar, with an outer fringe of Willows. Among evergreens might be named the Yew tree and the Holly, the deciduous Cypress (Taxodium distichum), Cedrus Libani, Cupressus Lawsoniana, Juniperus chinensis, C. virginica (red Cedar), Picea lasiocarpa, P. Pinsapo, P. Nordmanniana, Thujopsis borealis, Evergreen Oak. Of deciduous trees some of the following may be planted : Eagle's-claw Maple, Acer rubrum, A tataricum, Ash (weeping), Beech (Fern-leaved), Birch (weeping), Catalpa, Thorns, Planes (American and Oriental), Oak (scarlet American), Poplar (Carolina), Tulip tree, Weeping Willow, Maiden-hair tree, Magnolia tripetala, and others.

3277.—**Violets not Flowering.**—We fear there is very little hope that your Violets will ever produce bloom ; they have probably become, like some Strawberry plants, quite barren, and should be destroyed. It is just possible that, by taking off and newly rooting the strongest of the runners, the plants would improve and flower, but it is really doubtful. It is now an excellent time to get plants and make a fresh plantation, and if obtained from some nurseryman, you may be assured that they will be of some good blooming strain. You will find the single blue Russian, the kind so largely grown for the London market, can be obtained cheaply, and the other best because the finest single kind is the Victoria Regina, a superb Violet. Of double sorts, Belle de Chatenay is a very fine new double white, but the old Queen of Violets is the purest colour. Blandyanum and the fine King of Violets are the best dark blues, and Neapolitan and Marie Louise the best pale blue

or mauve-coloured doubles. Plants of all of these if strong, put out now, should give a fine lot of bloom in the spring. All are very sweet, and though so simple and unpretentious, quite gems amongst early spring flowers.—A. D.

3330.—**Sea Sand for Plants.**—I give my experience of the use of sea sand for mixing with soil for plants in lieu of silver sand. I have used it constantly for over ten years, and never found it injurious. I tried it first for pricking out very tender Lobelias in. I used half sea sand and half leaf-mould. The plants flourished and made roots with wonderful rapidity. I found the little fresh fibres clinging to the sand, evidently enjoying it. I have used it for striking Myrtles, tender cuttings of Begonias, Fuchsias, and Geraniums with unvaried success. I mix it with soils for any description of plants. Calceolaria cuttings rejoice in it. In mixing for cuttings I pass it through a fine sieve; for rougher use I do not sift it too fine; the small pebbles tend to keep the soil open.—H. B. S.

3279.—**Plants for Hanging Baskets.** Evergreen subjects may consist of the Wandering Jew Saxifrage (Othonna crassifolia), and amongst Ferns there is nothing better than Woodwardia radicans. The variegated Cobæa also forms an excellent basket plant, growing into a dense curtain of beautifully marked foliage. Deciduous plants are to be found in the Moneywort and its golden variety, Siebold's variegated Stonecrop, and Fuchsia pendulaflora. Amongst flowering subjects may be mentioned the Nemophila, which should be sown early in the autumn, and the baskets filled by November. When thus treated, a fine display is obtained early in spring. Maurandia Barclayana, Lophospermum scandens, the Canary Creeper, and the varieties of Tropæolum Lobbi all make excellent subjects for this purpose. A very nice effect is obtained by placing a Fuchsia in the centre, finishing off with Petunias, Maurandias, and Tropæolums; or a hardy Fern of graceful habit, such as the Welsh Polypody, may form the centre, surrounding it with such plants as the creeping Toad Flax, Wandering Jew, Sedum carneum variegatum, and small pieces of the variegated Ivy. Such a basket will remain fresh and green throughout the winter.—B.

3255.—**Treatment of Arum Lilies.**—The cold summer of last year did not allow the Arums to mature their growth, the consequence being that flower-buds did not form. We remarked several patches of Arums last spring which showed scarcely any signs of flowering, simply owing to the fact that the temperature ranged too low during the growing season; for although this plant requires abundance of moisture, both atmospherical and at the root, when growing, it demands a rather high temperature to perfect its growth. The great point is to secure as long a season of growth as possible. The plants should be hardened off by the middle of June, and planted out in free rich soil, taking them up the first week in September. Your plants will probably bloom again next spring, as the past summer has been more favourable for them.—J. C.

3333.—**Propagating Pyracanthas.**—These are best increased by means of layers, bending down a young free shoot into the soil, cutting partly through at a joint and pegging it down. The operatian of layering is best performed at the fall of the leaf, when the young plant will be ready to take off the following autumn. Cuttings of this year's growth may also be inserted in a shady place. In pruning, cut out all small weakly shoots and lay in the strong ones at a fair distance apart. November is the best time to prune.—J. C.

3261.—**To Cultivate Bulbs in China Bowls.**—I find that the following plan succeeds admirably with Hyacinths: Place at the bottom of a large bowl several lumps of charcoal, then a layer of nice green Moss without soil. Place the bulbs on the Moss and cover well with more Moss; water about twice a week with tepid water. The bowl can be placed anywhere. The Moss requires light and any temperature, as you require the Hyacinths forward or late. I have tried this for years with success. I place the bulbs in a circle. Crocus bulbs I have not grown.—Woodlands.

3282.—**Cockscombs** succeed very well in a compost of sandy loam, leaf-mould, and some decayed cow manure, giving plenty of good drainage. Sow the seed in February or March in a temperature of 70° to 80°. When about 1 in. high pot off the seedlings singly into small pots, shifting them into larger pots in good time, never allowing the plants to get pot-bound. Keep the plants as near to the glass as possible. Give occasional waterings of diluted liquid manure, which will be found beneficial to them.—Kirkton.

3316.—**Lilium auratum.**—I bought a 1s. bulb in the City in the beginning of last year, and potted it in ordinary London mould with a good dash of silver sand and some rotten manure, and the result was one stem with six fair-sized flowers on it, strongly scented; and when the stem died in the autumn I cut it down to within 1 in. of the pot, and simply put the pot into a cold frame, with a flower-pot inverted down over the bulb. Early last spring I turned the bulb out of the pot, expecting to see that it had been killed by the frost; but, seeing the pot was full of root, I repotted it into a larger pot (about a 12 in.), filling the additional space round the bulb with some sifted mould mixed with silver sand and a sprinkling of Amies' Chemical Manure, and the result this season rather surprised me, for I had two stems, one with five and the other with four flowers, each measuring about 6 in. across when open. Considering that my plant has been grown entirely in the open air in the heart of the east end of London, I certainly think that there has been a want of attention on the part of "S. N.," and should advise him to try again, as I think it a plant very easily grown.—C. B.

Tree Fern (Dicksonia antarctica). See page 405.

3275.—**Grubs in a Greenhouse.**—We have of late been much troubled with grubs amidst a lot of young Cinerarias, and could not see the enemy in the daylight. The plants were for present convenience planted out in a soil bed, and were not in pots. Examining the plants by candle-light, we found the grubs eating the leaves, and thus caught them. Another examination the following night brought the same results, and thus we soon exterminated the entire batch of the troublesome insects. You should try the same plan. In any case they are more active by night than by day.

3265.—**Flowers for Spring.**—Pansies and Violas of the bedding section and in several colours, blue Forget-me-nots (Myosotis dissitiflora and sylvatica); Silene pendula, pink; double Daisies in several colours, double and single Primroses in many colours, Polyanthuses, purple Aubrietias, yellow Cheiranthus alpinus and yellow Alyssum, white Arabis and Iberis, white and pink creeping Phloxes, Omphalodes verna, Anemones in many colours, Saxifraga granulata, flowers double white; red and yellow Wallflowers, Queen Stocks, Limnanthes Douglasi, Saponaria calabrica, blue Nemophila. These are but a few out of what might be made a very long list of plants suitable for spring bedding and blooming. Of all these, however, are things that cannot now be dealt with from seed; in fact, the majority are increased by division of roots or by cuttings, and can now be had in plenty by purchase from florists who deal in these things. Of plants suitable for spring bedding or borders raised from seed are Silene pendula, Nemophila, Saponaria, Myosotis dissitiflora and sylvatica, Wallflowers, Stocks, &c. Seed of the Forget-me-nots should be sown early in July; Wallflowers and Stocks in May; Silene, Nemophila, and Saponaria in August. Pansies too may be raised from seed sown in July, but such plants cannot be relied upon to produce flowers of the colours indicated, though doubtless the larger portion will come true. Pansies and Violas obtained by propagation are far more valuable for spring decoration, because they give where wanted for massing entire evenness of height and colour.—A. D.

3260.—**Plants for Windows in Winter.**—Maiden-hair Ferns, yellow Cytisus, white Deutzias, Chinese Primroses, Cinerarias, Cyclamens, Camellias, early Azaleas, berried Solanums, Hyacinths, Tulips, and many other things will do well in the temperature of 40° to 50° if the air of the room is kept fresh and sweet; that is of the first importance to the welfare of all window plants. For earliest use some dwarf Pompone Chrysanthemums might be obtained, as they will make windows gay until nearly Christmas. Any plants kept in an open area would be of little service for a window except they were perfectly hardy, such as small shrubs, or Conifers, or border flowers like Primroses, Polyanthuses, Pansies, Iberis, Forget-me-nots, Alyssums, Daisies, &c.—A. D.

3316.—**Lilium auratum not Flowering.**—Excellent instructions on the growing of auratums have appeared more than once in Gardening. Many causes may account for their not blossoming freely. First in importance is to procure strong well-ripened bulbs, for here

lies the chief secret of success. The buds of the coming year are dormant in the bulb itself. Hence the vital importance of good bulbs. Plant as early as possible now in good turfy loam or peat loam and silver sand. Shelter the pots from frost as long as frost continues. Never expose your Lilies to a check from late frosts and cold winds. Shelter them from dripping rains, also from scorching sun. With moderate care you ought to have no great difficulty in getting plenty of blossom.—Lily Grower.

3314.—**Wireworms in Lily Bulbs.**—We are inclined to think that the wireworm is in the loam. If the bulbs are potted, put a spadeful of lime in a small tub of water, and then water them with the clear liquid. Repeat the operation twice, and the wireworm will in all probability die. When potting, take some white or river sand and mix with it some strong soot. Let this surround the bulb, and the wireworm will not approach it. We would try some in peat and leaf-mould, and see if there was any difference.—J. C.

2896.—**Best Time to Buy Hay & Grain.**—An experienced agriculturist states that no particular time can be given when the price of these articles is likely to be at the lowest. Those who wish to buy to advantage can only do so by watching the markets and purchasing when there is a drop. No one can tell, for instance, at present whether the price of hay will rise or fall this winter.

3282.—**Culture of Cockscombs.**—Cockscombs require the accommodation of a warm house or frame at the commencement of the year. They delight in strong heat, accompanied by a corresponding amount of atmospherical moisture. In years gone by, when the Cockscomb was held in such high esteem, it was generally grown along with early Cucumbers, both plants requiring the same conditions of growth. Growers then made a practice of sowing early in January, in free sandy soil, potting the young plants off when large enough into small pots and growing them along near the glass in the genial atmosphere of the Cucumber frame. It is necessary to sow thus early, as if sowing be deferred until a later period the plants, instead of forming combs, are very liable to run to leaf. The influence of the season causes them to make too strong a growth, whereas by bringing them along slowly at an early period the comb has time to form, and when the days get longer and light more intense the energies of the plant are concentrated upon the formation of the comb. The soil should be rich and free, consisting of loam, leaf-mould, and decomposed manure in equal parts. Although a hotbed is the best place, yet the Cockscomb may be grown in a light well-heated house.—J. C., *Byfleet.*

3321.—**Lily of the Valley.**—If it is Couch Grass that you have to contend with you had better take up the Lilies, thoroughly clean the ground, and plant afresh. Scarcely anything will grow where Couch has filled the soil with its underground stems. Take up the Lilies at once and lay them in carefully, then have the soil well and deeply stirred, extracting all the Couch. The ground should be gone over twice in order to make sure that none is left. Add a little manure to the soil and plant afresh.—C.

3322.—**Culture of Pyrus japonica.**—In order to induce this tree to make free growth, the soil around it should be stirred early in the year, and a good mulch of dung spread over the roots. When the weather is hot and dry, a good watering with liquid manure may be given. This treatment will promote the formation of strong wood, which, if fully exposed to the light, will give an abundance of bloom. Where it is seen that the wood is at all crowded the small weakly shoots should be thinned out, laying in the strongest branches at regular intervals, so that sun and air may play freely around them.—C. B.

3323.—**Hyacinths in Windows.**—Hyacinths may be potted at once, although the best way would be to pot a portion now, reserving the remainder until the middle of November, thus ensuring a succession of bloom. The Hyacinth likes a free, but rich soil—say loam, manure, and leaf-mould in equal proportions. Any free light garden soil will do, however, and if no thoroughly rotted manure is obtainable, add a little of Clay's Fertiliser or some concentrated manure to it. Pot so that the bulbs are covered with soil; water gently and cover the pots up with ashes or light soil in the open ground, allowing them to remain there until the latter end of November, when some of them may be brought into the dwelling. Covering up the bulbs with 2 in. or 3 in. of soil when first potted keeps them in their place, induces a more vigorous development, and causes the pots to fill with fibres before the bulbs themselves are subjected to the influence of artificial warmth, the effect of which is that from the moment that the flower-spike issues from the foliage it gathers strength from the large number of feeders contained in the soil. If, when the bulbs are taken out of the ashes, growth is appearing above ground, place a small flower-pot over each plant for a few days, gradually inuring to full exposure.—J. C. B.

3401.—**Gnat Bites.**—Ammonia is the best cure for gnat bites. When this is not procurable make a strong solution of soda and apply it to the parts bitten.—R. W.

3312.—**Pines in their Native Habitat.**—If by Pines J. Burford means Pine-apples, perhaps he may like to know that the most fragrant and luscious kind known in South America is found at Pernambuco, growing almost wild in sandy soil, and even sand, under the influence of a scorchingly hot sun. This variety is called Abacaxis.—Kensington.

3315. **Climbers for Covering Porch.**—We think that Ayrshire Roses would be likely to bloom fairly well in the situation mentioned. There is the golden variegated Honeysuckle (Pyrus japonica) and Cotoneaster microphylla, all of which would grow freely enough, and the Pyrus would give a certain amount of bloom.—J. C.

3257.—**Pruning Hardy Passion-flower.**—Do not touch the Passion-flower until next March, and then shorten back the shoots to three-fourths of their length. We should advise you to bring the shoots together before winter arrives, and tie a mat over them in severe weather, for this plant is liable to be killed off in hard winters.—B.

3311.—**Soil for Gum Flax.**—Do you not mean the Blue Gum (Eucalyptus globulus)? Keep the plants as they are in a cool greenhouse until March, and then pot them off. The Silver Leaf we do not know, but the young plants of this you had best treat in the same manner. The name we suppose to be a local one.—C.

3191.—**Pinus austriacus** is considered a good tree for seaside planting.—J. H.

3263.—**Rhubarb** can be transplanted any time in the autumn; the present would be a good time.—Kirkton.

3326.—**Cinerarias Failing.**—We can only surmise that you have given too much water at the root, thereby causing the fibres to perish. Perhaps the soil employed is too heavy. The Cineraria likes a free, fairly rich mould, a compost consisting of equal parts loam, leaf-mould, and well-decomposed manure best suiting it. After potting, keep the plants in a cool situation, watering for a time with great care.

3327.—**Roses for Arches.**—Gloire de Dijon is a very good Rose for the purpose, with which may be associated Aimée Vibert, Charles Lawson, and Cheshunt Hybrid.—C.

3328.—**Climbers for North Aspect.**—Nothing would give more satisfaction in such a situation than green and variegated Ivies, such as the large clouded white, the small-leaved variegated, and the common Irish. The evergreen Roses would also be likely to do fairly well, and you might try Pyrus japonica and Cotoneaster microphylla.—J. C. B.

3325.—**Name of Rose.**—If "H. J. P." will correspond with me, I think I can easily obtain the name of the Rose growing on the wall of La Villa Doria through a relative of mine living at Genoa. My address is—Leonard Hannan, *Prospect Hill, Howard's Field, New Catton, Norwich.*

3290.—**Gentians not Flowering.**—The Gentiana acaulis loves a slope, such as it finds on its native mountain sides; if the soil is too rich it will not flower. It should have turf mould, with sand and some stones stuck between the plants; a well-drained bank, where it will not be parched up. A cheerful and partially sunny aspect will suit it best.—S. F. M. L.

3283.—**Flue in Cucumber House.**—Let the flue be made in the centre of the border, then fill up between it and the front wall with brickbats to about 6 in. above the flue; then fill up with a mixture of good turf, sandy loam, and well-rotted manure.—T. S. W. S.

3252.—**Spring and Autumn Flowering Shrub.** The old pink China Rose not only flowers in spring and autumn, but all the summer. The Daphne Mezereum (Mezereon) flowers beautifully in early spring, and is very gay with scarlet fruit in autumn. The Cratægus pyracantha flowers in spring, and is covered with its beautiful fruit in autumn. Standard plants are very effective. Others might be mentioned if one could stop to think.—E. H.

3268.—**Outdoor Vines.**—Plant the following: Black Cluster, Miller's Burgundy, Early Summer, Frontignan, and Early White Malvasia. Any one having a good wall with a south aspect to spare will be doing public service by collecting into one place all the earliest hardiest Grapes, and thoroughly testing them.—E. H.

3281.—**Plants for Shady Wall and Roof of Conservatory.**—Plant Camellias and Myrtles for back wall. A Lapageria would doubtless grow, but I am doubtful about its flowering well till it reaches the roof.—E. H.

3264.—**Unfruitful Fruit Trees.**—A heavy dressing of clay will be the best thing to apply. Lay it on as soon as the leaves fall. Leave it exposed on the surface a couple of months, then fork it lightly in. It will give substance and body to the light brashy soil.—E. H.

3259.—**Wintering Roses in the West Riding of Yorkshire.**—Have them all on their own roots. The Teas could then be carefully lifted and laid in some dry spot thickly where protection can easily be applied. The H.P. and others can be sheltered with branches or dry Fern after the winter sets in. In this way scarcely a plant will be lost.—E. H.

3258.—**Slimy Growth on Lawns.**—It is an Algæ of some kind, perhaps the Witch's Butter (Nostoc commune) or some of that family. I have destroyed it on gravel paths by using salt. A mixture of lime and soot will be useful on Grass lawns. To have it is troublesome; apply it in spring.—E. H.

3278.—**Saving Aster Seed.**—In dealing solely with Asters it is well to mention that all kinds do not seed freely. The fine double Victorias, the large Pæony-flowered, and other flat-petalled kinds are not free to seed, and in this country if the autumn is damp very liable to rot in the stem. On the other hand, inferior kinds and all the quilled Asters seed freely, and the latter reproduce well the finest strains. Directions are given in a previous answer.—A. D.

3259.—**Wintering Roses in the West Riding of Yorkshire.**—During ordinary winters the standard and dwarf plants of the Hybrid Perpetual class will not be injured if a munificent mulching of manure be given at the beginning of December. This will protect the roots from the ravages of frost, and the trees will be quite safe. The Teas and Noisettes should be taken up towards the end of October, laid in and protected by a cold frame, and replanted in April. If the weather is very severe, Fern leaves, branches of Laurel, &c., placed amongst the growth of Roses out-of-doors will give some protection.—William Walters, *Burton-on-Trent.*

3356.—**Catching Slugs.**—Procure from a brewery some lees, which will be given gratis. Place them on a tile or piece of slate near the part affected by slugs; they will collect in large numbers during the night. Overturn the tile in the morning, kill the slugs, and prepare afresh for the next night.—G. G. R.

3415.—**Wintering Plants.**—*Margaret.*—The Delphiniums are hardy, so are the Columbines, and probably the Tropæolums, but we cannot say unless we know what kinds they consist of. As you say the above plants are in pots, plant them all out into deep sandy soil; they will do no good in pots. Send us a bit of the Tropæolum and we will tell you if it is hardy.

3416.—**Apple Trees Flowering.**—*Ferndale.*—This frequently occurs at this time of the year when a sunny summer follows a dull one. The trees will suffer no injury.

3417.—**Planting a Garden.**—I shall be thankful for advice on the planting of two long beds, running each side of a wide gravel walk opposite drawing-room window. The beds are 5½ ft. by 60 ft. on turf, and run east and west; soil heavy clay. I wish for a bright floriferous mixture of bedding out, herbaceous, and bulbous plants, and think that it should be partly formed to suit the broad straight walk.—F. N., *Somersetshire.* [You cannot do better than select from the list given in Gardening, Oct. 9. The colours and height are given, and you can make a selection according to your taste. We shall shortly publish a list of hardy bulbs, and likewise a list of plants which require annual or biennial division.]

3418.—**Thinning Camellia Buds.**—Is it advisable to thin out Camellia buds now? In many instances three or four buds crowd each other.—Ch. Andrews. [Yes; do not leave more than two together.]

3419.—**Planting Ivy and Virginian Creeper.**—When is the best time to plant Virginian Creeper? Does it want much manure? and would it succeed well in a very windy situation along with Ivy on the front of a house facing S.S.E? Also what is the best kind of Virginian Creeper to plant? and is it a self-clinging plant?—Hallamshire. [Plant now or in spring in well-manured, deep soil. If you want a close-growing plant, get Veitch's Virginian Creeper (Ampelopsis Veitchi), but if you want a more rampant grower get A. hederacea. It will thrive in nearly any situation. It will not support itself in a windy situation, but Veitch's kind will cling to the wall like Ivy.]

3420.—**Brown Spots on Rose Leaves.**—*T. W. W.*—You must expect Rose leaves to be getting brown at this time of the year.

3421.—**Lophospermum scandens.**—*T. W. W.*—It will be all right in any ordinary greenhouse. If it is planted outside cover its roots with a few inches of ashes and a little dry Fern or similar covering.

3422.—**Planting Evergreens.**—When is the time to plant Hollies and other evergreens in a windy and bleak situation? Is manure needful or beneficial?—Hallamshire. [Now is the time to plant. Trench the ground 2 ft. deep at least, and give a good dressing of well-rotted farmyard manure.]

3423.—**Devil's Apple.**—Newspaper reports of a recent inquest held by Mr. Carttar, at Deptford, stated that Dr. Speed said he was unable to account for death until he examined the intestines, in which he found some black particles and a seed of what was known as Stramonium or Devil's Apple, a wild berry and a deadly poison. The verdict was "Accidentally poisoned by eating wild berries." Can you inform me what plant is referred to?—W. Macmillan. [Mandragora officinalis, commonly called Mandrake, is the Devil's Apple. Stramonium is the Thorn Apple (Datura stramonium), a common plant in hedgerows, the fruit of which is deadly poison.]

3424.—**Evergreens Eaten by Insects.**—*S. A. C.*—It is a green caterpillar that has eaten the leaves. Hand-picking is your only remedy.

3425.—**Wintering Feverfew.**—*R. G.*—The Feverfew is perfectly hardy, but is best raised from seed every year.

3426.—**Propagating Virginia Creeper.**—I have a very pretty Virginia Creeper which clings to the wall most tenaciously by little rootlets. Being anxious to give some of it to a friend, I should be glad to know if this would be the proper time, and how ought I to set about it?—Pansy. [You may take off some of the shoots a few inches long having little rootlets, and pot them round the edge of a pot in sandy soil, and place them in a frame or under a handlight, but they would strike best in spring just as growth commences.]

3427.—**Manuring a Garden.**—Part of my garden is composed of soil inclined to be heavy, and the other part a rich brown, but shallow loam. It has this season grown a moderate crop of Potatoes, &c. I have it now partly in Celery and partly in Savoys, and have dressed it well between the rows with lime. I want to grow Beans, Peas, Celery, and Potatoes next spring. Shall I

have to use more manure when planting and sowing or not? I gave a liberal supply last spring.—HALLAMSHIRE. [Yes; well manure it and dig it up now, and let it have the benefit of the winter. Put Broad Beans, Cabbages, Broccoli, &c., in the stiff soil, and Peas, French Beans, Celery, &c., in the brown loam.]

3428.—**Lilacs not Flowering.**—I have two Lilac trees which do not bloom, and the foliage is extremely poor. They are planted in a corner against a wall. Can I remove them now? and what is the best treatment to improve the foliage and induce them to bloom? I may mention that round about the roots are a great number of twigs; should these be removed? [Move them now and plant in well manured soil in a sunny situation. Cut off all the suckers and thin out weak shoots from the heads.]

3429.—**Roses from Cuttings.**—*C. C.*—Much information has been given on this subject both in the first and present volumes of GARDENING.

3430.—**Camellias Blooming Early.**—What is the reason of my Camellia flowering so early? It was potted after making its new growth, and in June it was plunged in a bed of coal ashes under a north wall, where it remained till the beginning of September. It was then bursting its first bud. I removed it to a coal pit to shelter it from the heavy rains, and it has been in constant bloom since, and will last, I think, up till the end of this year.—J. H. [It made early growth which ripened early in consequence of being placed out-of-doors so soon after growth was completed. There is, of course, nothing remarkable in Camellias blooming in October. Indeed, they are plentiful in the market early in September.]

3431.—**Vegetable Marrows.**—I have some Marrows that (until the rains came) were doing well, but they have little green spots come along their upper surface. They are nearly full size. I should be glad for advice in the matter.—E. A. [Cold and damp are no doubt the cause.]

3432.—**Insects on Vine Leaves.**—*A. J. A.*—Red spider caused by a dry, hot atmosphere and insufficient ventilation. When the leaves come off the Vines, prune them and well scrub the rods with soap and water, whitewash the house, and next year ventilate more freely, and keep the paths and borders moist during hot weather.]

3433.—**Tenant's Right to Trees, &c.**—Two years since I took a house, belonging to which there was a piece of ground, or garden not cultivated. I planted same with shrubs and fruit bushes. I have now given notice to leave next March; cannot I remove the shrubs and fruit bushes?—A CONSTANT READER. [Not legally. You may make some arrangement with the landlord or incoming tenant.]

3434.—**Hyacinths in Glass.**—*Languey.*—See GARDENING, October 16. Hyacinths in pots may be watered after being potted, but they must be placed outside to dry for a few hours before being buried in ashes or put in a closet or cupboard.

3435.—**Grafting Plum Trees.**—How am I to proceed with some Plum trees which were raised five years ago from the stones? They are now about 6 ft. high, and the stem 3 in. in circumference; they have never blossomed. Is it necessary that they should be grafted.—A. M. G. [They may be grafted with some free fruiting Plums, such as the Victoria or Early Rivers. Your best plan would be to get the services of a good gardener for a few hours, who would doubtless give you a few grafts and do the work for you. If you graft them yourself you will probably fail unless you have some experience in the matter.]

3436.—**Benzoline and Plants.**—I have a greenhouse, in which during the night I burn a small benzoline lamp. The lamp does not smoke, but the greenhouse smells very strongly of benzoline. Is this injurious to plants such as Geraniums, Fuchsias, bulbs and also Maiden-hair Ferns? If so, how can I remedy it?—POSE. [The fumes of mineral oil are very injurious to plants. Your only remedy is to get one of the stoves which are specially constructed to be heated by paraffin oil or benzoline, and carry off the fumes by means of a small chimney. Such stoves, especially those that are made of terra-cotta, are very efficient and lasting.]

3437.—**Apricot Suckers.**—*A. S.*—If the trees you speak of are merely suckers from an old tree they will never flower nor bear fruit, as they are not Apricots at all, but suckers from the stock on which the trees were grafted. You may try grafting or budding them with the Moorpark Apricot.

3438.—**Warts on Apple Trees.**—*A. S.*—The white matter which causes the warts on the Apple trees is, no doubt, American blight. Well paint the parts with paraffin oil.

3439.—**Stapelia.**—*A. S.*—This belongs to a genus of Asclepiadaceæ, natives of the Cape of Good Hope.

3440.—**Manuring a Garden.**—*F. G. R.*—During the winter months is the best time for this operation unless artificial manure is used. That must be used when the crops are put in.

3441.—**Wintering Verbenas.**—*Practical Gardener.*—These may be wintered in a cold frame if a good covering be applied during frosty weather. Plenty of air must be given during fine weather, or mildew will soon destroy the plants.

3442.—**Wintering Gloxinia Bulbs.**—*Practical Gardener.*—A temperature of 55° to 60° will not be too high for these. Keep them dry and they will take no harm.

3443.—**Heavy Pear.**—I have just weighed a Duchesse d'Angoulême Pear from a wall in my garden here at Slough, and it turns the scale at 1 lb. 2 oz; another from the same tree weighs 11 oz. I have before had one of ¾ lb., but cannot hear of an English Duchess weighing 18 oz.—R. H. B. [We have seen fruit of the Pitmaston Duchess, which is a similar kind to the one named, weigh 2 lb.]

3444.—**Violets.**—I have just planted in a frame for winter blooming Violet plants taken from the open border. They were put in the border last spring when young plants, and they have grown very large and strong, and have thrown outside runners. Ought I to take off these runners now, my object being to get as much bloom as possible this winter?—HEATHER. [Yes; take off the runners and plant them in a frame, or out-of-doors close together.]

3445.—**Herbs in Winter.**—Will roots of Hyssop, Rue, Horehound, Wormwood, Balm, Sage, and Lavender stand the winter? or will they have to be taken up?—J. C. [They are hardy.]

3446.—**Winter Plants.**—Should Fuchsias, Geraniums, Petunias, and Ice plants, which were sown in March, be still kept growing on or not?—J. C. [No; keep them clean and healthy, and in a temperature just sufficient to keep them in good health.]

3447.—**Red Spider in Vinery.**—Please inform me the cause of red spider in a small greenhouse among the Grapes and the cure.—E. B. [A hot, dry temperature; insufficient air. Well syringe or sponge the leaves with soap and water, and keep a moister atmosphere next year. The spider will not prosper much now.]

3448.—**Worms in Garden.**—*B. T., Lancashire.*—Apply a good dressing of salt, soot, and lime, and well work it into the soil, ultimately throwing it into ridge to remain through the winter.

3449.—**Woodlice in Dairy.**—My dairy is infested with woodlice; can you inform me how to get rid of them?—A. A. [Fill some small flower-pots lightly with dry hay, and place them bottom upwards about the dairy, just tilting the pots sufficient to allow the insects to get underneath. Examine the pots every morning, and turn their contents into a bucket of hot water.]

3450.—**Moss on Lawns.**—Within the last few weeks my lawn has become covered with Moss; how can I get rid of it?—MOSS. [Rake it up with an iron-toothed rake, well sweep the lawn with a stiff birch broom, then sow it with wood ashes and soot. In March sow some lawn Grass seed.]

3451.—**Keeping Caladium Bulbs.**—*G. V.*—These are best left in the pots if room can be spared for them. Place them in a warm, dry corner, and sprinkle them with the syringe occasionally. Dry them off now gradually, not suddenly.]

3452.—**Manuring Fruit Trees.**—Will you give me information as to the manuring wall fruit trees? when and how often manure should be applied, especially in the case of Pear trees and Plum trees?—BETA. [Apply a coating of manure early in summer when the trees have gone out of bloom. Let it lie on the surface till autumn, when the leaves have dropped, and then carefully prick it into the soil with a fork. If the trees are vigorous, however, and make much growth at the expense of fruit, manuring would be injurious rather than beneficial.]

3453.—**Striking Geranium Cuttings.**—Will Geranium cuttings root now? and if so, what is the best treatment for them?—ERIN. [It is too late now, but you may try a few in pots of sandy soil in a warm frame, greenhouse, or window.]

3454.—**Planting Wistarias.**—*West Town.*—Plant now or in March.

3455.—**Crimson-leaved Bedding Plant.**—Can you tell me the name of that small crimson-leaved plant something like a Coleus, which is so much used for carpet bedding in the parks of London and Paris?—ARTHUR. [If very small leaves it is Alternanthera, probably, but Iresines bear some comparison to Coleuses.]

3456.—**Lime Water in Soil.**—If lime water be freely used upon a flower border for the purpose of killing worms and insects, is it injurious to plants or cuttings? and does it injuriously affect or improve the fertility of the soil?—T. H. [If applied without wetting the plants the lime water will destroy the worms and slightly improve the soil if not given in too large quantities.]

3457. **Sedum Sieboldi.**—I have a plant of Siebold's Stonecrop (Sedum Sieboldi); it has shown flower-buds, but they have never advanced. What am I to do to make it flower? It is in a basket hanging from roof; not often watered.—ERIN. [Probably it wants more air and sun.]

French Beans Ill-shaped.—*W., Dulwich.*—Imperfect fertilisation of the flowers probably.

Laying out a Garden.—*Ignoramus.*—No one can tell you how to lay out a garden without seeing it or a plan of it.

Greenhouse Pests.—*A Subscriber.*—We will attend to your queries in due time.

Inquiry.—Duke of Argyle's Tea Tree (Lycium barbarum).

A New Hand.—We cannot help you unless you send us your name and address.

Climbing Carnations.—*Nemo.*—You mean what are known as Tree Carnations. You can get a collection from any good plant nursery.

Pots for Hanging against a Wall.—*J. Knight.*—You can no doubt get them at any pottery.

Garden Annual and Directory.—*G. W. W.* 37, Southampton Street, Covent Garden.

Arum Lilies.—*Amateur.*—The treatment of these has been given several times in GARDENING recently.

Lamium striatum.—*Kathleen.*—At any of the large hardy plant nurseries, such as Ware's, Parker's, Backhouse's, &c.

Carnations and Picotees.—*Author.*—See our advertising columns; we cannot recommend tradesmen.

O. G. K. Y., Manington.—Send us your address and stamped envelope and we will advise you.

Rusticus.—Apply to Messrs. Jackman & Sons, The Nurseries, Woking.

Hamburgh.—At any of the fruit tree nurseries.

Scarborough Lily.—*W. H.*—See GARDENING, Oct. 2, of this year.

Names of Plants.—*B. H. W., Twickenham.*—1, Blenheim Orange; 2, New Hawthornden; 3, Cox's Orange Pippin; 4, Golden Harvey.——*Henry Meers.*—Send us flowers and leaves.——*C. Fuller.*—1, uncertain; 2, Golden Pippin; 3, fine crowned Pippin.——*W. K. L.*—We cannot name Violas or Pansies.——*Fiz.*—We cannot name Roses, and especially from decayed blossoms.——*F. N.*—Viola pedata.——*East Sheen.*—King of the Pippins.——*E. M.*—We cannot name the plant from a mere leaf; send us a good shoot and we may be able to tell you its name.——*J., Oldham.*—Datura stramonium, a weed in hedges, and deadly poison; it is not worth culture.——*A. J. B.*—Fuchsia fulgens.——*G. M. Hinton.* We cannot name nor advise on the culture of a plant from seeing a paltry little leaf; send us a good shoot.——*Shepherd's Bush.*—Holly Fern (Aspidium Lonchitis), a common kind.——*L. J.*—1, Adiantum Luddemannianum; 2, Polypodium pleisorum; 3, Adiantum assimile; 4, Polypodium glaucophyllum; 8, Adiantum hispidulum; 9, A. Henslovianum.—*Ignoramus.*—Agrostemma coronaria.——*Bath.*—Felicia capensis.——*R. A. G.*—Asplenium Fabianum.——*F. B. J.*—1, Salvia of some sort; 2, Santolina incana; 3, Sedum spectabilis; 4, S. oppositifolium; 5, Saxifrage (species).——*A. P., Stretford.*—A worthless Solanum.—*Ashtead.*—Plumbago Larpentæ.——*R. H. O. S.*—1, Sedum oppositifolium; 2, S. populifolium; 3, S. anacampseros; 4, S. telephium (variety); 5, S. Sieboldi.——*T. L. W.*—Erica Massonii.—*A. R. C.*—1, Mentha gibraltarica; 2, Sedum acre; 3, Coprosma Baueriana variegatus; 4, Euonymus japonicus maculatus; 5, E. radicans variegata.——*Jas. Tyler.*—Seed vessels of the common Honesty (Lunaria biennis).——*R. J. Thompson.*—Nephrolepis exaltata.

QUERIES.

3458.—**Quick-growing Trees and Shrubs.**—I shall be much obliged for advice as to what trees and shrubs of quick growth I can plant at the bottom of my front lawn, to screen from the road and form a thick hedge to shut out some unsightly cottages opposite; also the names of ornamental trees and shrubs suitable for the lawn of rapid growth. Aspect N.E. Country place.—HELENA.

3459.—**Pyracantha not Flowering.**—Can any one suggest what should be done with a Pyracantha that has not blossomed since the frost of 1878? The foliage is scanty, and it is not thriving. It grows against a wall.—SUNFLOWER.

3460.—**Climbers for Porch and House.**—The back of my house faces slightly west of north; fully exposed to that aspect; the subsoil is clay, well drained, and we have at times cold night mists from a valley. What climbing plants would best succeed against the house wall, and also for covering a wood trellis-work porch? From the front of the porch a narrow border, about 2 ft. wide, runs with a curve past the windows round the end wall of the house to the side entrance. What flowers will grow in this border, both at the back and west side? The boundary fence and some trees are 15 ft. from end wall. The eaves of the house project considerably.—P. Q. R.

3461.—**Shrubs for Screens.**—I have next to my garden a vacant plot of land which slopes to a public road, so that passers by can see the whole plot over the boundary fence. Sixty feet from the road are two fine Oak trees. Ten feet in front and south of these I want to plant a row or belt of shrubs to grow 8 ft. or 10 ft. to shut out the rest of the land from observation. Around the trunk of, and 10 ft. or 12 ft. from the larger Oak, I want a complete circle of shrub, excepting the inlet to what is desired to be a shady nook with rustic seat. What shrubs will be best for my purpose? I shall have to make up the soil for the plants in front of the trees, as the loam has been removed, leaving only a cold clay. There is good drainage.—EVERGREEN.

3462.—**Dendrobiums not Flowering.**—I have three fine plants of Dendrobium nobile which flowered very badly last season. I shall be glad if any one will inform me how to treat them, and when is the best time to repot? I have a Vinery and stove heat at command.—G. V.

3463.—**Culture of Oleanders.**—Will any reader inform me what is the best soil, and give me other directions for cultivating Oleanders?—IGNORATIO.

3464.—**Violets by Post.**—Can any one tell me where tin boxes can be got for this purpose?—JANE H.

3465.—**Evergreens for Chalky Soil.**—Can any reader tell me what evergreen trees will flourish on a chalky soil? They are wanted to form a screen.—CANON.

3466.—**Improving Lawn.**—My front lawn is in a dreadful weedy state, and I am most anxious to have it look like a lawn. When is the best time to hand-pick the Daisies? and can I destroy the Dandelions? The Grass is very coarse and rank, though it has had frequent rolling and cutting with machine. Would manuring do it any good? When should it be done? and how long would it require to be on the Grass?—A. M. K.

3467.—**Trellises for Screens.**—I am about to form a new border for hardy flowers next to a walk which divides the kitchen from flower garden. At the back of the border I think of erecting a line of trellis-work about 5 ft. or 6 ft. high, on which to grow Honeysuckle, Roses, Clematis, &c. The trellis would face south, and behind it and so near it, that their branches would almost touch the trellis, would be a row of pyramid Apple and Pear trees. Would the trellis and creepers so shade as to injuriously affect the fruit trees, &c.? If so, can any one suggest what I could better use at the back of the flower border as a divisional line? I cannot well move the fruit trees.—P. Q. R.

3468.—**Law Respecting Greenhouses.**—What are we (the readers of GARDENING ILLUSTRATED) to understand by "The Law Respecting Greenhouses," page 359, September 25? Here are two opinions—one magistrate says they are exempt, and mulcts the man out of 30s. for being in the right. The other says such buildings are not exempt, and he has had to put in brickwork up to the sashes. Taking the two opinions, it would seem as if they (the officers or magistrates) would debar an honest, hard-working, industrious man from anything in the way of amusement. The question naturally arises, Will such buildings become rateable to the poor, highways, sanitary, &c.? It would be well if the law on the subject could be clearly stated.—R. K. A.

3469.—**Wintering Ranunculuses.**—I am told there is great difficulty in preserving Ranunculus bulbs through the winter. Will any one tell me the best way to save them?—W. S.

3470.—**Worms in Cinerarias.**—I lately received some Cineraria plants, but not being able to pot them for two days they drooped, and looking at the plants a day or two after potting day, I found some small white worms and a lot of other insects under the pots. Can any one give me information as to how to proceed?—AMATEUR.

3471.—**Dandelions on Lawns.**—I should be glad to know what is the best way to eradicate Dandelions from lawns. The roots penetrate so deeply, that they cannot be effectually removed with a spud. Will constantly cutting the crowns cause the roots to rot away? Does Watson's lawn sand really kill the roots?—E. E. W.

3472.—**Portable Flower Boxes.**—Can any reader inform me where can be procured the Albert Vase Flower Box recommended in Beeton's "Young Englishwoman" ten or twelve years ago? The vases could be used separately for flower-pots, or fitted together for window boxes. —E. S.

3473.—**Blue Hydrangea.**—Is it true that Hydrangea cyonoclada is a constant blue? it is so advertised. Perhaps some of your readers would let me know before I purchase, as I am rather sceptical about it—S. L. Bourchier.

3474.—**Insects in Pansies.**—About the commencement of the year I bought some rooted cuttings of Pansies. For some time they got on very well, but after a while they seemed to be dying off. On taking away a little of the earth around the stalks, I found very small white insects, very like the mites we see in cheese, which were gradually eating the stalks of the plants What are they? and can the evil be remedied?—Creditonia.

3475.—**Rose on West Wall.**—Would a Niphetos Rose do well on a west wall? if not, what one would?—Creditonia.

3476.—**Buds Dropping off Camellias.**—Can any reader give any information of the cause of flower-buds dropping from two large Camellias? They have never been allowed to get dry. Two others by the side of them getting similar treatment are doing well and retaining their buds; the plants are about 8. ft. high and covered with buds, but getting a little black on top of bud and dropping off.—R. Templeton.

3477.—**Xanthoceras sorbifolium.**—I have a small plant of this which I ordered from a nursery last spring. I expected to get a fair sized shrub, but received a small plant in a pot. I planted it in a shrubbery border, and though its leaves are green and fresh it has made no growth. It is about 6 in. high and is in a sheltered place, but my subsoil is heavy clay, and position cold in winter. Would it be best to pot up my young shrub for winter, or let it remain in the border?.—Evergreen.

3478.—**Stones for Rock Plants.**—I have one side of a long low bank made up with large stones, and planted with rockery plants—Sedums, Sempervivums, mossy Saxifrages, dwarf Phloxes, &c. Many of the stones (refuse from mines) contain minerals, iron and lead ore, mundic, &c. Will these stones be too cold in winter for the plants, or otherwise injurious? The plants root into a good depth of good loam.—P. Q. R.

3479.—**Winter Cucumbers.**—I have a greenhouse 10 ft. by 8 ft., heated by hot-water pipes. I am desirous of growing Cucumbers this winter along with my Geraniums, Coleus, &c. Could any friend give me any information concerning it?—H. H. Statham.

3480.—**Climbers for a Greenhouse.**—I want two climbers for a lean-to greenhouse, about 14 ft. by 12 ft., temperature in winter about 55° to 60°, one to flower the last three or four months of the year, and one to flower the first three or four months of the year. The flowers must be white, freely produced, scented if possible, and good for cutting, not over difficult to cultivate, and if they do not require peat to grow in so much the better; lastly, they must be clean. If any practical reader would answer this, I shall be much obliged.—S. L. B.

3481.—**Neapolitan Violets.**—Will some one kindly tell me the proper treatment for the Neapolitan Violet grown in pots? and what soil should be used?—M. A. Y.

3482.—**Plants for Conservatory.**—I propose building a half-span greenhouse or conservatory about 15 ft. by 20 ft. area, south aspect, to be heated by a tubular boiler. I am unable to scheme out the best arrangement having regard to the greatest usefulness. Some plants I find must be kept just clear of frost, others at temperatures ranging from 40° to 70°; some a cool, dry atmosphere, others a hot and moist one. No doubt a great many of your readers, besides myself, would be glad to have a general description of a house adapted to the greatest variety of purpose and the methods of working it; also the most useful temperature to provide for; what length of 4-in. pipe per cubic foot of space, and what plants it would be adapted for? also if I partitioned off a portion of the house, what increased advantages would this procure me? I should also like to know whether two lengths of 4-in. pipe passing through a pit or bed would produce that bottom heat which is so often referred to.—Mole.

3483.—**Bare Places on Bowling Green.**—What can I do with a bowling green on which some places are very bare? Can anything be applied now to make the Grass grow? What is the best manure to apply in spring in a liquid state?—A. G.

3484.—**Treatment of Old Fig Tree.**—I shall be obliged if any practical gardener would inform me how to prune and treat a Fig tree which has grown luxuriantly for twenty years on a wall facing south, but does not bear fruit. Signs of fruit have appeared in spring, but the Figs have always dropped off when quite small. —E. P.

3485.—**Climbers for House.**—Will any reader kindly inform me what are the best evergreen creepers to place on the south-east side of a red brick house?—G. J. H. P.

3486.—**Plants for Pillars.**—I have a pillar in my greenhouse 6 in. round and 14 ft. high. I want to cover it with a rapidly growing effective climber; what would be the best? and should it be grown in a pot? or should a tile or two be removed to plant it out? There is a border in the house 16 in. in width and about 12 in. in depth; what can I put in it now? The house is well heated with hot water.—Constant Reader.

3487.—**Fruit Trees for London.**—Will someone kindly inform me which are the best six varieties of dessert Apples, six varieties of kitchen Apples, six varieties of dessert Pears, and six varieties of Plums suitable for cultivation near London?—An Enquirer.

3488.—**Fruit Trees for Monmouthshire.**—Will any reader tell me what Apples, Pears, and Cherry trees are likely to do well in the neighbourhood of Trelleck, Monmouthshire, which is about 600 ft. above sea level? Will Vines, Raspberries, and Strawberries succeed there? —Devaudon.

3489.—**Keeping Plants from Drying up.**—I have a greenhouse heated by a brick flue. In winter when I have much fire the plants become dried up. I am told to make a trough on top of the brickwork near the fire, but I think the steam from the water would injure soft-wooded plants. Will some reader suggest some means of remedying the evil.—W. P.

POULTRY.

Feeding Poultry.—In feeding fowls make it a rule to give them their meals as nearly as possible at the same hour each day. It is a bad habit to give them food at irregular times; they get into the way of expecting it whenever they see you, and besides being disagreeable it is not good for the birds. Usually, full-grown fowls in confinement are over-fed, especially as regards grain. Two good meals a day with the addition of the house scraps are sufficient for laying hens, for a fat hen never lays well. With chickens it is different; from the second to the fifth month they require very high feeding; a check in their growth can hardly ever be made up afterwards. The first meal in the day should be of soft food. Coarse oatmeal, or, better still, Oats ground with the husk should be worked into a paste with butter-milk or boiling water and makes very good food. Once or twice a week part pollard or boiled Potatoes may be used with the oatmeal. The greater variety of food, provided it is suitable, the better for fowls that are shut up. Spratt's Poultry Meal used in the same way is safe and wholesome, and the fowls are very fond of it. In mixing any kind of meal be careful not to make it too wet; it should be a light crumbly mass, and if it is sticky and adheres to the fingers when kneading it, you may be sure it is too moist. Fowls are such bad gardeners, that it is often difficult to let them have any liberty, but where it is possible to turn them loose upon a small grass plot it is very beneficial to do this in the morning before their first meal. If only for ten minutes it gives them an appetite, and makes a great difference to their health and laying. See that the vessel in which the soft food is given to them is scrupulously clean and scalded once every day. Let them have as much as they will eat greedily; as soon as they begin to pick and leave it take it away at once. Between this and their second meal, which should be given some time in the afternoon, let them have as much green stuff as they will eat —Cabbage, Lettuce, Beet leaves, and Grass cuttings. If fowls cannot have a Grass run they must be supplied with cut Grass as often as possible; the flavour of the eggs and deep colour of the yolk greatly depend on this, and the plumage of the birds cannot be kept bright and glossy without it. All the scraps from the kitchen should be collected for the fowls' use. In a large family this amounts to a great deal, and instead of being thrown in the dust bin and creating bad smells or put on the kitchen fire, and poisoning the house with an equally disagreeable, though not so unwholesome, smell, if given to the fowls it will make a great difference in the cost of their keep. Potato parings, Pea shells, ends of Beet, Carrot, and Turnip should be boiled and thoroughly drained before giving to them, and the pail in which the scraps are collected must be kept perfectly clean, and the contents emptied into the fowls' run once a day. Whatever is left uneaten next morning should be swept up, together with Cabbage stalks, and buried in some corner of the garden kept for the purpose. The corn used for fowls should be good sound Barley. It is a great mistake to give inferior or damaged grain; in the long run the best will be found to be the cheapest. Some people use Rice, and a great deal is sold in the shops under the name of "chicks' rice." It never pays to use it; there is hardly any nourishment or egg-producing property in it, and for young chicks is positively harmful. It may be used occasionally as a change of food if the fowls have been over stimulated with using some of the highly spiced patent meals, and it is beneficial in cases of diarrhœa, but to give it constantly in place of Barley is a mistake. Dari is excellent grain for fowls, but it is difficult to obtain in England. M. A. C.

Feeding Poultry.—"B. J. C." should not feed hens on Maize; it is too fattening. A little Spratt's Poultry Meal soaked over night in hot water and mixed with a little good sharps (with Barley meal and sharps now and again for a change) for the morning meal, and some good English Barley (whole) given for the afternoon meal (as much as the hens can eat), will be the best plan to keep laying hens. A change every three or four days in the food is very good, and warm breakfasts are beneficial.—Poultry Maid.

Vermin in Geese.—I am making a collection of parasites, and should like to have some of the vermin mentioned by "Lupus" under this heading.—L. G.

Poland Fowls.—In answer to "Cymro," Mr Hewish, of Nursery Lane (or Road), Brixton, Surrey, supplied me with a pen of Gold Polands last year, and they fully bore out the name they have of being everlasting layers, the average of three pullets being 205 eggs. —Gold Poland.

BEES.

Keeping Bees through the Winter.—In answer to "A Weaver," 22 lb. are quite sufficient for a strong stock, but as the stocks mentioned are old, I should give them about 5 lb. of syrup. As the combs in old hives contain an abundance of pollen which weighs very heavy, I should give them the syrup at once, in order that they may seal it over before the cold frosty weather, which is of great importance. I make my syrup for autumn feeding as follows: Put a quart of water in a saucepan; when it boils add 5 lb. of best loaf sugar, stir it until it boils again, then add a table-spoonful of common vinegar to prevent it crystalising; after which boil it ten minutes, stirring continually to prevent burning; do not put the vinegar in until it boils. A good way to feed bees in round-topped skeps which have no feed hole is to procure a tin canister, such as a ¼ lb. coffee or mustard tin make a small hole in the bottom, and insert a goose quill, which must fit tight and project about 3 in. from the bottom of the tin; make a small hole at the pointed end of the quill with a pin, so that the syrup runs down the quill and drops gently from this hole; then make a hole with a gimlet in the top of the hive, and insert the quill. The tin can be filled without removal, and the lid keeps strange bees from taking the syrup. Straw hives should always have a rain-proof cover; the bees are much more comfortable, and turn out stronger in the spring, and swarm earlier. At the end of February commence feeding again, using 3½ lb. of sugar instead of 5 lb.; feed gently and regularly, and at night the queen will then commence laying. It is the incoming of honey that controls breeding, not the contents of the hive, as bees are very cautious insects, and do not raise large families until they have the means to keep them. Therefore by giving food as directed you antedate the natural supply and breeding goes on apace.—A Berkshire Bee-keeper.

Supering Bees.—"J. B. W." should have supered his bees in the month of May or beginning of June to have prevented their swarming. Why bees work in supers is because they have not sufficient room in the hive; the cause why they did not work in them was because they did not need more room for their store. The diameter of supers will not prevent their taking to them. A small super for a weak stock, and a large one for a strong stock should be used. They do not require any ventilating hole at the top, or any beeswax as a guide. Glass supers require to be covered to exclude the light; a flannel cap fitted to them is the best covering.—Apiary.

Commencing Bee Keeping.—I fear you may give up your few rescued bees as lost; it will cost you much trouble and expense to keep them through the winter. Your best plan would be to get a bar frame hive, and in the spring tie into the bars with tape your clean comb and honey; then buy a swarm, shake them down into your hive, untie the tapes in ten days' time, put supers on in July, and by next autumn you will have reaped a good harvest of honey, and have a strong stock to winter. Cut out the dead brood; keep only the honey and empty comb.

—— "A Weaver's" two stocks should be quite heavy enough to go through the winter; he must be careful to keep them dry and free from insects. If he feed them freely in the spring when the Crocus is in flower, and give them some pea-flower in saucers (protected from rain) outside the hives, he will get strong and early swarms. He should feed them with syrup made from 1 lb. of preserving sugar to one pint of water and just boiled; put into pickle jars, the tops having muslin tied over them, and inverted over holes he has cut in the tops of the hives, all being carefully covered. Don't feed too fast (*i.e.*. keep the holes small), only enough to stimulate them and encourage the queens to breed.—One Taught by Experience.

HOME PETS.

Parrot with Sore Throat.—About a fortnight ago I purchased at an auction sale of birds a grey parrot; ever since it came into my possession it has been moping, and appears to be afflicted with a sore throat. I shall be very glad if some reader could supply me with a cure. The bird is in fine plumage, and is fed on Indian Corn with a little Hemp, which it prefers. I had a parrot for fifteen years which died last winter; since then I have bought two others, both of which have succumbed to this same throat disease.—Rob Roy.

Rabbits for Show.—Where can I obtain silver grey and Dutch rabbits? also what is the best method of getting rabbits up for show? What is the best kind of a "cote?"—W. G. Hackett.

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TEA ROSE DEVONIENSIS.

TEA ROSES FOR INDOOR CULTURE.

Roses out-of-doors in June and July are unsurpassed in loveliness, but some of the best Teas and other varieties produced in spring under glass are equally beautiful and doubly valuable. All Tea Roses succeed well under glass, but some bloom much freer than others. The best Rose for clothing a pillar, wall, or any other extensive bare place under glass is Gloire de Dijon; the blooms of this variety, although very pretty, are not so attractive, perhaps, as those of some others, but the length of time during which the plant remains in flower, and the succession of bloom which it gives in twelve months, is perfectly astonishing. As is now pretty well known, the blooms are very globular in shape, and a delicate fawn colour, shaded with salmon. This variety grows and blooms in any half-shaded position equally as well as any other variety will do in the best of situations. Maréchal Niel is another magnificent Rose under glass in spring, and if it only produced its flowers for an equal length of time in succession, as Gloire de Dijon, it would probably be more valuable than any other Rose in cultivation. When in bloom it is superb, but it does not remain in flower very long. This is the only thing that can be said against this Rose, and that is not sufficient to deter any one from cultivating it; for if it only bloomed one week in the fifty-two, that would amply repay all the trouble that could be bestowed on it. The flowers, which are deep yellow, are very full in the centre, large when fully opened, exquisite in the bud state, and deliciously fragrant. Céline Forestier, a Rose strongly recommended by many, is in some places useless under glass. It grows freely enough, but yields no flowers. Madame Falcot is a splendid Rose in the bud state. Like most other Tea Roses, it is very poor when fully open; but, leaving this objection out of the question, it is worth growing in quantity on account of the great value of its buds. They are deep orange, or bronzy-orange, in colour, and they are produced freely both on small and large plants. Niphetos is a favourite Tea Rose for culture under glass, as it blooms so freely, and produces its fine large white buds and blossoms in such long succession. We would include it in the best half-dozen Roses which could be named for cultivating under glass. Devoniensis—which is illustrated in Messrs. Cranston & Co.'s catalogue (together with two new Hybrid Perpetual Roses, named Mary Pochin and Mrs. Jowitt, which are highly spoken of)—stands high in the list when the quality of the bloom only is taken into consideration. It does not not bloom under glass so freely as some kinds. Cheshunt Hybrid is good, although not the best; but it is worth growing on account of its bright cherry-carmine colour. Belle Lyonnaise is another fine climbing Rose, with beautiful canary-coloured flowers, deeply tinted with salmon. We find it better than Cheshunt Hybrid, inasmuch as it blooms freer and larger. Marie Van Houtte is also a magnificent Rose for indoor culture, and one which should be included in all good collections. Bouquet d'Or, Lamarque, and Solfaterre belong to the same Noisette section as Céline Forestier, but they are all much superior to the latter, and are well worthy of cultivation.

Roses under glass do best under much the same kind of treatment with regard to soil, &c., as that under which they succeed so well out-of-doors. Good loam, plenty of manure, and abundance of water at the root constitute their chief requirements. As to planting, that may be done at any time, provided the plants are in pots; otherwise spring is the best time to plant. A good bed or station should be made for them. The extent of rooting space is not of so much importance as having what is done done well. A good plant may be grown in a hole not more than 2 ft. square. Plenty of drainage should be placed at the bottom, and above that the soil should be rammed down firmly. In planting, the roots should be kept near the surface, and they should not be broken or much disturbed. Until growth has freely commenced water must be sparingly applied, but after that never stint the supply, a rule which should be closely adhered to, not only when the plants are in full growth, but also when they are at rest or growing little or none. This is one of the chief secrets of successful Rose culture under glass. Directions as to training must be left to those who have charge of the plants, as they know best what is wanted to be covered; but this much may be said—that the shoots should never be trained on the top of one another, and the greater the distance between them, reasonably speaking, the better they will succeed. The pruning of all Tea Roses should merely consist in thinning out the weakest of the shoots, and cutting in to keep the plant within bounds. Green fly is about the only insect to which Roses under glass are subject. It is particularly fond of attacking the points of the young shoots and bloom-buds, and should be cleared off them by close syringing before the blooms open; afterwards syringe them off as they appear, for the plants while in bloom cannot be syringed without injuring the flowers.

The following extract from "The London Market Gardens" may prove useful to those who wish to grow Roses under glass: During winter and early spring the blooms of Tea Roses always find a ready sale at good prices in the market, and although large quantities are imported from France, English growers, by aid of cheap glass, &c., and improved kinds, are beginning to compete on favourable terms with the foreigner. Whilst it is true that Continental growers have the advantage of a warmer climate, which enables them to produce Roses early at little expense, yet they have the disadvantage of losing a day or two in transit, which, even in cool weather, takes some of the freshness off the blooms. The Covent Garden florists, moreover, want flowers at given dates, and these they can only procure at short notice from English growers who are within an hour's ride of the market. One of the largest growers of Tea Roses near London is Mr. Ladds, of Bexley Heath, who has several span-roofed houses, 300 ft. long and from 35 ft. to 40 ft. wide, filled with them during winter and spring. The plants are grown in good, sound, sandy loam in pots varying in size from 8 in. to 10 in. in diameter, the plants being trained in the form of pyramids by tying the main shoots to an upright sta inserted in the centre of each pot; in th way the plants have a neat uniform appe ance, and do not take up so much space if trained in any other form. Potting usually performed in spring after the plan have ceased blooming, but very often th remain in the same pots for several yea unless their drainage becomes defective. the houses are not required for other pu poses during the summer, the Roses a allowed to remain in them, otherwise th are removed and arranged closely togeth in beds in the open air, kept well suppli with water at the roots; and in this w they succeed almost as well as when l under glass. One house of Tea Roses however, always retained for furnishing supply of bloom during the summer a autumn. The principal varieties grown a Niphetos (pure white) and Isabella Spru (golden-yellow); these kinds are profu bloomers; the flower-buds are large a perfect in shape; and as fully-expande blooms are never needed in the market, onl kinds that will produce a large quantity well-shaped buds are cultivated. From th middle of September till the end of Ma the quantity of Rosebuds sent to mark from this place averages from 70 dozen t 200 dozen every market morning. Thes are readily purchased by the bouqu makers, who pay from 3s. to 9s. per doze for them according to the season and th supply in the market. Every afternoo preceding the market days a man goes ov all the plants and cuts every bloom that fit, placing them as he does so on a larg shallow tray carried by a boy on his hea When all are gathered each bud has piece of soft matting tied round it middle to prevent the petals from ex panding and becoming injured. They a then carefully packed in boxes read to be sent to market early the next morn ing. Some florists near London grow Te Roses into enormous specimens in tubs o large pots, and others plant them out an train them over the roofs of houses; littl pruning in any case is done to Tea Rose Some growers have houses planted with them in which they are allowed to grow nearly wild, and the crops of flowers whic they produce is marvellous. The greates enemies Rose growers have to contend wit are mildew and green fly; the former is only kept in check by precautionary mea sures, such as dusting the hot-water pipe with sulphur when the plants are starte into growth, and the latter by frequent fumigation, a healthy airy atmosphere, fre growth in the plants, and frequent syring ings overhead. In most nurseries Te Roses are grown in some way or other, th plants themselves being often trained unde the roofs of the houses in such a manne as to obstruct as little light as possible fro the other kinds of plants which are grow beneath them. In other cases the plant are grown in large pots and trained up a series of trellises about 6 ft. or 8 ft. in height and from 3 ft. to 4 ft. apart. A pathway along one side of the houses admits of the blooms being easily gathered or the plants attended to. By this means the whole of the space is utilised most profitably, and the plants receive abundance of light and sunshine on all side. Examples of Maréchal Niel and Gloire de Dijon are the kinds

usually found planted out in large houses, the branches being trained, as before stated, in lines along the roof. I have seen plants thus circumstanced that had been planted only two years which have made over 35 ft. of growth each, some of the shoots being as thick as a good-sized walking-stick and bearing hundreds of blooms. Such kinds as Mrs. Bosanquet, Devoniensis, Madame Falcot, and Lamarque are highly esteemed by some growers; they are all excellent kinds in the bud state, but for general purposes there are no Tea Roses at present grown for market which equal Niphetos and Isabella Sprunt. Mr. Ladds, to whom reference has already been made, used formerly to grow large quantities of Maréchal Niel, but he now scarcely grows it at all.

TOWN GARDENING.

There are three great divisions into which town gardening may be divided:

1st, out-door gardening, *i.e.*, beds or borders in the open air; 2nd, window gardening, or the culture of plants in boxes or pots on window-sills, in which so many are interested; and 3rd, gardening under glass, in greenhouses, frames, &c. For greater convenience and simplicity we will treat of these separately and in the order given. The treatment of plants under glass is placed last, not because it is least in importance, but because comparatively few amateur gardeners have the assistance of glass. But we would strongly recommend every one who wishes to grow fine plants and flowers, that is, if they have any place or room at all for anything of the kind, to erect a greenhouse of some sort, or even a frame or two will be found a great help. Anything in this way is a wonderful advantage, as the glass keeps off such an enormous proportion of the soot, dust, etc., which would otherwise be deposited on the leaves of the plants, and greatly hinder their healthy growth by choking the pores. There are other obvious reasons why glass should be used in towns wherever possible, even if artificial heat cannot be applied. There will necessarily be some amount of repetition in treating of these three branches separately, but we will try to make each as clear as possible, and perfect in itself.

Out-door Gardening.

A great deal depends upon the situation. The best aspect for a garden is, of course, south, or south-east or south-west; but if the plot of ground faces the north, or from being overshadowed by high buildings only gets a little sun in the morning or evening, it is of not much use to attempt the ordinary run of bedding plants, as these, at least when planted out, require to be exposed to the full blaze of the sun, or nearly so. In such a position only such things as Ivy, Virginia Creeper, which will do well in almost any soil or situation, Creeping Jenny, Golden Feather, Ferns, &c., should be attempted. Most gardens of any size have, however, beds or borders facing in different directions, and the way to succeed is, not to put all kinds of things in at haphazard, as is the common practice, but to consider what aspect or circumstances will best suit each individual class of plants, and proceed accordingly. This part of the subject, however, may more properly be treated of under the heading of

Laying out Gardens.—This is a very wide field for remarks and recommendations. Situations vary, and a plan that would suit one place admirably would be totally unsuitable for another, so that no definite plan can be given. A garden laid out on paper, with little regard to the situation and circumstances seldom pleases. A favourite modern author says, "Set to work to mark out and plan a garden on paper, and whom will your careful dispositions satisfy? What a most unsatisfactory square has even the great Bacon mapped out in his celebrated garden essay; and where he has failed, none, to my mind, has succeeded. Cowper, be it observed, does not lay you out a garden, walks here and alleys there, and beds and lawn and pond all ticketed. He wisely confines himself to the general praise of a garden, and to certain episodes, incidents, and operations connected with the management of it. And in this success may be attained, but not by planning out the whole with stereotyped precision. The reason probably is that no two gardens can be exactly or nearly alike, that is, if they be worthy to be called gardens. A thousand nameless circumstances and special accidents make this curve proper for a walk, or fix that slope as the one spot for your purple Beech, or suggest a Fernery here; there an opening in the shrubbery, and there a circling advance of the Laburnums, Lilacs, and Laurels hemming in the smooth-shaven, shadow-flecked, golden-green lawn. You are struck by some arrangement in your friend's garden; you would repeat it in your own; a short trial shows that it won't do. And for this reason, that your garden has its own individuality, which differs from that of every other as much as does that of its owner from the idiosyncrasy of all his fellow-men." These words, though of course on a much smaller scale, apply to the laying out of town gardens. There is, without doubt, a general sameness about the small square or oblong and flat spaces attached to most urban residences, called by courtesy gardens; and we cannot have ponds, Ferneries, shrubberies, and sloping lawns within so circumscribed a space. But even here there is room and scope for a far greater variety than would at first sight appear, or than is generally attempted. The front of one house is exposed to the full blaze of the sun, and the scorched up little square of ground looks as if nothing could ever grow in it. But get the soil into something like a fit state, by breaking up all the hard lumps, bringing the whole into a nice, fine, sweet, and open condition, and working in plenty of rich manure, especially deep down, for the roots of the plants to feed on while the tops are exposed to the scorching heat, and the surface of the ground is quite dried up—and, if you like, plant a few trees, Plane or Lime; they will shade the windows from the glare of the sun nicely. Then fill a bed or two with scarlet Geraniums and Verbenas (Verbena montana is a capital kind for such hot and dry situations); some London Pride, Corn Flowers, or Marigolds and Nasturtiums, will make the place look quite gay with a little attention, and a good shower from the watering-pot morning and evening. And yet the last occupant has actually made a rockery there, and tried to make Ferns, and Primroses, and Violets grow. No wonder he gave it up in despair. Then very likely he planted a Vine at the back of the house, where it is always shady, and couldn't make out why the Grapes did not ripen. Now put your sun-loving bedding plants in the front, with the Vine or a Virginia Creeper to cover the bare walls, and construct the rockery in the shadiest corner at the back, and plant Ivy to cover the wall there, and your place will be a little oasis in the desert in a short while.

Another place will be just the reverse of this one, and, in short, there are hundreds of different positions, all of which want treating differently, but for all of which something suitable may be found. Tastes differ, and as far as possible let each follow his own, but it far better to carry out an arrangement that does not perhaps quite please you, if it is suitable for the place, and likely to succeed, than stick obstinately to one that can give nothing but vexation and failure. Remember also that, though in the country you can put things almost anywhere, and they will do more or less well, for instance, Ferns in the sun, Geraniums in a shady border, &c., yet here, where there are so many antagonistic influences, the only way to ensure success is to give everything the position best suited to its nature and requirements.

Lawns.—A bit of lawn should always be found room for if possible; it is astonishing what an improvement it is, and how it sets off the flowers. The light, excessively drained soil so often found in town gardens is very suitable for turf, far more so than anything like a clay or heavy loam, and we have ourselves had, in the very heart of London a lawn that would have put to shame those of many country gentlemen. There is no need for rich soil, except just on the surface; on the contrary, the subsoil is better to be light and rubbishy, and many a lawn has been greatly improved by paring off the turf pretty thickly, removing some of the soil, and replacing it by 2 or 3 in. of ashes. Do not lay down Grass sods, unless you have some very good turf ready at hand; it is expensive and unsatisfactory. Dig the ground over, level it, put about 2 in. of fine, light, rich soil (sifted if possible, and the siftings put underneath), and sow a mixture of fine lawn Grass seeds, purchased from a good firm, such as Carter's, Sutton's, or any well-known dealer, in April or September, preferably the former. Roll and cut regularly, but not with a machine the first few times; use a sharp scythe. Soak the lawn with water on the evenings of hot summer days occasionally, and give a dressing of fine soil, guano, and a little fresh Grass seed every spring. In this way a good turf may be had in six or eight weeks from the time of sowing, and you will have a velvety, weedless lawn, a thing of beauty, always before your eyes. A few beds cut out of the turf look nice if filled with bright flowers in summer; and if you can manage it, a fountain, with a basin as large as possible, and a few gold fish, is very pretty and entertaining. A few young trees carefully planted in suitable positions are effective, but remember that no flowering plants will do any good very near to these, and that they greatly exhaust the soil. Of course these things cannot be found room for in many places, but we are only offering suggestions, and you must do the best you can.

As regards arrangement, do not, as we have cautioned before, place a rockery at the foot of a sunny wall, and plant Geraniums and Verbenas in a shady place, but make your rockery in the shadiest, dampest corner you can find, set all Geraniums, Lobelias, Verbenas, Phloxes, Asters, &c., in the open borders or beds, where they will get every ray of sun and all the air, and on your hot border, under the south wall, sow major Convolvulus, Tropæolums, Nasturtiums, &c., to grow up and hide the bare ugliness of the wall until your Jasmines or Vines have grown; and have rows or patches of either sun-loving bedding plants, or if the soil is very dry and poor, and you cannot replace it with better, grow Sunflowers, Marvel of Peru (this is a splendid plant for such situations), London Pride, evening Primroses (Œnothera), Stonecrop, and if the air is not very bad, Sedums, Mesembryanthemums, and Portulacas will do. There may be other beds or borders facing more or less east or west which get a little sun morning or evening, or both; in these almost anything will do, but the most suitable for those where shade predominates are Auriculas, Polyanthuses, Primroses, Pansies, and Violets (where these will grow), Fuchsias, &c. Hollyhocks also like shade, but Dahlias should have full exposure to the sun. For covering sunny walls plant Vines and Fig trees (these do admirably in any town, and their large and handsome leaves are very effective), and for shady ones use Ivy and Virginian Creeper.

Shrubs break the monotony of lawn and flower beds admirably; and by far the best of flowering shrubs is the Ribes, or flowering Currant. This grows freely anywhere, and though our cold springs often cut off its blossoms just when they are opening, still it looks fresh and green all through the summer, and the pretty pink buds always appear, and occasionally get a chance to come to perfection. The next best is the Lilac, though this does not often bloom at all freely.

Stands of Flowers out of doors are not successful as a rule, as, from the dry harsh air or some other cause, plants in pots out-of-doors do not do well, so that the only way to manage anything of this sort is to have ornamental boxes or baskets, elevated on rustic posts to a height of 2 ft. or 3 ft., and filled with rich earth. In this almost any of the plants mentioned as suitable will grow; Geraniums, both zonal and Ivy-leaved, Petunias, Fuchsias, Lobelias, &c., are about the best for this purpose.

Cats to anything just mentioned are fearful enemies, and as they abound in all town gardens, and are especially fond of such elevated positions, regarding them as a kind of vantage ground or castle, in their nocturnal combats; so that unless you can effectually exclude them from the garden you are as likely as not to find your beautiful flower-stand a melancholy wreck some fine morning. These horrible cats are the bane of town and suburban gardens, as is only too

well known ; they destroy anything, and sometimes everything in the most complete and unexpected manner, and are most difficult to banish or exterminate, as one of our comic papers so well illustrated some time ago. After a considerable experience of the feline race, we have come to the conclusion that town cats are of quite a different race to their country cousins, and, indeed, partake largely of the nature of Diabolus, or the Evil One ; we think that anyone who has often heard the fearful howls in which they sometimes indulge about midnight will agree with us. We used to trace out their regular tracks, and, finding they went up and down the stems of three or four small trees to get to the top of a very high fence, we nailed bands of sheet zinc about 18 in. wide round the stems, and set a number of very sharp steel hooks, like very large fishhooks, pointing both upwards and downwards, to stop them. This our precautions succeeded in doing pretty effectually ; only one or two of the most agile could surmount these obstacles, and our garden was left almost in peace. Where there is a level wall round the whole or part of the garden, the best way is to arrange a width of wire netting, about 18 in. wide, stretched on light iron or wooden rods, inclining inwards at an angle of about 45°, along the top of the wall, or even a good width of the same set upright along the top of the wall, but with no firm rod or rail along the top edge on which the cats might get a footing. Cats are very fond of eating and rolling on the Nemophila, for which reason, though it grows vigorously, we have excluded it from our list of suitable plants, as we have found it impossible to keep them away from it, and they completely destroy it.

(To be continued.)

FRUIT.

Apples and Chrysanthemums.—It is interesting to note that in the estimation of even such a fruit-growing people as are those about Maidstone, cut blooms of Chrysanthemums are held in much higher esteem than first-rate Apples. No doubt the prizes of £5 5s. for the best eighteen dishes of Apples, and £10 10s. for the best thirty-six single blooms of Chrysanthemums, to be competed for at the Maidstone show next month, will bring a large competition and first-rate subjects ; but can any thirty-six Chrysanthemum blooms be found that are more valuable than perhaps some 150 fine Apples, the which when staged will make four times as fine a display as the flowers, and can be eaten after the competition ? I know I amongst gardeners am not alone in thus deploring how much at shows of all kinds fruit is put into the background when flowers are about. Fruit is of the first importance to the nation, and certainly should receive a greater meed of encouragement than is now afforded outdoor Grapes.—A. D.

Vines in the Open Air.—From young Vines planted two years since against a south wall I have taken well-ripened bunches of Sweetwater, and even good coloured ones of the Madresfield Court Grape. This year the wood made has been very strong and firm, and now it is well ripened. The foliage is yet stout and green, and even as a leaf plant for covering walls or a house the Vine is valuable. I have several kinds planted out besides those that are of hothouse reputation. As they have ripened wood so well, perhaps with a warm summer next year I may get some good fruit. The position is warm, and the Vines like the soil. There is not a speck of mildew this year.—A. D.

Cranberries. — With very little care several of the hardy kinds of fruit-bearing bushes, both native and others, might be turned to profitable account under ordinary garden cultivation. I recollect that in a rather celebrated garden in the north of England, Oxycoccos macrocarpus, which we now figure, and Oxycoccos erythrocarpus were both grown as useful fruit-bearing bushes, especially the former, which was regarded (I believe rightly) as the true American Cranberry of commerce. The mode of cultivation was very simple. In a certain wild part of the pleasure ground, wet, and sloping south, four or five beds were formed horizontally across the slope. The beds might be about 6 ft. in width, made up of bog earth. These beds were divided from one another by ditches 3 ft. or 4 ft. across. The drainage of the hill-side was concentrated to this point, and the water discharged first into the higher or uppermost ditch. All the ditches were kept full of water to within 6 in. or 12 in. of the surface-level of the peat beds. At this height the water was allowed to overflow into the next ditch below—say at the west end, then at the east end, and so on from one ditch to the other, maintaining thus a slight current throughout from the highest to the lowest. In these peat beds this pretty evergreen trailing plant grew luxuriantly, thickly covering the bed with a mass of growth, and in the season abundance of fruit. The O. erythrocarpus, being of upright growth, was planted along the centres of the beds at distances of 10 ft. or more apart. These also bore fruit, though sparingly.—R. M.

Planting an Orchard.—In preparing the holes prepartory to planting the trees one can only reiterate that which has often before been

American Cranberry (Oxycoccos macrocarpus).

quoted, viz., make but one hole—in other words, mellow the soil so deeply that the size of the hole itself will be a matter of small moment. The depth of the hole is, however, of some importance ; in my opinion it should not be too deep, but merely sufficient to allow the tree to stand at the proper depth. Tap roots will work their way down almost in spite of all obstructions, but the delicate fibres and small roots that provide the nourishment should have light mellow earth in which to ramble. This is a common-sense view of the subject, and it is borne out in practce. Deep holes not unfrequently serve as receptacles for holding water, especially in clayey soils ; and when planters fill in the bottom with stones, no benefit of course is derived therefrom, as the accumulated water has no vent. In soils retentive of moisture trees should be planted even more shallow than they usually are, but in all cases it is a good rule to bear in mind that trees should always be set shallow. Concerning the selection of trees, planters differ. Most prefer small trees, but success is often attained with trees of large size. There is this difference : a person to succeed with large specimens must first thoroughly understand the nature and requirements of his trees and be versed in his work, otherwise he will fail ; but the merest novice with small trees, under ordinary circumstances, will not have many to replace. In respect to the selection of nursery trees, I prefer Apples three, or, at the furthest, four years of age ; Pears, two or three years ; Plums and Cherries, two years ; and Peaches, one year. These should all be strong and healthy, which is shown not only by the size of the previous year's growth but by the peculiar glossy appearance of the bark. A tree that has been unduly stimulated and forced into making a remarkably strong growth is not so valuable as one of small size with healthy, ripened wood ; and the latter, in the majority of instances, will come into fruiting in advance of its more robust competitor. The Grass question, in its application to orchard culture, is one over which there has been much disagreement among practical men ; but I doubt if the most strenuous advocate of seeding down to Grass would recommend the practice as soon as the trees are planted. The proper plan is to cultivate carefully for a few years until the trees have become well established, and then allow a turf to form, depending afterwards upon top-dressings.—S.

Culture of the Raspberry.—A cool, deep soil suits the Raspberry best, and in all such positions it is a very paying crop ; but almost any soil, however unfavourable it may be in its general characteristics, can by trenching and manuring be made capable of producing very good fruit. There are two systems of culture that I think are admirably adapted for the successful development of the Raspberry in small gardens. The first is to plant in rows 15 in. from plant to plant, and from 5 ft. to 6 ft. between the rows, and train the canes diagonally to espaliers 4½ ft. high ; two wires will be ample, one at the top and the other about midway between that and the ground. Drive in some stout Oak stakes 10 ft. or 12 ft. apart (having previously charred the bottoms to preserve them), and strain the wires on them. This is work that can be done by any ordinary labourer, and will not cost so much as placing a stake to every three or four canes when grown in clumps, and the fruit will certainly be finer and better. The other plan is to grow them in rows 15 in. apart and 4 ft. between each row, but not to train them at all, simply thinning out the young wood well in spring to admit as much light and air as possible, so that the canes may be strong and short-jointed. When the fruit is gathered cut out all the old canes that have ceased bearing, and still further reduce the number of young canes, leaving only enough to produce a crop the following year. Success will be in proportion to the way in which these details are carried out, for almost everything hinges upon having sturdy, short-jointed canes. In February cut back the canes to 3 ft. and mulch with manure. As Raspberries are surface-rooting plants, it is not advisable to dig amongst them. On dry, porous soils it will not be necessary to disturb the surface at all if it be mulched, but very retentive land, if not stirred, sometimes becomes sour and unwholesome after much treading, and should be forked up in autumn to aërate and sweeten it. The autumn-bearing Raspberries will succeed in a somewhat drier position than the summer bearing kinds. They are, perhaps, not much grown in small gardens, but they are very useful to mix with late Red Currants in a tart, or for an occasional dish for dessert. Their treatment is different from that of the summer-bearing varieties, inasmuch as they are cut down close to the ground every autumn, the effect of which operation is to induce the canes to throw up a new growth from the roots in spring. This new growth should be well thinned out, leaving only the strongest shoots for fruiting.—H.

Bamboo Flower Stakes.—These form the best of all stakes for garden work, and, being largely imported as a kind of packing and separating material, they are cheap. They require no dressing, or trimming, or rounding, and have a polished surface, better than any paint or varnish could give them. The portion thrust into the ground lasts several years, after which it may be cut off and the stake used in the ground again. They may now be had from most nurserymen and dealers in gardening requisites.

PLANTS IN SHADY GARDENS.

In a garden which gets four hours' sun daily there should be no great difficulty in inducing many beautiful kinds of flowers to thrive. In the first place, however, I should warn those who may have naturally unfavourable situations to deal with, that they must not expect to attain such perfection of culture, or enjoy so much variety, as it is possible to do where the conditions necessary to the well-being of plant life are at the command of the grower. Even professional gardeners of good attainments often find considerable difficulty in this way, and are sometimes obliged to relinquish the culture of favourite plants because soil or situation are not sui able. When the surface soil and the pots get covered with Moss, it is a sign that either the atmosphere is too moist or that too much water is given. Defective drainage is also a prolific source of mischief, as the soil remains in a saturated condition for a considerable period. Any plant which may appear to be suffering should be at once inspected, and should the drainage appear to be choked by dirt, wipe out the pot carefully, give fresh drainage, and replace the plant. It is also a good plan to work off some of the surface soil and top-dress with fresh mould. These little attentions in combination with careful watering will often suffice to bring a plant out of its feeble, unhealthy state, giving it a renewal of life and vigour. And now with respect to watering; banish at once and for all the absurd idea that plants require water at stated intervals. Such notions as this are too prevalent, and are often the cause of good plants going to the bad. Where the sun does not penetrate freely, great care must be taken not to give an overdose of water to any plants growing there, especial care in this respect being needed in the case of such tender subject as cannot be exposed to a free circulation of air. Ferns, for instance, which love the shade, are soon irretrievably injured when watering is conducted with a heavy hand or in a careless, haphazard manner.

Where the sun comes but little, Ferns and Club Mosses may be successfully grown. They delight in shade and moisture, and thrive perfectly where flowering plants generally fail. The great point is to avoid over-potting, and not to over-water. An excellent subject for a north window is the Moneywort, which forms a dense curtain of deep green foliage which, when thickly studded with golden-yellow flowers, presents a most cheerful appearance. This plant likes plenty of moisture, both at the root and on the leaves, and will succeed in any confined situation. Other shade-loving subjects consist of the Wandering Jew Saxifrage, which forms a fine basket plant, London Pride, Myosotis dissitiflora, Nertera depressa (a pretty little alpine bearing in winter a profusion of scarlet berries), Primula denticulata, and P. cortusoides amœna. Then there are the many beautiful varieties of Primrose and Polyanthus, which are well fitted for pot culture, and require but little sun, and flowering bulbs, such as Daffodils of many kinds, Triteleia uniflora, Scilla sibirica, and Hyacinths. We would also try Lilium speciosum and L. auratum, which do not like much sun when growing, and do very well in the confined precincts of a town. Pot them now in peat and loam, and grow them in the open air in the summer. Cuphæa platycentra (the Cigar Plant) is a free-growing, profuse-flowering subject, thriving well in partially shaded situations, and the Paris Daisies are highly recommendable subjects of the most easy culture. Such sun-loving plants as Geraniums and Fuchsias cannot, of course, be expected to flower so freely in confined quarters as when fully exposed to sun and air. Where they get several hours' sun daily they should, however, give some bloom; and we would try a few annuals, such as Nemophila, Bartonia, Clarkia, Collinsia, Godetia, and Leptosiphon, sowing in pots or in the open ground in September and March. The autumn sowing would come into flower early in the year, to be succeeded by those sown in spring. Pansies and Violas should not be omitted, as they do not mind a little shade in the summer.

J. C.

Double and Single Wallflowers.—Double Wallflowers require exactly the same kind of culture as the single-flowered kinds, with the exception that when a really good strain is procured from seed the plants are best propagated by means of cuttings. In favourable seasons early planted Wallflowers afford abundance of bloom throughout the winter and spring months, and they are general favourites with every one. Wallflowers may be profitably grown between fruit trees or in other shady places, where they thrive remarkably well. The seed should be sown in a bed in the open air in February, and when the plants are large enough to handle they should be transplanted 12 in. apart. During summer, if the place they occupy be very much shaded, they often become a little "drawn," but as the leaves fall off the trees in autumn they begin to branch out and grow well, and by December many of them are in bloom. After all the flowers have been cut, the plants, except the double-flowered ones, may be dug up and thrown away, and replaced by young seedlings, which are by that time ready for transplanting. Before planting, however, the ground should be always liberally manured and deeply dug. Young plants in every case produce the most and best bloom. Seeds should be saved from plants possessing the best branching habit, and which bear the darkest-coloured blossoms. When in flower go over the plants and mark those possessing these qualities by placing a stake by the side of each. Allow these to remain undisturbed until the seed is ripe, when they may be pulled up, roots and all, and housed in a dry place until a convenient season arrives for threshing out the seed. Cuttings of the

Double Wallflowers.

double kinds may be put in as soon as they can be got after the plants go out of bloom. Put them in firm sandy soil under a handlight, and when struck plant them out. Cuttings put in in August, September, or October will strike freely without any protection in a shady border, or in pots or boxes filled with sandy soil.

Veitch's Virginian Creeper (Ampelopsis Veitchi).—I have found this to be a very valuable climber, both for covering walls in the shade and in exposed situations, and the rapidity of its growth is surprising. Its leaves, too, are most useful for garnishing fruits and for table decoration during the autumn months. No plant is more easily propagated. We put in some cuttings of it two years ago as one would Ivy. They all rooted, and were planted thickly on old walls and other suitable places. Plants of this Virginian Creeper also make beautiful coverings for old stumps of trees, rustic flower-stands, and for rockwork.—M. T.

A Neat Hardy Shrub.—Among the plants in Covent Garden we notice Euonymus microphyllus, a very compact and attractive little shrub, looking at first sight like a small Box tree or a very close-growing Myrtle. It has, however, the very leathery leaves of its own evergreen relations, so that it will probably prove useful for town and sea-shore gardens. For general cultivation, too, we should say it will prove a valuable plant, from its distinct habit of growth and its bright green polished foliage.

CLEMATISES IN MIXED BEDS.

Although our fine hardy Clematises have increased in numbers and variety and cheapened in price during the past few years, yet they have not been utilised to the extent to which they might be made serviceable. Occasionally one meets with C. Jackmani trained to a wall, or used for pillar purposes, or for covering archways over walks, and sometimes plants of it are employed in beds, but only unfrequently so. In respect to the latter mode of utilising them, they can be made of great service as permanent bedders, using something else in association with them to prolong the flowering season to the greatest extent. There is one advantage about the Clematis, that is, when planted out for permanent service, if the roots be mulched in summer and manured in winter, the plants increase in strength and vigour, and this means, under good management, a greater quantity as well as heightened beauty in the flowers.

The pretty and free-blooming spring flowering varieties have not been so much used in our gardens as they deserve to be. They are characterised by free growth and a greater hardiness of habit than is generally supposed. I can particularly recommend the following varieties: Albert Victor, deep lavender; azurea grandiflora, pale mauve-lilac; Gem, deep lavender; Lady Londesborough, silver-grey; Lord Londesborough, deep mauve; Miss Bateman, pure white; Standishi, deep lilac, free and attractive; and Victor Lemoine, violet tinted with blue. Here, then, are eight varieties that would make charming beds in spring; but, in order to give the beds a furnished appearance, I would also plant them with Tulips, Hyacinths, Ranunculuses, Anemones, and other early-flowering subjects that would precede the Clematis. The profuse growth of the latter spreading over the bulbous plants would do them no harm, as after they have done blooming, the Hyacinths and Tulips would be comparatively worthless. A few bulbs of Gladioli dotted about the beds and some later-blooming Lilies would carry on the flower till late in the summer.

If it be objected that the spring-flowering Clematises are apt to be cut back by frost, a few branches of Spruce, Fur, or any evergreen laid over the beds would ward off the effects of the frost and keeps the flowers from injury. It is not necessary to plant many specimens in a bed. For small beds one or two may be used, according to their size; for larger beds three or four. The longer a plant is established in the soil, the more vigorous growth does it make, and if a number of plants were introduced to a bed in the first instance, some should be taken out as the others increase in size and strength. One caution is necessary here. The spring-flowering Clematises flower from the wood made the previous summer, and the grower should be careful not to cut it back, but simply thin it out, removing only the decaying and weak shoots, and shortening back the immature growths at the points. When the old wood is spread out on the beds after planting with bulbs or any other plants, it should be so distributed as to give the beds a furnished appearance when the shoots break into leaf.

Of the summer-blooming varieties, which may be said to flower from early in July till October, the following are well adapted for bedding purposes: Alexandra, pale reddish-violet; hybrida splendens, velvety purple; Jackmani, deep velvety purple; Lady Bovill, soft greyish-blue; lanuginosa nivea, pure white; magnifica, reddish-purple; Otto Frœbel, greyish-white; rubro-violacea, maroon-purple; Star of India, reddish-plum; tunbridgiensis, deep bluish-mauve; velutina purpurea, blackish-mulberry; and Viticella rubra grandiflora, a very fine Clematis, bright brick-red, very distinct in colour, small-flowered, but very free.

Bedding Violas or Pansies.—As concisely as possible I cheerfuly contribute my quota to the Pansy selection asked for on p. 391. Of blue-flowered varieties I take Blue King as the best early; flowers large, of good form, and of a cheerful blue; a capital kind for spring bedding. Blue Bell, next early and the most constant of all for summer and autumn blooming; flowers small, but most freely borne; a first-rate habit. Last, Blue Beard, a fine summer bloomer; flowers of good size and intense deep blue; habit dwarf, very free, and very

constant. Of purples, the earliest is the old Clivedon Purple, very effective in the spring and early summer. Mulberry—flowers of fine form and good substance, rich colour; habit dwarf and spreading; a very effective kind and hardy. Last, Duke of Perth, a Pansy-like kind; flowers large and showy; habit dwarf, spreading, and a good bedder. Of whites, Vestal, a true Viola; flowers of medium size, very freely borne, capital habit, and a capital summer bedder. Mrs. Pease, very pure white, early, free, and of excellent habit; and White Bedder, an improvement upon the old Clivedon White; flowers not pure, but in the mass very effective. Of yellows, the earliest of all is Yellow Boy, a true Viola, the best of all for spring gardening, wonderfully free, and very effective; Sovereign, semi-Viola, dwarf, free, and rich colour, very telling, and continuous for summer bedding; and last, Clivedon Yellow, a universally grown kind, having a fine habit, and blooming most freely and continuously. To these I would add Lilacina, very dwarf habit, flowers abundantly, in colour lilac-mauve; a very distinct and charming kind.—A. D.

Hollyhocks amongst Rhododendrons.—Of all the herbaceous subjects which we possess for planting immediately in front of evergreen shrubs, so as to have the latter for a background, none surpass Hollyhocks; not only are the colour and form of their flowers seen to the best advantage when backed up by a dense mass of green foliage, but the erect habit which such plants possess contrasts admirably with the spreading growth of Rhododendrons.

Boots for Wet and Mud.—I have stood in mud and water, 2 in. to 3 in. deep, for ten hours a day for a week without feeling any dampness or having any difficulty in getting my boots on or off. If you would be equally successful, before wearing your boots give the bottoms a good coating of tallow and tar and dry it in; then oil the uppers with castor oil—about one tablespoonful will be sufficient. The effect of castor oil is to soften the leather, while it fills the pores and prevents the water from entering.—F.

Destroying Wasps.—Some years ago, whilst living in the country, many complaints were made of the wasps stinging children, &c. Some half-dozen nests in a bank being pointed out to me, I took a small bottle of bromine and poured a few drops into each nest. In a short time I was enabled to dig up all the nests and destroy the grubs. Not a single wasp survived the treatment.—Chemist.

GLASSHOUSES AND FRAMES.

Passiflora quadrangularis.—We have a plant of this Passion-flower planted in an 8-in. pot trained up the roof of our greenhouse. It never fails to give a good supply of bloom from now until near Christmas; let me recommend any one who has a warm greenhouse to try this plant. Passiflora cœrulea is the well-known hardy kind which gives a succession of bloom through autumn till cut down by frost. The meaning of the Passion-flower is as follows: The leaf represents the spear, the five points the five wounds, the tendrils the cords or scourge, the ten petals the ten apostles (Judas having betrayed, and Peter denied Christ), the stamens the hammers, the styles the nails, the inner circle the crown of thorns, the radiance the glory, the white tint purity, the blue tint heaven, the centre pillar is the cross, and lastly blooms three days, and then dies.—J. Winfield, *Llanstephan*.

Veronicas for Cutting. — Veronicas should be grown more extensively than they are, for they yield an abundance of flower-spikes fit for cutting until late in the year when outdoor plants become somewhat scarce, and, being of many shades of blue, they intermix well with flowers possessing brighter colours.—J. G.

True Maiden-hair Fern (Adiantum Capillus-veneris) **for Covering Bare Walls.**—In a plant house in a nursery near London I lately saw this beautiful Fern growing most luxuriantly on the bare wall surrounding a bed in the centre of the house on which plants are set. The wall in question is about 3 ft. high, some 50 ft. or 60 ft. in length, and thickly clothed from top to bottom with the beautiful green fronds of this lovely Fern. Being a surface-rooting plant, it is better adapted for this kind of ornamentation than most other varieties; and when grown in this way, it is, in addition to having a fresh and dressy appearance, most valuable for cutting for bouquets, &c. When the fronds begin to look shabby, they should be cut off here and there, by which means a continuous succession of fresh, green fronds may be obtained.—S.

A good Autumn Flowering Plant.—Schizostylis coccinea is one of the most valuable of plants, either for conservatory decoration or for growing in any warm, sheltered nook for supplying cut flowers during autumn. In order to have strong plants it should be planted out early in the spring in beds specially prepared for that purpose, as it grows much more vigorously treated in this way than it does when confined in pots. The beds should be formed of some rich vegetable material, such as leaf soil and good fresh loam, or any refuse peat that has been cast aside as unfit for potting purposes. If either of the above materials can be spared to form a bed from 6 in. to 10 in. deep, there will be no difficulty in growing such plants of Schizostylis as will produce an abundant supply of its rich scarlet Gladiolus-like blossoms during the greater part of the winter. Where supplies of leaf soil or peat are not to be had, it may be grown tolerably well in any ordinary soil that has been well enriched with rotten dung previous to planting. Its flag-like leaves are rather subject to red spider, but this may always be prevented by keeping the plants well supplied, when necessary, with water, as it is invariably over-dryness, either in the atmosphere or at the roots, that favours the existence of this pest; both may, therefore, be guarded against by sprinkling the plants overhead two or three times a week, or as often as the weather renders such a course necessary or desirable for the health and well-being of the plants. If treated in this way, they will be found to produce flower-spikes early in October, when they may be taken up and placed in pots according to the size and strength of the tufts. They should then be placed in a close, moist frame for a week or so, to give them a chance of becoming established before being placed in the comparatively dry atmosphere of a greenhouse or conservatory.—J. S.

Culture of Lilium auratum.—Those who wish to attain complete success in the culture of this handsome and fragrant Lily must, in the first place, procure sound, well-ripened bulbs. Cheap, imported bulbs cannot be relied on to flower well the first year, the long journey which they have to make before reaching this country having the effect of lowering their vitality to such an extent that even the most careful culture fails sometimes to induce a free growth. The best way is to buy home-grown bulbs, as if dearer they are, in the end, cheaper, and one good bulb is worth several weakly ones. If, however, small bulbs be purchased, let them be potted at once in small pots, say 4½ in., in two-thirds peat and one-third loam, leaving about 1 in. of space for top-dressing in the summer. Water very gently and plunge the pots in a cold frame, or place them in a greenhouse or outhouse. About the latter end of May place them in the open air in a sheltered, shady situation, bringing them as soon as the first flowers fade into the greenhouse. Allow the plants to remain under cover, keeping the soil on the side of dryness until the leaves turn yellow and the stems die. This treatment will mature the bulbs, so that by the beginning of November they may be shifted into the next sized pot and treated as before. In this manner the bulbs will yearly increase in vigour, so that by the time they come into 8-in. pots they will form handsome specimens bearing many beautiful blooms.—J. C. B.

Edgings of Lycopodium.—Nothing is more objectionable in conservatories or plant houses than bare patches of earth, such as occur when the drip from shelves or staging makes it a difficult matter to keep any sort of vegetation in good condition. Under these circumstances I have found the following simple method to be the best for keeping that loveliest of green carpet plants, Lycopodium denticulatum, in good condition for a lengthened period. After laying a good coating of light porous soil over the bed or edgings that it is intended to cover I insert plants of the Lycopod about 1 ft. apart, and cover the space between them with clinkers from the furnaces. The Lycopod quickly covers the entire surface, and this being so well drained, the plant flourishes amazingly without damping off as it does if resting on the soil itself.—J. G.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 1.—Planting Crocuses in the flower garden; re-planting Daisies; putting all scented Verbenas under greenhouse stage for stock, also double Wallflowers into 4½-in. pots and placing them in frames; putting first Tulips into heat; placing a few Heliotropes into heat weekly, also all Bouvardias into a warm pit; digging ground for first sowing of Peas; pruning early Vines; raking up leaves for hot-beds, &c.

Nov. 2.—Potting Sweet Briers; putting in Rhubarb for forcing; taking up Dahlia roots, and putting them under greenhouse stage in not too dry a place; tying up tree Mignonette; also creepers on screen walls; and Lettuces in frames; putting lights over Strawberry plants in pots; putting litter round the Calceolaria pit; pruning Pear trees; keeping tree Carnations at about 50°. Plants in flower—Chrysanthemums, Salvia splendens, Erica gracilis autumnalis, Cytisus racemosus, and C. Attleanus, Epacris Eclipse, Tydæa splendens, Begonia parvifolia and incarnata, Tom Thumb Pelargonium, Primulas, Mignonette, Crimson Monthly Rose, Cinerarias, and Lobelia splendens.

Nov. 3.—Planting standard Roses in flower garden; taking up blue Salvias for stock plants; taking out autumn Cucumbers to prepare for re-planting; putting hand-lights over early Lettuce; stacking Carrots and Beetroot in dry sand or dry ashes; clearing out a pit for Asparagus forcing.

Nov. 4.—Potting herbaceous Calceolarias in good rough material, and placing them in well-crocked pots; a quantity of Sedum spectabile; taking up Gladioli; putting in first batch of Seakale for forcing; getting all Cauliflower which is ready put into trenches; washing Gardenias; watering bedding material when absolutely necessary; manuring vacant ground with garden refuse.

Nov. 5.—Potting Lily of the Valley for forcing; also a large quantity of Narcissus; planting Gentiana acaulis and Pansies; plunging the most forward bulbs in tan, and keeping them at from 58° to 60° at night and 63° by day with air; extra covering Lettuces, Endive, Strawberries, Calceolarias, Chrysanthemums, and cold frames on signs of frost; getting all Fuchsias and Daturas under greenhouse stage; putting some hay over seed Potatoes; taking up untied Endive and putting it into a frame; examining Camellias for scale; making a pit ready for forcing Seakale; cutting Ivy off top of wall to prevent its being broken down by heavy wind or snow.

Nov. 6.—Putting all young Heliotropes from pits into span-roofed house to keep them dwarf for Christmas; putting a little tan over potted Lily of the Valley and protecting all other plants in pots; hanging up in cellar all Cauliflower that is ready head downwards; gathering all Tomatoes and putting them in Vineries; digging vacant ground; emptying two frames so as to have them ready for early Carrots; pruning Raspberries.

Flower Garden.

As far as regards outdoor flowers the season may now be said to be at an end, as there are only a few Antirrhinums, Michaelmas Daisies, Pansies, Violas, and here and there a Rose left. Vacant beds should be at once dug or trenched, both for the sake of neatness and the full action of the weather on the soil. Roses will now be much benefited by a good layer of well-rotted manure; it should not be dug in, but if thought unsightly it should be smoothed over with a spade, and covered with 1 in. of fine soil or Cocoa-nut fibre refuse. Now is also a good time to plant Roses, and by doing it thus early, they will next season bloom as profusely as those that have been planted two or more years. Standards, or others that are large enough to be affected by wind, must be securely staked as soon as planted. In the preparation of beds for Roses, it should ever be borne in mind that they cannot well be too rich, or the soil too deep, but it should be well firmed previous to planting. As soon as the leaves are all down, shrubbery borders will require to be lightly forked over, and in the meantime any re-arranging, thinnning out, or filling up of vacant places can be done, as also the lifting and relaying of Box edgings, or filling up gaps in the same. Necessarily much time will now be taken up in the maintenance of neatness; just now worm casts are a terrible eyesore. The best remedy is lime water, the next best remedy is to roll the lawn as frequently as circumstances permit. Walks that, owing to the shallowness of the gravel, are subject to worm casts, may be effectually cleared of them by a sprinkle of salt, but care must be taken that the Grass verges or Box edgings are not injured by it.

The present is also a favourable time for making new or altering existing walks, and the material used has a long season in which to get consolidated before dry weather hinders the roller from having due effect. Old walks on which the gravel is discoloured or Moss-grown may be improved by forking up the gravel and applying a little fresh material to the surface, and well rolling them, particularly after heavy rains.

Pansies and Pinks in Beds.—The ground about the roots of these should be kept well stirred, and for this purpose small Dutch hoes about 4 in. wide answer best. Beyond this they require little more attention, except to see that the plants are steady in the ground. The soil should be pressed round the roots with the fingers, and some of the plants may be tied to small sticks to steady them. Slugs and the leather-coated grubs must be searched for at night.

Pinks for Forcing, comprising such sorts as Anne Boleyn, Derby Day, Lady Blanche (the best pure white), Lord Lyons (fine rosy-purple), Mrs. Pettifer, and Newmarket should now be lifted from the open ground and potted in good soil. If the plants are large they should be potted in 5-in. or 6-in. pots, and small plants in 4-in. ones. Place them in a cold frame near the glass, where the lights must be kept close for a few days, and then air may be freely admitted.

Pentstemons.—If cuttings of these have not yet been put in, no time should now be lost in doing so; they ought to be put into fine soil under hand-lights, either in pots or in the open ground. Our plants are now flowering freely, and most useful the blossoms are, as nearly everything else has finished blooming. If seeds are not required see that the seed-pods are removed.

Glasshouses.

Camellias require more water at all seasons than most plants with hard wood. If ever the soil be allowed to get dry from the time the buds have attained a considerable size until they expand, it results in their falling off. The same result will follow if the atmosphere be too dry, but injury from this cause mostly shows itself much sooner in the case of plants having been dry at the roots. The autumn-flowering Speedwells (Veronicas) require the soil kept moderately moist, especially while they are blooming, or the flowers will be liable to drop. Cytisus racemosus, Acacias, Neriums, Myrtles, Statices, greenhouse Rhododendrons, Lapagerias, Croweas, Clianthus puniceus, Cassia corymbosa, and Abutilons are plants that should never be allowed to get so dry as the more tender kinds; they are free growers and equally free in producing flowers, afford great variety, and are altogether much more suitable for those to grow whose experience is limited than plants that are of more difficult management.

Azaleas, although fine-rooted subjects, should never be permitted to become dry. The exquisitely-scented Daphne indica, held in universal estimation for its perfume, is often killed by over-watering; except during the season when it is making growth, it should never be watered until the soil has got almost dry. Oranges, especially the small-growing Otaheite variety, need careful watering in the winter, when its roots are at rest. Fuchsias that are cut back in the autumn after flowering are much better if the soil be kept very nearly dry. In all cases, except with subjects the tops of which die completely down, or nearly so, when water is applied no more should be given than will moisten the whole moderately in the winter season; to pour water on a plant until the soil is saturated during the winter, when at rest more or less, is as bad a treatment as can possibly be followed, especially if the soil is loose and light, as in this case the soil will hold water like a sponge. When a plant of any description is growing in a pot comparatively small, it should never be so dry before water is given as if it had a larger body of soil surrounding its roots.

Calceolarias and Cinerarias.—In addition to a moist condition of the roots, these revel in a humid atmosphere, and should never be placed on a dry surface, such as the front shelf of an ordinary greenhouse. Through the winter the best position for them is on a bed of ashes in a shallow pit, a slight distance below the aperture for the admission of air, so that it will in a measure pass over rather than come in direct contact with them. Where there is no alternative but to put them on shelves, it is well to have 1 in. of Moss spread on the shelves, which, if kept moist, will counteract the drying effects of the situation.

Richardia (Calla) needs to have the soil moist; although it is almost an aquatic, it is of such an hardy nature that it will bear to be completely dried up without fatal results, though, of course, it feels the effects of such treatment. Heliotropes, Petunias, Lobelias, Carnations, Salvias, Lachenalias, Vallotas, and Cyclamens do not require to have the soil kept quite so moist as the first-named plants, yet they should always receive water before being allowed to get quite dry.

Lilies do not need much water in the winter, but though not making much progress in their tops at this season the roots are actively at work, consequently the soil must never be without moisture, or they will receive a check that will seriously affect their flowering the ensuing year.

Pelargoniums.—The different sections of these vary considerably in their demand for water; the zonals of all colours and the bronze and white variegated-leaved kinds being mostly freer growers than the large-flowered sorts, the fancies, and the tricolors, must have the soil kept somewhat moister, but those who have not yet acquired the knowledge of the exact condition of moisture these plants like had much better err by keeping them too dry than too wet, as the latter state will cause destruction of the roots, resulting in disease from which they will be slow to recover, whilst a moderate degree of dryness will not affect them to a greater extent than slightly stopping their growth. The above-mentioned more tender-rooted, slower-growing sections, particularly the fancies and the weakest growing varieties of the tricolors, should never be watered during the winter until the soil has got so dry that little moisture can be detected in it by pressing the fingers on the surface. There is a considerable difference in the strength of growth of the yellow-leaved varieties of Pelargoniums.

Crassulas (Kalosanthes) must be watered with caution until they begin to move freely in spring, when they will need more; during the autumn and winter do not apply any until the soil has got almost dry, yet water must not be withheld too long or the under leaves will shrivel up and die, which detracts much from the appearance of the plants, yet does not usually interfere with their flowering.

Auriculas.—These should be carefully looked over at least once a week, removing all decaying foliage, weeds, and green mould from the surface of the pots. Insect pests are still active; the worst—greenfly—can be readily destroyed by fumigating with Tobacco smoke. There is also a pale green caterpillar not easily distinguished from the leaves on which it feeds that is very troublesome at this season; therefore carefully search for it and pick it off. The leather-coated grub, too, will eat the leaves rapidly; this and slugs must likewise be sought for at night with a lamp. Very small offsets put in late are difficult to winter, unless they are very carefully attended to. The soil in the pots should be kept only very moderately moist. Pull the lights off all frames in which Auriculas are growing, except when it rains.

Fruit.

When the foliage of Apricots, Peaches, and Nectarines part readily from the trees, they ought to be occasionally lightly brushed over for the purpose of bringing it down, in order that the sun and air may have full play on the trees. Push on planting, lifting, and root-pruning, as the present is the best season of the whole year for such work, a fact proved by the rarity with which trees now operated on fail to produce a full crop of fruit the following season. Gooseberries and Currants, being divested of foliage, may now be pruned. It is usual to defer the pruning of Gooseberries till spring, because birds are apt to make an onslaught on the buds, but if pruning be done now, and if afterwards the trees are splashed over with a mixture of soot and lime, with cow manure added to cause adhesiveness, the composition will not only be distasteful to birds, but only kill Lichen and Moss, which usually abound on neglected fruit bushes. When pruning, select the best-ripened wood for cuttings, which may be tied into bundles and heeled in to give profitable employment in bad weather in preparing them for insertion, which should be in rows 1 ft. apart and about 6 in. asunder in the rows. All the buds should be picked out of that part of the stem that is inserted in the ground, or there is a tendency to produce suckers, and each tree is always best when grown with only a single stem. Old plantations of all kinds of small fruits will repay any attention that can be afforded them at this season, such as the thinning out of useless naked wood, surface forking the ground, and afterwards giving it a good dressing of well-rotted manure, to be left on the surface to be washed in by the rains. Raspberries especially should annually have such a dressing. The season being so late, there are yet several kinds of Apples and Pears to be gathered, and as they are now in danger from severe frost they should be got in, ripe or unripe. Keep the fruit room well ventilated on every favourable opportunity till the fruit has become thoroughly dry, but afterwards preservative conditions are best assured by the maintenance of a somewhat confined atmosphere.

Vegetables.

Asparagus.—Tops of this will now have turned yellow, and should be removed; but, as in other cases of a similar nature, they ought never to be cut away whilst they have life in them. If there are any weeds on the beds, they should be cleared away. The beds should then have their winter dressing applied. This ought to consist of 3 in. of well rotten manure evenly spread over the surface. This not only has the effect of enriching the soil, by its fertilising properties being washed into the ground by the rains, but it also protects the crowns from frost; for, although a perfectly hardy plant, yet, like many others under a system of cultivation, it is better not to have the roots exposed to severe frost. If the alleys contain plenty of soil, an inch or two may be thrown over the manure; but the old method of sinking these two deep frequently did much injury to the roots, which grow persistently in a horizontal direction, often extending into the alleys, and when these were cut to such a depth as to throw a considerable portion of soil over the beds, the roots, of course, were more or less injured. The great mistake in the cultivation of this vegetable is in too close planting; two rows are quite enough for a 4-ft. bed, instead of three or four. There is nothing gained by close planting; when plenty of room is allowed, the heads, if they are not so numerous, are double the size, and the beds will last much longer in bearing condition.

Road Sand for Cuttings.—I have struck upwards of twelve dozen Geranium cuttings this year in a compost of three-fourths road sand and one-fourth ordinary garden mould; only three or four cuttings failed. Those I attribute more to having been put in late than to the compost; the others are looking splendid, and should really be repotted separately if I could afford room. The only objection I have to it (road sand) is, owing to its being so loose, the cuttings are very apt to fall out when the pots are moved. Mine are in pots, and yet for striking purposes the looseness is no doubt its great advantage, combined by its attracting and retaining the heat. For several years I have used road sand largely in growing Chrysanthemums, and have found it answer well, the plants presenting a most luxuriant appearance. I get mine from the gutters at the bottom of steep hills, it being carried there by heavy rains.—T. C., *Clifton*.

Worms in Pots.—I have noticed from time to time in GARDENING ILLUSTRATED lime-water recommended for this. I have tried it, but without success; but I have never seen a saccharine solution even spoken of. Some of your readers may not be aware that 1 oz. of cold water (the colder the better, as hot dissolves less) only dissolves about half a grain of lime; but by the addition of sugar it will dissolve about twelve times that quantity. Will any of your readers who may have tried this kindly state their results? or can any one say if lime-water so strong would kill the plants? I have tried

it myself, but I am not in a position to give an opinion, being A Novice in Horticulture.

Ants in Greenhouses.—I see many of our friends are troubled with ants, and so I used to be until I saw an article in this paper last year. The instructions were: Get your chemist to mix some arsenic with honey, and spread it on small pieces of glass and lay it in their runs. I have tried it, and cleared my greenhouse in one day. The glass was often covered with ants, but not one was to be seen after this treatment.

To Clean Garden Pots.—Rubbing in a basin of water or under a tap with a bit of pumicestone or broken brick, or broken garden pot, not too hard burnt, I have found to clean pots directly like new.—J. B.

House and Window Gardening.

Palms in Windows.—I have had a Palm called Kentia Canterburyana in my sitting-room window for over twelve months, and although it came in a very healthy condition from a nurseryman's greenhouse, it is now, if possible, even more healthy looking than when I had it. When I received the plant it was in a 5-in. pot, and had three leaves.

A good Window Palm (Kentia Canterburyana).

In spring I shifted it to a 7-in. pot, and now it has two other large and much more handsome leaves, and one more is just unfolding itself. It now has the appearance of the plant shown in our illustration. I used for potting ordinary garden soil free from worms, leaf-mould, Cocoa-nut fibre, coarse silver sand and bricks broken to the size of Horse Beans in about equal parts. I keep it slightly shaded from the sun, but give it all the light and air possible. After potting I gave no water till the soil was quite dry and the pot sounded hollow when rapped with the knuckles; then I placed the pot over head and ears in a bucket of soft water, and sponged the leaves with soap and water, afterwards washing them by pouring water on them for a few minutes through a fine-rosed watering-pot. I repeated this operation afterwards about once a week, except during hot weather, when the windows were kept open, when it required it twice. The pot is now getting full of roots, and I water about once a week. I shall not pot it any more, but when thoroughly pot-bound I shall give it soot water or liquid manure. I have used it as a centre-piece in a bay window, surrounding it with Begonias, Harrison's Musk, Golden-leaved Fuchsias, Mimuluses, Petunias, &c. These being now nearly over, I have some Cyclamen, Mignonette, and bulbs coming on to take their places. I have grown the following kinds of Palms also in windows, but they never gave me such credit as the one just alluded to: Areca Baueri, Chamærops Fortunei, C. humilis, Seaforthia elegans, Thrinax parviflora, Kentia australis, and Corypha australis. These species when grown in a greenhouse and with plenty of pot-room are of large size when fully developed, but by managing them in the way above described, their growth is kept within bounds.

Tuberous-rooted Begonias as Cut Flowers.—As these Begonias possess endless shades of crimson, carmine, red, pink, vermilion, and scarlet, there is a greater choice of tints among them than can be found in any other genus of flowers with which I am acquainted. In button-hole bouquets they are wonderfully effective; their stalks, however, are so slender, that each flower requires the support of a wire if it be liable to much shaking about. The best way is to cut a piece of stiff, fine wire about 4 in. long; turn one end like a very small fish-hook, and pass the other end down through the centre of the flower until the hook catches in the eye; then one turn of the wire around the stalk secures it in its place. Arranged with a few bits of Mignonette, the effect is both novel and satisfactory.—T. T.

Ivy in Dwelling Houses.—No plant does better in a sitting-room or hall than the common Ivy, or any of its green varieties. In countries where the cold is too great for the Ivy to flourish out-of-doors, it is much appreciated for house-culture. Being hardy and strong, it will bear ill treatment, but will pay for attention, and especial care should be taken not to make the rooms too hot for it; it will, however, prosper well in about the same amount of heat that the living occupants should have; that is, about 65° Fahr. Keep it cool and moist, but not too wet.

Hyacinths in Glasses.—These may be put in water now. The bulb should be placed, in the first instance, with its lower end not quite in contact with the water, which should be pure rain or pond water, and it need not be changed unless it becomes offensive. When the bulbs are in the glasses they should be set in a dark place for about a month, then gradually inured to the light, filling up the glasses as the water subsides. The bulbs will flower in the greatest perfection if placed in a cool, airy situation well exposed to sunlight, but it is usually desirable to place some at least in a warm place to accelerate the flowering period.—W. P.

Growing Hyacinths in Sponge.—Whilst reading a paper the other day I happened to see the following novel plan for cultivating Hyacinths in rooms, and it is one which I think ought to prove very pretty if carried out successfully. Having procured one of the large coarse sponges used by coachmen, I made several incisions in it and placed the bulbs in them. The whole was then put in a vase of water and a thimbleful of Rape seed was scattered over the surface of the sponge, which covered it entirely with a fine Moss-like mantle, adding greatly to its beauty and attractiveness. By using warm water they force readily and succeed admirably.—W. A. G.

VEGETABLES.

EXHIBITION POTATOES.

In answer to several correspondents I would advise any amateur cultivator who may desire to grow fine handsome Potatoes for exhibition not to limit himself severely in the number of kinds that he shall grow if he has space to place at their disposal. Some kinds will not do well in certain soils, others will. A couple of years' trial will soon settle this point, and when settled satisfactorily to the grower, some eighteen to twenty kinds should suffice, except where space will enable him to grow more largely, and exhibit in stronger classes. As a rule, however, few amateur growers can put together more than a dozen good sorts; and to get these it is necessary to have at least the numbers above named.

Taking twenty, therefore, as the maximum, I divide them into the customary divisions and class them thus: Six white Kidneys (a larger proportion of this section), are International, the finest, handsomest, and probably heaviest cropper of all the section. It produces a larger proportion of handsome samples than any other kind, and is now universally shown. It is a robust grower, a mid-season ripener, and wants quite 3-ft. intervals between the rows. In quality it is not first-rate, but from light soils is a capital winter main crop Potato. Woodstock Kidney, a yellow seedling of the International, both being the product of a cross between the Dawes' Matchless and old Cambridge Kidney, and raised by Mr. M. Fenn when at Woodstock, has growth and general character about the same as the other, but has an inveterate tendency to bloom and produce seed-balls. It is advisable to pick off the flowers to prevent the exhaustion to the plant that might otherwise result. The tubers are flattish, oval, of a brownish-white hue, first-class in quality and very handsome. Snowflake is a flattish, long-shaped tuber of American extraction, now too well known to need further reference. Covent Garden Perfection is own brother to Magnum Bonum, but earlier, the haulm growth dwarfer and quite distinct. The tubers are flattish, slightly tinted with pink. It is a capital garden Potato and of excellent quality. Advance, a seedling from an improved King of Potatoes; a robust grower, ready to lift in August; tubers flattish, square rather than oval, handsome and clear white, an immense cropper and first-class winter table Potato; very distinct. Last of the six I put Magnum Bonum, rather a coarse grower, it is true, but then it is so free from disease and produces such splendid crops of fine white Kidneys, that it would be a mistake to omit it. It should always have ample space. The tubers when about three-parts the usual size are best suited for the show table; and those shown so very largely at the Crystal Palace prove that it can produce plenty that are handsome. Of coloured Kidneys, rather a weak section, I class Mr. Bresee, a very handsome sort, of American origin; skin pale glossy red, an enormous cropper and of fair quality. This kind, being new, is yet dear, but will soon be found in all collections. American Purple, a long, very purple-hued tuber, very handsome, an immense cropper, and of capital quality. Beauty of Hebron, of the well known Early Rose family, but paler in colour, is of excellent quality and very handsome; and Garibaldi, a very red-skinned handsome Kidney, now almost universally shown. It is a good cropper, and of fair table quality. In white Rounds, I name Schoolmaster, a robust kind, tubers quite round, generally large, brownish-white and much netted; a capital Potato for general crop. Climax, the handsomest of all the American white Rounds, a large cropper and having a medium top. Porter's Excelsior: very prolific tubers, flattish, round, and very handsome indeed. Bedfont Prolific: tubers long, flattish, round, very white, handsome, good cropper; very distinct and excellent garden Potato; and Early Market: a first early garden kind, tubers handsome and of superior quality. Coloured Rounds give some handsome

kinds. Vicar of Lalcham: robust growth, tubers generally large and coming handsomest in soil of moderate richness; colour purple and very distinct. Grampian: robust spreading growth, great cropper, tubers pale red. Triumph: very early tubers, bright red; a great cropper. Radstock Beauty: very handsome, white mottled with red; and Blanchard, white mottled with purple. All these are first-class show kinds, and at present cannot be excelled. In selecting tubers at the lifting season, it is well to ignore mere bigness, and look for beauty allied to average size. A little experience will soon enable an intelligent amateur to understand the needed points in prize tubers. Do not wash when first lifted, but store in boxes in dry sawdust, and wash only when needed for exhibition. —A. D.

Leaf-mould.—No article of a fertilising description enters so largely into garden composts as leaf-mould in some form or other, perhaps as much because it is almost always procurable as that it is so useful for many purposes. Mould from tree leaves, or from a compound of leaves and litter, is of course referred to here, and not vegetable mould of any description, such as the decomposed refuse of garden crops, &c., which is a very different material, and, though a good manure for some purposes, is not a substitute for leaf-mould proper. With the assistance of leaf-mould and a little sand the gardener may reduce the heaviest and most uncompromising soil to a condition fit for any purpose. But he may also overdose his composts with it. It is quite certain that leaf-mould is often used to excess, and with no good results. It is one of the best root-producers that can be employed, and is chiefly useful on this account; but it is not a sustaining manure, and is only serviceable when mixed with soils of a substantial description. Hence it is generally used for mixing with maiden loam, whether turfy or otherwise; but for kitchen gardens or flower beds to which organic manures have been added for years it is of little value. In fact, there are many things, such as Lobelias, Geraniums, and other bedding plants, and vegetables, such as Turnips, Carrots, and Beet, &c., that never thrive successfully in a soil overladen with humus. It suits Potatoes and Peas, particularly if lime is given with it. Lettuce, Parsley, and Spinach, that grow quickly, delight in it, but it is not of great value to the Brassica tribe, unless in heavy soils. It is on the potting bench that leaf-mould is most constantly in request, being required for the majority of pot plants, and, in the absence of peat, indispensable for seed sowing. It is not advisable, however, to use it where bottom-heat is employed unless it is thoroughly decayed, and free from pieces of sticks or tree seeds, such as Oak or Beech mast. Wherever the latter is buried in heated beds or borders it generates fungi to an alarming extent. Beech leaves may be used for hotbeds, but they make the worst leaf-mould. Oak leaves are the best of all for every purpose, and next to them a general mixture is best, always keeping out Beech if practicable. Spent hotbeds generally supply the stock of leaf-mould; but one year's fermentation does not fit it for cultural purpose. It should be laid up in a heap and left till it is reduced to a fine black mould. The proportion of leaf-mould that should be employed for pot plants or beds depends upon the texture of the loam used. To our good but heavy loam here we add bulk for bulk for general purposes (not weight for weight), besides sand; this is not too much for the compost at the end of a year, by which time the mould has decayed considerably, but has the appearance still of a strong loam. Such plants as Cinerarias, Calceolarias, Pelargoniums, and Balsams thrive well in it, but with a less proportion of mould they root but slowly, and do not thrive. Light, sandy, or brown loams seldom require leaf-mould, but well-rotted cow manure may be given with advantage.—J. S.

THE GREAT REED.
(ARUNDO DONAX.)

When well grown this is admirably adapted for moist low-lying portions of the lawn or pleasure grounds, or for moderately sheltered situations in the vicinity of ornamental water. There are few hardy foliage plants that rival this in stately dignity after it becomes thoroughly established, either as planted alone, or when grouped with Pampas Grass, Chamærops humilis, or the larger Yuccas, all of which grow luxuriantly in our warm southern counties, and are invaluable to the horticulturist, enabling him to add charming variety of form to the garden landscape, and to tone down the glaring colours of our chromatic flower beds with forms that partake somewhat of semi-tropical grandeur. The plant we are now more particularly alluding to is rather difficult to establish in some localities, and on dry, barren, or sandy soils, it is as well to excavate 3 ft. or 4 ft. deep and fill in with a load or two of rich unctuous loam, in which it is generally found to thrive most luxuriantly if well supplied with water. Our illustration gives an excellent idea of the portly appearance assumed by this species. Among other places where this plant succeeds well in the south we may allude to the grand proportions which it attains at Syon House. It grows there from 9 ft. to 10 ft. high in dense masses, nearly as much in diameter, and forms a truly imposing object, none the less beautiful because uncommon in the majority of gardens. It is easily propagated by dividing large clumps, or the thick

The Great Reed (Arundo Donax).

cane-like stems may be cut down and thrown into any tank or pond where they will quickly emit growths from the latent axillary buds, and after these are rooted they may be grown on and established in positions where they are to remain. A. Donax variegata is a dwarfer growing plant, rarely exceeding 2 ft. or 3 ft. in height, each leaf being striped with creamy white. This variety succeeds in our warm sheltered gardens in the south, but it does not possess the stately appearance of the green-leaved species. The variegated form is, however, almost invaluable for the flower garden, either in the centres of beds grouped with the choicer hardy plants, or isolated on the turf. It should have a well drained position, a deep warm soil, and a slight protection over the roots in winter. In Spain and countries possessing a similar climate, the stems of this form of Arundo Donax attain a considerable height, and the leaves are broader and better variegated than with us.

ANSWERS TO QUERIES.

3385.—**Planting Vegetable Garden.**—Plant a good bed of Cabbages and Lettuces at once. Onions may be transplanted from the seed bed into other beds, 6 in. apart. Shallots may also be planted, but in most cases they will do as well in spring. The latter should be planted 6 in. apart in the rows and about 8 in. between the rows, drawing shallow drills and pressing the base of the bulbs firmly in them. The Ringleader Pea and Early Longpod Bean may be planted about the middle of next month on a warm dry site. Plant fruit trees of all kinds next month.—E. H.

3407.—**Trees for Screens.**—Form the screen with Poplars, with an outer fringe of Tamarix and Furze, with an occasional specimen of the Austrian Pine. In the pleasure grounds plant Thujopsis borealis, T. dolobrata, Cupressus Lawsoniana, C. nutkaensis, Cedrus libani, Cryptomeria elegans, Juniperus virginica, J. sabina, Picea Pinsapo, Pinus Douglasi, Retinospora pisifera, R. plumosa, common and Irish Yews, Evergreen Oaks, Planes, Limes, Scarlet Maple, Scarlet American Oak, Weeping Birch, Weeping Ash, Cerasus padus (Bird Cherry), Thorns, Laburnums, Spindle tree, Mountain Ash, Portugal Laurel; and when the shelter gets up, many of the best deciduous and evergreen shrubs will do if the soil is suitable.—E. H.

3397.—**The Polyanthus.**—Amongst Gold-laced Polyanthus, the old show section, the best are Exile, Lancer, Cheshire Favourite, George IV., Formosa, and President. These are always in the foreground, but are costly. We note, for instance, that they range in price from 2s. 6d. to 7s. 6d. each. They propagate slowly, and are somewhat tender in habit, wanting careful cultivation. Of self or fancy kinds there are the Bride (white), Viceroy (sulphur), superba (black), Conqueror (magenta-crimson), Meteor (maroon), and Cardinal (crimson-scarlet). These are also somewhat scarce, and range in price from 1s. 6d. to 5s. each. Really fine exhibition Polyanthus are yet scarce. Few mere border

kinds, though ever so showy there, can face the test of the show table. Propagation is often done with great success by dividing and re-potting as soon as the bloom is over; but we prefer the late autumn, say about this time, when the plant should be rubbed out, divided carefully with a knife, and the divided pieces be re-potted into smaller pots and placed in a cold frame, standing them on a thick bed of ashes, or else upon a trellis of woodwork raised a little from the floor of the frame. Give the plants all possible air in open weather during the winter, and the protection of a mat or two during severe weather.—A.

3396.—**Hollyhocks.**—Hollyhocks are propagated from cuttings chiefly in the spring, when strong roots throw up a number of shoots; these taken off with a small portion of the old wood soon strike freely in a little bottom heat. If put in now they would perhaps damp off. The mildew or fungus which affect the Hollyhock is best kept in check by often waterings and sprinklings. It is more the product of drought than of moisture. Rich, deep soil and plenty of moisture keep the plants growing and healthy. As to the names of a collection, that is not so easy to give, because there are so many colours in the Hollyhock, that a selection becomes much a matter of taste. Any trade grower will send a good one if a price is paid for good sorts.—A. D.

3387.—**Plants for Window Box.**—It is not too late to plant bulbs in a window box. Plant what you desire to grow at once, and surface with some double Daisies, Aubrietias, blue Forget-me-nots, or any dwarf early-blooming plants that will make the box green and gay in the spring. For summer a few scarlet Pelargoniums, Fuchsias, and Petunias behind blue Lobelias, Harrison's Musk, and dwarf Nasturtiums will make the box look gay. It is obvious that, owing to the limited root space, a window box must often be turned out and have fresh soil put into it, and, indeed, this should be done with every fresh planting if the plants are to thrive. If you do not care to plant bulbs now some half-dozen small shrubs may be planted, and a surface of Creeping Jenny or silvery Sedum.

3388.—**Carpet Plants.**—In a bed to be planted with carpet plants no taste can be worse than planting in regular rings or circles; it is stiff, formal, and without character. Run round the centre basket a series of small circles, or a chain pattern, or any plan that will give variety, using for the chain such a capital carpet plant as Sedum glaucum, and filling in the circles and half-circles with Golden Feather, Alternantheras, Sedum Lydium (green), Gibraltar Mint, Herniaria glabra, Mesembryanthemum, blue dwarf Lobelias, &c. If the rings are held of first importance, the plants may be Golden Feather, blue Lobelia compactum, Mesembryanthemum cordifolium variegatum, Sedums, grey and green, Mint, Herniaria, and the silvery Cerastium.

3392.—**Greenhouse Fuel.**—The great objection to coal for a greenhouse furnace with flue is that it creates a large amount of smoke and of course soot, thus choking the flue and greatly reducing the heat; still further, a coal fire needs more frequent stoking, as the coal will bake and get hollow. A mixture of fine coke and coal would perhaps suit you best. Of course the anthracite coal is not so objectionable on the score of smoke as other kinds. For an ordinary greenhouse flue there is danger in getting almost too fierce a degree of heat from coal solely, when once a good fire is established, the safest protection is found in a body of fire that burns slowly but surely, and does not need constant attention.—D.

3393.—**Creepers against Wire.**—The great obstruction to the growth of many creepers on wire-work is found in the tendrils refusing to adhere to the metal in the open air; further, in cold weather the draughts that circulate between the meshes of the wire seem much colder, and therefore more trying to vegetation than in the open. If the Virginian Creeper were carried up a wooden upright and along the top of the wirework, and so form a main stem, it would throw down every year a growth of several feet in length that would need no support. We find that Clematis Jackmani and its fellows will do well against wire, but these have to be cut down every year. Some of the robust climbing Roses do well; Canary Creepers will grow freely; Ivies will also, but not so kindly as against walls.—A. D.

3386.—**Flowers for Winter Blooming.**—It is useless to think of sowing seeds now to obtain plants to bloom in a greenhouse this winter. The best winter-blooming plants are Chinese Primulas; seed of these should be sown in May; Cyclamen seed sown in August to produce bloom in the second winter; Cineraria seed sown in June; all these need a heat constantly kept of from 50° to 60° to induce them to flower and keep them in bloom. All the plants are best kept in a cold frame during the summer, and put into the greenhouse in October. The range of plants that can be raised from seed to bloom in winter is limited.

3403.—**Seaweeds as Ornaments.**—I have found that the best way to preserve Seaweed is to place it between two pieces of blotting-paper, and lay on it some heavy weight, such as a book, &c. The blotting-paper must be changed every four or five days for three weeks or so. After the Seaweed is dry it may be gummed over on one side and placed on rather rough cardboard in the form of a circle, leaving a space in the centre for any appropriate text.—J. C., *Whitley*.

2990.—**Botanical Paper, &c.**—Having had many years' experience in drying plants, the plan I have found to answer best has been thus:—When collecting in the field I carry a book bound up with some porous paper, into which I put the plants as fast as I gather them. I allow them to remain in this book for about two days—this gives time for the first moisture to evaporate; they are simply strapped round, not heavily pressed. At the end of this time they are placed in the usual way, between sheets of blotting paper, gradually increasing the pressure; the advantages of this plan are, that they do not require the paper to be changed so often, and that the colours keep almost without changing. I find heavy pressure at first destroys the colour more or less. The plant when dry looks lifelike.—J. R. Neve, *Campden*.

3406.—**Climbers for Dwelling House.**—Ivies are the best climbling plants for a north aspect. Good kinds consist of Algeriensis, the common Irish, the large clouded white and Regner's broad-leaved kind. With these might be associated Pyrus japonica, Kerria japonica, and Jasminum nudiflorum, all of which will flower fairly well on a northern exposure. On the east side we would plant evergreen Roses, Ampelopsis Veitchi, so beautiful on account of the changing hue of its foliage in autumn, and such Clematises as Jackmani and lanuginosa candida. The western aspect we would devote to Gloire de Dijon, climbing Victor Verdier, and Cheshunt Hybrid Roses, Clematis Flammula and C. montana, clothing the lower portion with Euonymus radicans variegata; and the south side may be covered with Clematis lanuginosa nivea and C. rubella, Maréchal Niel and John Hopper Roses draping the lower part with Cotoneaster microphylla and golden variegated Euonymus. The Cotoneaster and the Euonymus are evergreen, and if another fine-leaved evergreen is wanted, take the Exmouth variety of Magnolia grandiflora. This should be planted on the south side, where it will freely produce its large pure white flowers, and the foliage is so handsome that it is worth planting on this account alone. The Camellia is seldom now used as a wall plant in the open air, but it is eminently adapted for the purpose, being quite hardy. It will succeed either in a north or east aspect, but must be planted in a good compost of peat and loam. When thus employed it forms a thick screen of verdure, beautiful at all times; and we should certainly devote a portion of the wall to this plant, as nothing could be more suitable for clothing the base of the walls, which, where strong growing climbers are employed generally get bare in time. Now is a good time to plant, stirring the soil deeply and well manuring it. The Camellias only should be left until July planting, just as the young wood gets firm. Regner's Ivy is the strongest growing variety.—J. C. B.

3381.—**Flowering Shrubs and Rock Plants.**—The following is a selection of beautiful hardy flowering shrubs: Hydrangea paniculata grandiflora; Berberis Darwini, Beali, aquifolium, and dulcis; Deutzia crenata fl.-pl. and scabra; Spiræa callosa, alba, and ariæfolia; Cytisus nigricans and purpurea; Pyrus japonica, grown in bush form; Clethra alnifolia, Viburnum plicatum, Weigela rosea, and Forsythia Fortunei. Flowering plants for rockwork may consist of Phlox Nelsoni and frondosa; Campanula pusilla, pulla, and garganica; Genista prostrata, Gaillardia bicolor, Thymus montanus albus, Silene alpestris, Dryas octopetala, Anemone apennina and pulsatilla, Primula denticulata and cortusoides amœna, Lithospermum prostratum, Polygonum vaccinifolium, Veronica incana, Arabis lucida variegata, Ramondia pyrenaica, Æthionema cordifolium, and any of the encrusted and Mossy Saxifrages, Sedums, and Houseleeks.—J. C. B.

3395.—**Scale on Orange Trees.**—Dissolve 4 oz. soft soap in 1 gallon of water; immerse the plant therein, allowing the solution to remain on a few days; then wash with clean water. From this time until April the scale will not increase, but the first week in that month dip again in soft soap, and should any signs of the insect show itself repeat the operation. If the plants are root-bound shift in June, and if they do not appear to need repotting top-dress with concentrated manure, and encourage them to make free growth. Scale cannot make way on healthy-growing plants; it is only when they are starved or in a bad condition generally that this pest gets the upper hand.—C.

3409.—**Oleander not Thriving.**—A course of ill-treatment has brought the plant into an unhealthy state. The leaves turn yellow because the roots are either torpid or partly decayed. You were very wrong in shifting the Oleander at this time of the year; remember for the future never to re-pot plants of woody growth after May, so that the pots get full of roots by the autumn, at which time the supplies of water should be somewhat diminished, keeping the plant on the side of dryness throughout the winter. Keep your plant now without water until the soil has quiet dried out, and then give just enough water to permeate the soil, at the same time thoroughly cleansing the foliage. In February cut back the shoots to two-thirds of their length, watering with great care until fresh shoots appear. Then turn the plant out of the pot when the soil is dry; shake away as much of the old mould as possible, and re-pot in free soil in as small a pot as the roots can be crammed into. Thus treated, the roots will come into a healthy state, and good growth will follow. When the pot gets full of roots and the weather is hot, plenty of water may be given, but up to that period water only when the soil is dry.—J. C.

3384.—**Indian Pinks.**—Indian Pinks will do admirably round a bed of Carnations, &c., and be in admirable keeping. The plants should stand the winter in a sheltered place, but it is not possible to assure that they will do so, as offtimes rains and white frosts do more harm than very severe weather.—A.

3401.—**Gnat Bites.**—A spoonful of sal volatile in half a wineglass of water and as much carbonate of soda as can be placed on a sixpence; mix together, and well bathe the bites frequently.—S. C.

3412.—**Poultry Manure.**—You might use poultry manure with advantage if well mixed with a heap of garden refuse, the accumulations of the previous winter. Mix well, turning several times before finally making the bed or heap. After the Marrows are off the material will do well as manure for Potatoes or other roots. Employed in this way poultry manure is more valuable and safer than when applied to crops in a raw state.—D.

3413.—**Briza maxima.**—One of the very prettiest of all ornamental Grasses is the Agrostis nebulosa. It is as easily grown as the Briza, but is far more elegant and graceful. Seed sown in pots in March will grow well, but the little plants should be thinned out somewhat. A fresh sowing may be made in May. When quite ripe and cut dry it makes singularly pleasing bunches for the decoration of rooms, the fine grassy fibres being each furnished with tiny knobs or seed-pods that do not fall.—A. D.

—— Sow the following ornamental Grasses or some of them: Agrostis argentea, A. nebulosa, Briza gracilis, Eragrostis elegans, Lagurus ovatus, and Isolepis gracilis.—E. H.

3398.—**The Cardinal flower.**—The roots of the Lobelia cardinalis should be treated just as if left in the open ground all the winter, where they would keep well but for the frost. Lift and shake off the greater portion of the soil and place them thickly in shallow boxes, fill in with fine ashes, and place the boxes on the floor of a greenhouse or in a cellar. The roots must not get dry, or be kept wet; of course the stems are cut down before the plants are lifted.—D.

3399.—**Cerastium Edgings.**—Old edgings of the Cerastium get brown at the bottom; it is, therefore, a good plan to shear them off closely early in the spring if wanted for a summer effect. The best plan, however, is to put in during the summer a large quantity of cuttings, and these will make strong fresh plants to put out the succeeding spring.—D.

3391.—**Rose Hips.**—It has often been proved that Hips, Haws, and mountain Ash berries have preserved colour and freshness well if buried in the soil lightly and

where moderately dry, but not absolutely so. They do not shrivel or decay so treated for a long time.—A.

—— Rose hips may be kept a considerable time when cut with a few inches of wood attached, placed in a pan of water that contains charcoal enough to keep it sweet. Discolouration may be improved by the use of a little red paint.—H.

3408.—**Flowers and Shrubs in Greenhouse Killed by Tar Varnish.**—Scrape off as much of the tar varnish as possible, and paint the pipes with lamp-black and oil, leaving a little ventilation on the house night and day till the smell passes away.—E. H.

3271.—**Wintering Chrysanthemum Halleri.**—Take off the young shoots with about three joints and insert them in sandy soil in a 4½-in. pot. They will strike root freely at the present time, and may be kept in a light window in the dwelling.—C.

3256.—**Plants for a Shady Border.**—Primroses, Polyanthus, Saxifraga umbrosa, Daffodils, Snowdrops, Christmas Roses, Myosotis dissitiflora and sylvatica and its white variety, bedding Violas and Pansies, Arabis albida, Aubrietia græca and purpurea, and Silene pendula.—B.

3273.—**Plants for a Cool Greenhouse.**—We cannot help you to a list of hardy flowers for winter blooming, but another season you should in the spring procure a few young Primulas, Cyclamens, and Cinerarias; also in the autumn (now is a good time) pot some flowering bulbs, Primroses and Polyanthus, which would be gay in early spring.—J. C. B.

3390.—**Bush Gooseberry and Currant Trees.**—First cut off any branches that hang on the ground; then carefully thin out the other branches where they cross each other, opening out the centre at the same time. Do not prune too severely, or you will cut off the fruit.—E. H.

3412.—**Poultry Manure.**—Poultry manure as it comes from the fowl house is too strong for everything. Mix it largely with refuse or soil, road cleanings and scrapings, parings and edgings of walks, &c.

3404.—**Daisies on Lawns.**—The simplest method of eradicating Daisies from lawns is to turn on a lot of children, with a woman or two to look after them, providing each one with a plain, simple implement for extracting the roots. Do the work at once, and top-dress with soot and wood ashes, or else wait till spring.

3388.—**Early Tomatoes.**—To produce ripe Tomatoes in January or February, the plants should be in existence now either in the shape of cuttings or seedlings, and they should be grown on through the autumn and till the days lengthen in a night temperature of not less than 55°, close to the glass. As the days lengthen after Christmas they will enjoy more heat. The best early sorts are Orangefield, Earley's Defiance, and Criterion.—E. H.

3402.—**Pruning Gloire de Bordeaux Rose.**—Cut back the shoots in March to about two-thirds of their length. Hard pruning does not do for these vigorous growers, which generally require two or three years to bring them into bloom-bearing condition.—J. C. B.

3411.—**Height of Geraniums.**—There is not much difference in a general way between Madame Vaucher and Christine, both of which are dwarf and compact. Wonderful, runs somewhat taller, and Lucius is perhaps rather the strongest grower of the four.—J.

3388.—**Carpet Plants.**—In the centre we would place a fine-leaved plant, such as Polemonium cœruleum or Chamæpeuce diacantha, following up with blue Lobelia, Golden Feather, Cerastium Biebersteini (white leaf), Stellaria aurea (gold and green), Alternanthera amabilis, Echeveria secunda glauca, and Sedum acre aureum.—B.

3382.—**Aristolochia.**—A light, free soil should suit this creeper, but a little manure should be added thereto if very poor. As the plant in question had made no start, take it up, shake away all the old soil, spread the roots carefully out, pressing the mould firmly round them. Mulch in the spring with manure, and water in dry weather.—C. B.

3400.—**Rose of Sharon under Trees.**—This will thrive under trees where the shade is not too dense.—C.

3393.—**Hardy Climbers for Wire Trellis.**—Neither the Ivy nor the Virginian Creeper take kindly to a wire trellis. We would plant any of the Evergreen Roses or Gloire de Dijon and Cheshunt Hybrid, associating with them blue and white-flowered Clematis. A good evergreen is Cotoneaster microphylla, which grows freely and bears bright berries in the winter.—J. C.

3290.—**Gentians not Flowering.**—There is a slight, but misleading, mistake in my answer to this, whether made by the printer or myself I know not. Instead of "it should have turf mould, with sand and some stones stuck between the plants," read "it should have turf mould mixed with sand, and some stones stuck between the plants."—S. F. M. L.

3410.—**Fungus on a Lawn.**—Give the space affected a good dressing of lime and soot in equal parts, and either water it in or leave the rain to do it. If one dressing does not suffice, do it a second time.—E. H.

3394.—**Gum Cistus from Seed.**—Much depends upon the culture in good free soil. A fair-sized specimen may be obtained the third year from seed. We would order Cistus ladaniferous maculatus.—B.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

3490.—**To Grow Belladonna Lilies.**—*Torment.*—If the soil be stiff, it should be well drained. Choose a situation such as that on the south side of a house or wall, take out the whole of the soil to the depth of 3 ft. or so, and about 6 in. of broken bricks should then be placed in the bottom. Over this some half-rotten manure should be scattered to keep the drainage open, and to form a supply of rich food for the plants to feed on. If the natural soil is not good, some fresh sandy mellow loam should be substituted or added. Should the soil be at all stiff, a few barrow-loads of thoroughly decomposed leaf soil and one or two of sharp sand should be mixed with it. Having trod this tolerably firm, the bulbs should be planted singly, or in threes if plentiful and it is desired to furnish the border quickly. In the latter case each clump should be about 1 ft. apart, and if the border is of such a width as to require a double row, the plants in the second should be alternate with those in the first. In planting, a handful or so of sharp sand should be placed round the bulbs to keep them from rotting. If planted now, or at any time during the winter, it will be necessary to protect the bulbs from severe weather by applying a good coating of half-rotten leaves, Cocoa-nut fibre, or some other unobjectionable-looking material, so as to form a neat-looking and safe kind of protection against severe frosts. Nothing further will remain to be done till the plants begin to push forth their new leaves, which they do rather early in the spring, and upon the freedom with which they send forth these during the summer the abundance or otherwise of bloom in the autumn in a great measure depends. When once they get fairly into growth they should have plenty of assistance during the dry weather by giving them an occasional soaking with clear water, and from time to time with liquid manure, as it may be required. The object that must be aimed at is a full and free development of leaf growth, and, this accomplished, an abundance of flowers is sure to follow. As soon as the foliage ripens off, it should be carefully removed, and the border cleaned and neatly raked over before the blooms begin to protrude through the soil, or they will become injured.

3491.—**Plants for Outside Window.**—What plants will keep their foliage through the winter outside a window?—HOMBRE. [Laurustinus, Laurels, Rhododendrons, Thujas, Retinosporas, and similar shrubs. In summer plunge them in the open ground, and they will be available for several years.]

3492.—**Variegated Stonecrop.**—How can I keep plants of variegated Stonecrop, which have been in pots, out-of-doors? since taking them in the leaves are falling. What treatment do they require? ought they to be repotted?—FOREST GATE. [Put them out-of-doors again; they will do no good in a room where they cannot get plenty of pure air. Plant them out or plunge the pots in ashes or soil.]

3493.—**Dividing Strawberries.**—*J. C.*—Old Strawberry roots divided and planted in good soil will fruit very well, but young runners are much better.

3494.—**Phlox Drummondi and Dianthus Heddewigi.**—I have had the above flowering beautifully all summer and autumn. Will these plants stand the winter and flower next year? or should I destroy them and sow again in spring?—YORKSHIRE. [Sow again in spring.]

3495.—**Heating a Frame.**—I have a frame 10 ft. by 6 ft., 4 ft. high at back and 2 ft. front, which I want to heat for the winter; would prefer fire-heat, not lamp. I have all kinds of plants to put in when I can settle the bottom-heat. What would you advise me to do?—AMATEUR, *Gloucester.* [Have a brick flue or a flue of earthenware pipes, or, better still, a small boiler and hot-water pipes.]

3496.—**Begonia Frœbeli.**—I have a root of this; am I to start it now or in spring.—CONTRARY MARY. [In spring.]

3497.—**Potting Primulas and Cineraries.**—*Hombre.*—Well drain the pots; disturb the roots as little as possible, and fill up with turfy loam and leaf-mould in equal proportions.

3498.—**Portulacas from Seed.**—*Hombre.*—It is of no use to sow the seed now. Sow in March in heat, or in April or May in the open ground.

3499.—**Strawberries Dying.**—I have planted 200 plants in an open bed (south-east aspect), out of which only ten have struck; the others have all perished. What is the reason of this misfortune?—NEOPHYTE. [If the runners were rootless when you planted them, but little better results could be expected. If you had pegged the runners down to the ground or put them in pots, and have let them got well rooted before separating them from the parent plants, you would not have lost ten out of the 200. If you had only consulted back numbers of GARDENING, your misfortune would not have occurred.]

3500.—**Plants among Tulips.**—I have a bed in my garden in which I have planted a quantity of early Tulips 6 in. apart. Is there anything I can put between them without crowding to make the bed look gay when their bloom will be over?—W. [Plant some young, healthy Pansies or Violas. They will give a display in summer and autumn.]

3501.—**Tomatoes Rotting.**—*E. W. P.*—Probably they were affected with the disease which has been prevalent among Tomatoes of late years. It is similar to the Potato disease. As yet we know of no certain cure or preventive.

3502.—**Deformed Fuchsia Bloom.**—*Benj. W. Green, Hawarden.*—No doubt the bloom-bud was on the cutting when you put it in the soil and the check thus given prevented proper development.

3503.—**Barberries.**—*K. K.*—The specimen sent is the common Barberry. The fruit may be preserved for garnishing; it also makes excellent jelly.

3504.—**Foxgloves and Snapdragons from Seeds.**—*S. B.*—Sow in May or June in boxes or in the open ground. Prick out when large enough, and transplant into open borders in August or September. They will flower the following year.

3505.—**Names of Soils.**—What are loam and peat? and where are they to be found?—FOREST GATE. [Loam generally used for gardening purposes is the top spit of a pasture. Peat is the top spit dug from heath land. Consult our advertisement columns.]

3506.—**Making an Asparagus Bed.**—*M. M. N.*—Dig up the ground roughly, working into it a liberal quantity of rotten stable manure, and let it remain till March. Before that time directions for planting will no doubt be given in GARDENING.

3507.—**Sheltering Grape Vines.**—Can you suggest a cheap and simple plan for sheltering Vines under glass without incurring the expense of a Vinery? I have two Vines against a south wall 11 ft. high, and occupying length of 23 ft., but find their ever bearing fruit fit for use quite hopeless.—C. S. [Have a glass case about 2 ft. wide from the wall. They are cheap and effectual. The light must be made to slide, so that the Vines can be got at. In winter the lights can be used for protecting salading, &c., and be put over the Vines in spring.]

3508.—**Keeping Lilies through the Winter.**—*L. T.*—Plunge the pots in ashes up to their rims in your cold frame. They will need no water till growth commences.

3509.—**Offsets on Auriculas.**—*E. S. H.*—These should be taken off in July when the plants have done flowering.

3510.—**Alternantheras.**—*Ferncastle.*—There are a dozen or more varieties of Alternanthera, all of which are tender and require a hothouse for their protection in winter and for their propagation in spring.

3511.—**Yellow Strawberry Leaves.**—*Vicar.*—The leaves of Strawberries in pots intended for forcing are sure to turn yellow at this time of year. Keep them in a frame, and water them when they get very dry. Introduce them to the forcing house about February, unless you want them very early. Remove all dead leaves occasionally.

3512.—**Narrow-leaved Dracæna.**—Will you kindly tell me the proper soil required for the narrow-leaved hardy Dracæna, and its treatment indoors in winter? Also will the leaves grow again down the stem in spring where they are now bare?—A LEARNER. [Let the plant remain till spring, then cut it down to within 1 in. of the soil. It will emit several shoots if placed in a warm greenhouse or window, the strongest one of which may be left and the others removed. The top which is cut off will strike root if placed in a small pot of sandy soil, made firm, and plunged in a little bottom-heat with a bell-glass over it. Cut the top just below the lower leaves. The piece of stem remaining, if cut into inch lengths and put in sandy soil in bottom heat, will make plants.]

3513.—**Wintering Lobelias.**—I cut my Lobelias down to within 2 in. of the root about a fortnight since, and they have sprouted and made very healthy and bushy plants. Can I save them through the winter without heat?—F. H. B. [Yes, if you keep frost and damp from them.]

3514.—**Fritillaria meleagris in Pots.**—*E. F. S.*—Put five bulbs in a 6-in. pot, using light sandy soil. Plunge the pots in a cold frame until the plants show signs of flowering; then wash the pots and move them indoors.

3515.—**Wintering Young Fuchsias.**—A few weeks ago I purchased cuttings of Fuchsias, and they seem to have started to grow. As they are very juicy and tender, will you tell me the best way of keeping them through the winter in a greenhouse from which frost is excluded, but which cannot be kept at more than a low temperature in very cold weather?—W. W. GRANGER. [Keep them in a light, airy position, and also keep them rather dry at the roots, and the tops free from damp. The wood will then harden, and they will be safe.]

3516.—**Bottom-heat for Cucumbers.**—Our Cucumber house, which is a span-roof 33 ft. by 12 ft., with a bed down each side, is heated by means of a flue and two rows of 4-in. hot-water pipes; the flue gives bottom heat, and the pipes top-heat; the beds rest on timber 4 in. or 5 in. above the flue. I wish to know if it would not be better and give far more bottom-heat if the timber was taken out, and about 2 in. or 3 in. of sand laid on the top of the flue on which to make the beds?—G. G. P. [If the flue is enclosed your best way would be to have a tank 2 in. or 2 in. deep made of zinc, tin, or earthenware, which, if kept filled with water, will give off regular moist heat. The slabs may remain, or slates may be substituted for them.]

3517.—**Belladonna Lilies.**—Can I safely leave bulbs of Amaryllis Belladonna blanda in a warm border out-of-doors during the winter? Also, does this Lily do best under glass in pots or in an open border?—M. C. [Cover the bulbs with 2 in. or 3 in. of ashes, and they will be all the better for being left in the ground. Belladonna Lilies flower well in pots for one year, but unless well cultivated afterwards they seldom flower satisfactorily.]

3518.—**Wintering Coleus.**—*G. G. P.*—Keep them on a dry shelf in a temperature of not less than 55° or 60°.

QUERIES.

3519.—**Renovating Pear Tree.**—I have a fine healthy Louise Bonne Pear tree; it may be thirty years old. The pruning has been neglected for years. It has made plenty of wood and blossoms freely. I have not had more than a peck of fruit in three years. The ground is 4 ft. deep with a clay bottom. How can I make it fruitful?—A. T.

3520.—**Camellias in Gloucestershire.**—Can some one acquainted with the growth of Camellias tell me whether they would be likely to grow out-of-doors in Gloucestershire? The situation is a small garden walled round, open to the west, but with no large amount of sun in the winter.—A CONSTANT SUBSCRIBER.

3521.—**Potatoes for Autumn Planting.**—I should be glad to know if either of the following Potatoes would answer for autumn planting, viz., Magnum Bonum, Bresee's Prolific, or Snowflake? and if not, what are the best kinds? also any hints as to mode of planting?—T. G. G.

3522.—**Woodlice in Pears.**—Your correspondent "B. S." speaks of the good qualities of the Doyenne Boussock Pear, and mentions the weight of three which were gathered from one stalk, viz., 1½ lb. I can also give proof of its excellent qualities, not the least of which is its bearing, not only in weight, but in quantity. I have just gathered mine, and seeing his ("B. S.") communication in GARDENING of October 9, I weighed three off one stalk, when to my surprise they drew down 2½ lb., but I could produce three of greater weight from different stems. I was surprised to find some with holes in them in which were woodlice. Can it be that they ate the holes, or only found shelter in them after the holes were made, presumably by hail? I should like to rid the trees of them. Will any correspondent be kind enough to give a remedy?—R. D.

3523.—**Rent of Garden.**—What rent ought I to pay per year to get a fair return for a garden consisting of about ¾ of an acre, walled in all round 8 ft. high, and planted mostly with Apples and Pears trained inside walls, three moderate sized frames, Vinery about 20 ft. long, and 10 ft. wide, planted with Black Hamburgh and Muscat Grapes, a small greenhouse 12 ft. by 6 ft.; the one heating apparatus heats both houses?—A NOVICE.

3524.—**Plants for Wet Soil.**—Will some reader inform me what are the best plants to put on a piece of ground which is flooded two or three times during the season?

the soil is good and not heavy. Would Parsnips do well? if so, what sort would be best for heavy cropping?—Nemo.

3525.—**Unproductive Garden.**—Will any reader kindly tell me the reason my garden does not grow good Potatoes? I planted Ashleaf Kidneys which were fine healthy sets, using guano, salt, and soot mixed together. I likewise planted some red Potatoes and Champions. When the tops died off I dug them up, and was surprised to find the tubers of them no larger than marbles, and very green. I earthed them well up and kept the ground clear of weeds whilst they were growing. The soil is a fine light loam, about 18 in. deep, with sandy bottom. It has had very little manure on it, because it is difficult to get here. I have also a bed of Parsnips and Leeks which are doing no good.—H. D. H. D.

3526.—**Grafting Potato.**—One of the witnesses before the Select Committee on the Potato crop mentions grafting Potatoes for producing varieties. Can any correspondent explain how this can be done? Is it done by grafts on the stems of the Potato? or by cutting two tubers of different kinds and placing the cut sides together? or how otherwise?—Querist.

3527.—**Large Strawberry.**—Some years ago I had a very large variety of Strawberry, which, I think, fruited late in the season. The leaves of the plant were thick and downy, and the berries were almost as large as a duck's head, but were hollow in the middle. I have made several local inquiries for this variety, but cannot ascertain its name or where to be obtained. Can any one help me?—F. H. Earle.

3528.—**Rose not Flowering.**—I have a half standard Gloire de Dijon Rose in my garden which has been planted two years and makes magnificent foliage, but never shows a single bud. Can any reader give the reason of its not flowering?—J. R. Y.

3529.—**Protecting Roses.**—I should be glad if any one could tell me what is the best plan to preserve through the winter the buds of Roses that have just begun to shoot, or have shot about 1 in. Would Fern do? or would it not be likely to weigh down and break off the tender shoot in bad weather?—E. C.

3530.—**Christmas Roses.**—Having a great fondness for Christmas Roses, I should be thankful for any information which will enable me to succeed in growing fine plants. On two occasions I procured plants from a nursery, and although they are certainly living, they are almost the same size as when I planted them twelve months ago. A suggestion offered to me a short time since was to put the plant into a bed by itself and leave it undisturbed, but other suggestions will be thankfully received.—G. B.

3531.—**Killing Tree Stumps.**—I have some Wych Elm and Sycamore stumps cut down as low as possible which are sprouting. How can I destroy them in the ground as they are?—J. R.

3532.—**Tin Boxes for Violets.**—Where can these be obtained?—M. L. B.

3533.—**Fungus in Vine Border.**—My Vines never yield a crop of Grapes. I have had the border examined, and find the soil is full of fungus. Will some one give me a remedy?—S. M. D.

3534.—**Watercresses in Frames.**—Will some reader inform me how to grow Watercresses in a frame through the winter?—F. C.

3535.—**Sea Sand for Ferns.**—Can anyone tell me if sea sand is of any use to mix with mould for Ferns?—G. H. M.

3536.—**Guernsey Lily After Flowering.**—Can any one say how the Guernsey Lily ought to be treated after it has flowered, so as to bring out the leaves? Is it possible to get it to bloom next season? It is at present in a sitting-room.—J. B. G.

3537.—**Hardy Perennials.**—I have a room over dwelling house, south-east light. Can I raise plants sown in pans (earthenware) that will bloom next season? if so, what kind of soil is necessary? and the most suitable kinds for garden about 10 yards square?—Neophyte.

POULTRY.

Fowl Keeping in Small Spaces.—On reading "North Yorkshire's" article on this subject I was considerably surprised to find him recommending Brahmas for small spaces. Of all the fowls for confined spaces, Brahmas and Cochins I believe to be the very worst which could be selected if eggs are any object. They are perpetually wanting to sit, and apparently the more confined they are the worse this peculiarity gets. I should advise "North Yorkshire" to get some black Hamburghs, try them for twelve months, and then give his opinion. We have nine hens and one cock. The hens lay on an average 150 eggs each per annum, and they get nothing in the way of food except the scraps from a family of ten people and sixpennyworth of wheat per week. They are far cleaner than Brahmas, in better feather, and in better health, and we have had for months in succession an average of 45 eggs per week at a cost of sixpence. A neighbour who has over 50 hens of various breeds now obtains (October) about two eggs per week. We have two or more daily. They get sadly neglected, left entirely to the servant, and are absolutely no trouble. Not one has wanted to set throughout the year, and we come to the conclusion that they pay exceedingly well. We have tried Brahmas, but have had quite enough of them, and do not intend to try again. When confined they are exceedingly dirty, troublesome, and an expensive luxury.—T. F.

Fowls Unhealthy.—I have some young Brahmas, one or two of which seem to mope about, and set their backs up as though they are cold, but yet seem to feed pretty well. I should like to know if any one could tell me what is the matter with them, and a remedy also.—Nemo.

Hens Laying in Winter.—I have two fine Brahma hens which I am desirous of keeping through the winter, and should be glad of any information as to how I can best induce them to lay during that time.—T. G. G.

Hatching Chickens with Hot Water.—*P. J. W.*—"Hydro-Incubation." By Thomas Christy. Price 1s. Christy & Co., 155, Fenchurch Street, London, E.C.

BEES.

Keeping Bees through the Winter.—In reply to the queries of "A Weaver," 1st, as regards the weight a hive of bees should be to have sufficient food to last through the winter, it first of all depends upon the size of hive and quantity of bees in it, a large quantity of bees needing more food than a small one. A good hive of bees must have 15 lb. net weight of food stored up to be safe for the winter and up to the end of March. "A Weaver" must find out as near as possible what weight the hive, bees, comb, brood (if any), and pollen are collectively, and if a large and strong hive, he must feed until they are 15 lb. heavier. An 18-in. flat top straw hive and bees without floor-board weighs about 15 lb. 2nd. The way I prefer to feed is, put an eke under the hive about 4 in. deep and of the same diameter as the hive, and put a feeding-pan with a wooden float in it, perforated with small holes, on the floor-board inside, and fill it with syrup. My feeders are 10 in. diameter by 3 in. deep, and made of zinc, and will hold 2 quarts of syrup, which the bees take in one night. To make the syrup, put to every pound of sugar one pint of water, and boil about three minutes; stir while boiling until the sugar dissolves. "A Weaver" must feed his bees at once, as they won't take it if the weather gets much colder. Feeding bees ought to be over by the present time. Some bee keepers prefer to feed on the top of the hive through the hole in the crown in preference to the bottom, but I prefer the bottom, and find the bees take it up longer from the bottom than the top when the weather is cold. Give it them with the chill taken off. If the above instructions are observed, early swarms may be depended upon if the queens are young ones and the hives are kept wrapped well up.

Supers.—"J. B. W.," does not mention in his query the time of year he put the supers on; most likely he was too late (unless he lives in a heather country). Near London July would be as late as he could expect them to do much good. Glass supers should be covered with a cap of cloth, but wooden hexagonal supers with small window I have always found to work best; the bees enter them more readily, and by having two sliding bars in the top which can be withdrawn when super is full, you can place one on the other, and secure a larger harvest. No ventilating hole is wanted; the bees would be sure to stop it up. Use the second hive as a cover only.—J. W

AQUARIA.

Management of Aquarium.—*Pisces.*—If you refer to the back numbers of Gardening you will find plenty of the kind of information you require.

Cement for Glass Tanks.—Take of red lead two parts, letharge one part, and a sufficient quantity of gold size to make a stiff paste. Before using, the frame must be scraped clean and be perfectly dry. The cement must be applied in a thick layer; the glass must be pressed into it firmly, so as to form its own bed in the cement, which should adhere so closely as to exclude all air bubbles. The glass and cement ought to be left for two days to harden.—G. P. Dale.

Fish for Aquarium.—Will some one give me a few hints respecting my aquarium? It holds about twenty buckets of rain water, overflowing when raining. It is in a dark corner, covered with Maiden-hair Ferns, on a shelf. I have three gold fish at present; could I keep more in this tank? and what sort of plants are best to put in the tank?—J. S.

HOME PETS.

Worms in Dogs.—In No. 72 of Gardening I saw a recipe for worms in dogs, but I cannot agree with it; being a great lover of dogs I have kept them of all sorts and sizes, from a toy-terrier to a St. Bernard. I make a point to get them not more than six weeks old, and I manage as follows:—For a puppy of whatever sort, until six months old, I omit the evening meal; the following morning I give a pill made of equal parts of Kamala powder and Areca Nut, the latter freshly ground. I weigh the mixture and give two grains to every pound weight of the dog; but no dog, be he ever so large, will require more than two drachms. I make it into a pill with flour, place it well back on the tongue, and I never have any trouble with the pups taking it. In an hour I give from a teaspoonful to two tablespoonfuls of olive oil, according to the size of the dog; repeat this every fourth or even third day until four doses have been given. This remedy is quite harmless and thoroughly effectual. Ground glass is, to say the least, dangerous, and may act in a very different way to that intended. The turpentine is apt to inflame the kidneys and cause great unnecessary suffering to our pets. I omitted to say, on no account give the dog oil before giving the pills, and let the stomach be, if possible, quite empty; any one can do this by keeping the dog a sufficient time without food according to age. The great secret in getting rid of worms is perseverance. Every three or six months dose them until two years old, then once in nine or twelve months will do according to their feeding, whether raw or boiled food. I always boil mine, and my dogs do not know the taste of raw meat. A tablespoonful of lime water in boiled milk to a puppy till nine months old will greatly tend to keep down worms.—Fannycums.

Baths for Cage Birds.—Let them have an occasional bath during the moulting season; it will do them no harm.

Canaries for Exhibition.—There are over twenty classes for canaries in a good show. "Amateur's" best plan would be to attend some first-class exhibition. He could then decide on which class or classes he would like to compete in, but if he is an amateur, unless he has plenty of time, money, and above all more than Job's patience, I, as an old hand, should not advise breeding exhibition birds.—J. F.

Food for Canaries.—Bread mixed with egg will not hurt canaries if "A Subscriber" takes care that the mixture does not go sour before they eat it.—J. F.

Pairing Canaries for Breeding.—March is the best time to pair canaries for breeding.—Canary.

—— The end of February is the best time to commence mating the birds you wish to breed from. I shall be happy to give further particulars if necessary.—J. H.

THE HOUSEHOLD.

THREE BREAKFAST DISHES.

Stewed Tomatoes.—Take ten or twelve ripe Tomatoes, put them into a small stew-pan with a pat of butter and a little pepper and salt. Let them stew gently until tender. Serve them with their own juice in a deep dish, accompanied with a round of buttered toast.

Puree of Tomatoes.—Chop an Onion finely, stew it with a pat of butter until quite tender, but do not let it take colour; then, having laid this on one side, take six or eight Tomatoes and stew them in a little butter. When tender, rub them through a sieve, put the pulp and juice into a saucepan with the Onion, pepper and salt to taste, a pat of butter, a dessert-spoonful of chopped Parsley, and a very little chopped Thyme (two or three leaves are enough); let these ingredients simmer together for a few minutes in an uncovered saucepan, then poach four eggs, place them in a hot dish, and pour the purée round them. N.B.—Thyme has a very powerful taste, and some may prefer the Parsley without it.

Stuffed Tomatoes.—Take eight or ten Tomatoes thoroughly ripe, wipe them carefully, and take off the stalks. Cut the tops off, and with a small spoon carefully scoop out the insides without breaking the skin. Have ready a chopped Onion stewed tender in butter. Then rub the pulp of the Tomatoes through a fine sieve, put it into a stewpan with the Onion, a little chopped Thyme and Parsley, pepper and salt, and a tablespoonful of boiled bacon and the same quantity of any cooked meat, both finely minced; add to these a little butter, and let the whole simmer for a short time until it thickens; then fill the Tomatoes with the mixture, cover them with some well-browned bread-crumbs, put them into a dripping tin which has been rubbed with a little butter, and let them remain in the oven until thoroughly heated. Serve on a hot dish.—N.

Uses of Borage.—Can any one advise me how to best make use of Borage? I have a quantity in my garden, and should be glad to use it as a cure for dropsy in the form of tea or anyhow. Should it be cut whilst in flower and dried, or how?—H. P. T.

Celery a Wholesome and Nutritious Vegetable.—Wash and prepare one or two heads of Celery, cut in small pieces, boil in sufficient water to cover; when quite tender thicken liquor with milk, flour, and butter (the three latter previously mixed); simmer for few minutes, then pepper and salt to taste.—Julia.

GARDENING
ILLUSTRATED.

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TULIPS.

THE common Tulip (Tulipa Gesneriana) is a native of the East, and is the parent of the numerous brilliant varieties which are used for outdoor culture. T. suaveolens and T. præcox are natives of the south of Europe, and are the parents of the kinds used for forcing in pots, including the well-known Duc Van Thol, which is sometimes considered to be a distinct species, but which is really a form of T. suaveolens. Many of the species or wild Tulips, from which so many fine varieties have been raised, are well worth growing in hardy plant borders. Greig's Tulip (Tulipa Greigi), for example, figured in GARDENING, page 69, Vol. II., is a handsome and as yet rather rare early-blooming Tulip. It is a native of Turkestan, whence it was sent by Russian collectors to the Botanical Gardens at St. Petersburg two or three years ago. Of all the known species of Tulip — and there are some twenty-six—this is perhaps the most showy and desirable as a garden plant. It blooms freely in April or May, its large goblet-shaped flowers being generally of a vivid orange-scarlet colour; but there are also purple and yellow-flowered forms of this Tulip. Herr Max Leichtlin, of Baden-Baden, by whom the plant was introduced into commerce, tells us that its bulbs are so extremely hardy that they will withstand freezing and thawing with impunity, and that even when the leaves are half grown they will endure a temperature as low as that of zero without any protection. The plant is a vigorous grower, attaining a height of from 9 in. to 15 in., and bearing flowers from 4 in. to 6 in. in diameter when fully expanded, and three or four lance-shaped, glaucous leaves with undulated margins, the whole of the upper surface being boldly blotched with purple or chocolate-brown. T. suaveolens again is a very early kind, bearing sweet-scented red and yellow blossoms well worth growing in a border of rich soil. Tulipa Gesneriana, which we now figure, is one of the finest of the species for border culture, whilst there are many other more or less beautiful. Now is a good time to plant, and, be it remembered, that when once well planted the species of Tulips need not be disturbed for years if the soil is warm and well drained. The bulbs of the garden Tulips are usually taken up and stored away in summer, but these, if left undisturbed in a warm sunny border, increase rapidly and produce plenty of fine flowers, but this cannot always be done therefore the best way is to have a reserve garden to which the Tulips can be removed when it is time to commence the summer planting. Here the bulbs will not only mature themselves, but throw off offsets which in two or three years make fine flowering bulbs. A good light and moist sandy soil is the kind of home best fitted for the Tulips during the summer. The blooming season is not near so short as is generally supposed, and between the earliest and the latest flowering kinds a considerable time intervenes. But beds of Tulips should be carpeted with small tufted or creeping plants, and there are many hardy flowering and foliage plants suited for the purpose. The White Rock Cress (Arabisalbida), together with its variegated form, the Aubrietias, Hepaticas, Primroses, Cowslip, the drooping Catchfly (Silene pendula), Pansies, early-flowering Violas, Saxifrages, the white Iberis (I. corifolia), Sedum acre aureum, the creeping Bugle (Ajuga reptans rubra) and many others make excellent carpets for beds of bulbs. When a collection of Tulips is sufficiently large to admit of its being done it is a good plan to rest the bulbs every third year by preventing them from blooming. They occupy but a small space in a reserve garden, and can be planted quite thickly. In order to grow Tulips to perfection, a light, rich, well-drained soil is required, but as their roots rarely extend more than 9 in. or 10 in. from the bulb, a position is easily made for them. They should be planted with from 3 in. to 4 in. of soil above the crown of the bulb; if planted nearer the surface and a severe winter follows, they have an odd way of burrowing to the required depth, and pro-

THE PARENT OF THE FLORISTS' TULIP (TULIPA GESNERIANA). ITALY.

ducing a fresh bulb there, to the injury of the flower. When the flowering is over, the flower-stem should be cut off, the leaves should be kept green and healthy until they wither naturally, when the bulbs may be lifted and laid in a dry, airy place out of sunshine for a fortnight or so, when the roots and leaves may be cleared away, offsets separated, and the bulbs stored in a dark dry place until October.

FRUIT.

NOTES ON PLANTING FRUIT TREES.

The best time to move deciduous trees is from the time they begin to lose their leaves until the sap begins to rise in spring. The lighter and drier the soil the earlier we should plant, in order that the trees by beginning to take root during the winter may more easily withstand the droughts of summer, to which they may be exposed. The stiffer and wetter the soil the later should we plant, in order to prevent the rotting of roots whose wounds are yet unhealed, an event probable in ground surcharged with moisture during winter.

The soil should have been trenched some time before beginning to plant, and just before planting, the surface of the soil, if poor, may have had a little manure added to it, but in general this is not necessary.

Fruit trees being rather delicate should be lifted with great care; they should never be torn up, and the roots, if resisting, cut off with the spade, as if they were superfluous organs. The preservation of the roots is of the greatest importance to the success of the operation. The greatest possible quantity of fibrous roots should be preserved uninjured.

The best time to plant is during mild, but not wet weather. Avoid planting during cold and drying winds, which destroy the fibrous roots, and also during frost, for the roots are far more sensible to cold than the stems. A few degrees below freezing point is sufficient to injure the roots of the greater number of fruit trees. Whenever we are obliged to plant in spring, it is well to take up the trees during winter and lay them down temporarily in a trench; the vegetation of the trees is thus retarded, and they will bear being planted out later.

Trees taken up in February and thus treated may be successfully planted out as late as the middle of May.

If the trees have to travel before being planted the greatest care should be taken to prevent the roots getting dry or being frozen on the way, and if the distance be great, the roots should be dipped into a rather liquid mixture of clay and cow manure, which, as it dries upon the roots, will preserve them from contact with the air, and afterwards the trees must be carefully packed, taking especial care of the roots.

The next operation is dressing the roots. Notwithstanding all the care that may have been taken, a certain quantity of the roots will either be found broken or dried by contact with the air. All these injured parts must be cut off with a sharp knife immediately above the damaged portion. The cut should be made underneath the limb, so as to let the section rest upon the soil. These wounds will heal, and the extremities will soon throw out a quantity of rootlets, replacing those that were destroyed. If we had not removed the injured parts the wounds would have become diseased and the roots unhealthy, and of no use to the tree. If we are forced to suppress a portion of the roots, then are we equally obliged to shorten the stem, in order to obtain an equilibrium between the respective extent of these two organs. As it is the extremities of the roots alone that are endowed with the faculty of absorption, and as many of these have been destroyed in transplanting, therefore must the tree develop new roots before it can recover; and as the leaves are the generating organs of the roots, it follows that a tree will recover if it develops shoots and leaves; but if a tree has lost about one-third of its roots in transplanting, and the stem remains its full length, then the small amount of sap supplied by the roots is insufficient to nourish the number of buds on the stem. These buds will expand in summer in little rosettes of puny leaves, incompetent to act in the formation of new roots. If the tree after a year's growth be taken up, the roots will be found in exactly the same condition as on the day in which it was planted; whereas if when planting the tree we suppress a portion of the stem equivalent to the loss the roots may have sustained, then the quantity of sap supplied by the roots remaining the same, but the number of buds being reduced, each of them will receive a larger supply, and will thus produce shoots and leaves fit to act in the formation of roots, and the tree recovers.

If the trees have been some days travelling and the roots are more or less dry, it is a good plan to plunge them for a day into water, to which may be added a little liquid manure. At all events it will be found advantageous after dressing the roots to dip them into a liquid mixture of clay and cowdung, completing this operation by dusting them over with wood-ashes. The development of rootlets is so stimulated by this coating, that plants thus treated gain nearly a year on the time necessary for their perfect recovery.

As to the depth at which to plant, the roots should be so placed that on the one hand they may receive the influence of the air, while on the other they should be guaranteed against drought. To fulfil these conditions the mean depth should be about 2 in., and the collar of the root should be so placed that when the soil sinks to its normal level this collar may be 2 in. below the surface of the soil. Our practice should, however, vary slightly, according to the nature of the soil. In a very light soil, and one consequently exposed to drought, the depth may be increased to 4 in., while in compact and damp soils the collar of the root should be on a level with the soil.

Trees grafted or budded low should have the junction of the graft with the stock at least 1 in. above the surface of the soil; without this precaution the graft might develop roots and the tree become a free stock. There are, moreover, certain trees, such as the Peach, when grafted on the Almond or free stock, and the Cherry grafted on Mahaleb, that must in all cases be planted with the collar of the root level with the surface of the soil. If planted deeper, the roots will frequently rot and the tree perish. It is better to plant too shallow than too deep; in the former case the roots will sink to a proper depth, whereas in the latter they rot.

In planting, a hole must be made in the ground sufficiently large to receive the roots of the trees without restraint. For standards it is sufficient to place the stem in a vertical position, but for wall trees the graft should be placed outwards, in order to shade the wounded part from the sun, as it thus heals much more quickly.

Wall trees should be so placed that the base of the stem may be about 16 in. from the wall, and the top of the tree slope towards and touch the wall. The roots should be spread with great care, and the hole filled up with fine earth or compost, so as to penetrate between the fibrous roots. The earth is then very lightly pressed; if dry it is better to water. Young trees raised in a nursery mutually protect each other from the heat of the sun and the action of drying winds. These, when planted out, are suddenly isolated and exposed to variations of temperature, and thus it sometimes happens that their tender bark hardens rapidly, loses its elasticity, refuses to expand with the swelling of the stem, and strangles the circulation of the sap. To prevent this accident, to diminish evaporation, and to protect the tree until rooted, a wash of lime, to which is added one-fourth in bulk of clay, may be brushed over the stem.

OMBU.

Free-bearing Pear.—If any readers of GARDENING should be thinking of planting Pear trees against a wall this autumn, and do not know what kind to plant, I would advise them to plant a tree or more of Glou Morceau. It is a sure bearer of fine large Pears; one fruit I had weighed 11 oz. this year, and many more near that weight; they keep well till Christmas. Trees that have been under my management for the last ten years have not failed to bear a fair crop every year. They are planted on a west wall in a gravelly soil ten miles west of London. —G. T.

Marie Louise d'Uccle Pear.—This is a dessert Pear of the highest merit. Here it is superior to, and ripens about ten days earlier than, the Marie Louise. Its flesh is fine-grained, buttery, and melting, very juicy, and richly-flavoured; the tree is quite hardy, a good bearer, and likes a rather heavy clay soil.—R. N., *Folkingham.*

Restricting Roots of Fig Trees.—Few fruit trees succeed for so long a period in a limited root area as the Fig, a fact to which the old, yet prolific, subjects that one often meets with in pots amply testify. In open air culture, on the other hand, barrenness is produced by over luxuriance and unripe wood; and therefore it becomes necessary to restrict the roots, so that short-jointed well-ripened wood may be secured. Under these conditions an annual crop of fruit may be counted on with more certainty than in the case of any fruit grown. We have here a south wall planted with Fig trees, the roots of which are effectually confined by the back wall—sunk 3 ft. deep—of a range of pits only 3 ft. distant from their stems. This narrow space is used as a foot-path, and the soil has thus become so hard that no other kind of fruit tree will grow at all satisfactorily. Yet the Figs succeed admirably, and ripen their fruit considerably earlier than those having unlimited root-room. When very heavy crops are swelling off on trees whose roots are thus restricted, a few thorough soakings of liquid manure will materially increase the size of the fruit.—J. G., *Suffolk.*

Preserving Flowers and Fruit.—Fruit and flowers may be preserved from decay and fading by immersing them in a solution of gum-arabic and water two or three times, waiting a sufficient time between each immersion to allow the gum to dry. This process covers the surfaces of the fruit with a thin coating of the gum, which is entirely impervious to the air, and thus prevents the decay of the fruit or the withering of the flower. Roses thus preserved have all the beauty of freshly-plucked ones, though they have been separated from the parent stem for many months. To insure success in experiments of this kind, it should be borne in mind that the whole surface must be completely covered; for if the air only gets entrance at a pin-hole, the labour will all be lost. In preserving specimens of fruit particular care should be taken to cover the stem, end and all, with the gum. A good way is to wind a thread of silk about the stem, and then sink it slowly in the solution, which should not be so strong as to leave a particle of the gum undissolved. The gum is so perfectly transparent that you can with difficulty detect its presence, except by the touch.

NOTICE.

months, at 24s. P.O.O. payable to THOS. SPANSWICK, 37, Southampton Street, Strand.

TOWN GARDENING.

(Continued from page 414.)

Rockeries.—A rockery is easily constructed, and should find a place in every garden if there is a suitable position for it. London Pride, Creeping Jenny, and Stonecrop will grow almost anywhere, and some of the hardiest and most robust-growing Ferns may also be tried if the situation is at all favourable, but these are apt to get very scrubby and stunted in dusty and smoky corners. If you want good Ferns, and do not mind the expense, cover a corner over with glass, so as to form a miniature greenhouse or high frame. In such a place nearly all the hardy British Ferns will grow luxuriantly; they require but little air, and should have plenty of water when in growth. For such a glass case or Fernery the best are Athyrium Filix-fœmina (the Lady Fern), Polystichum angulare, and aculeatum, Polypodium vulgare and perhaps P. phegopteris and dryopteris, but these two last would require special soil and careful cultivation; in fact, all Ferns should have good fresh soil to grow in, as they have a great objection to spent or overworked material. The male Fern (Lastrea Filix-mas) is apt to grow too large for such a case, unless this is of a good size. It does well for a rockery out-of-doors. Lastrea dilatata, the Hart's-tongue (Scolopendrium), and the Ceterach officinarum do well; but the more delicate Ferns, such as the Hard Fern (Blechnum), and the Moonworts, Adder's-tongue, the Bladder Ferns, the Spleenworts (with the exception of Asplenium Adiantum nigrum and A. Ruta-muraria), require purer air than they can get in a town. The best soil for Ferns is a light, sandy, peaty loam, with plenty of fibre in it, such as the soil from a common, or it may be made artificially by mixing about equal parts of good loam, such as is used by florists, and peat, with a little leaf-mould and plenty of silver sand. The place where they grow should be well drained, so that plenty of water may be applied to them when in growth.

Flowering Plants.—Returning to flowering plants, we think that the bedding-out system is overdone in the present day. It is very expensive, and the beds are only in beauty for a little more than three months, or four at the outside. If done at all it must be done well, only well-grown and hardened plants of suitable kinds be employed, and all of each variety must be nearly identical in height, shape, habit, &c. So we advise, do not have your garden all straight lines and regular curves of exactly similar plants, but though these are very well, and indeed desirable to a moderate extent, vary their mathematical precision by a mixed border or two and a few beds for specially favourite flowers; for bear in mind that plants never do so well as when they have a specially prepared bed all to themselves. This should be, of course, made in the most suitable position as to sun, shade, &c., that can be had, and if the bed is formed and filled with just the kind of soil in which the plants most delight, far better results will be given than where a number of different families are mixed together, and the soil, &c., has to be the best mean or average that you can strike amongst the requirements of all.

Designs for Flower Beds.—Regarding designs for flower beds, any one possessing a fairly correct eye and average amount of taste can design and cut out suitable shapes. We always merely measure and peg out the principal points, corners, &c., of the beds on the turf, take a sharp spade and cut the design out straight away without any bother of plans or patterns, and no assistance but a line for straight edges, perhaps. Diamonds, circles, ovals, crescents, and such simple shapes we consider far more suitable, especially where room is limited, than more intricate designs, though such as well proportioned stars, Greek crosses, &c., are very effective under certain circumstances.

Contrasting Colours.—As to contrasting the different colours in the beds, let every one follow his taste, as what pleases one is sometimes almost offensive to the eye of another; almost any reasonable combination, always aiming at obtaining as effective a contrast of one colour with another, will look well if well carried out. This is the one great secret of successful carpet bedding. The beds must have been well cut out, *i.e.*, no crooked lines or irregular curves allowed, and in the planting all the "stuff" must be, as remarked above, as even as possible, and have all lines, &c., as carefully drawn and filled in as you can; in fact, all in this respect should be perfect. In Nature colours harmonise far better than they do in art; as, for instance, yellow Calceolarias look very well against scarlet Geraniums in a border, and yet yellow and red contrasted in a picture are anything but pleasing. Of course two different shades of any colour must not be put together, unless where a regular gradation is employed, as crimson, scarlet, pink, blush, and white, in Geraniums or other plants, which sometimes look very well. Blue and red, and especially blue and purple or red and purple, are shocking. Some of the best contrasts we know are—red next white, such as a ring of scarlet Geraniums round a large plant of Cineraria maritima, or Centaurea candidissima, or *vice versâ*; blue and white, such as Lobelia next a row of white Verbenas or Petunias, or blue and white Verbenas contiguous; Amarantus mel. ruber looks well next a white-leaved Centaurea or Cineraria, and one of the prettiest is a row of white-leaved Geranium, as Flower of Spring, next a row of dark purple Pansy, only neither of these, the Pansy especially, do well in towns. Except in the case of carpet bedding proper, the plants should be arranged according to height, so as to slope from the centre downwards towards the sides. Something tall for the centre, a Canna or two, a group of striped Maize, or an old and large plant of Cineraria maritima, does well; then the others should be graduated in height as well as contrasted in colour. It is a great pity that the variegated-leaved Geraniums do not succeed in towns, they are so useful. But there are plenty of other things. One good design is, a purple-leaved Canna in the centre, then a ring of Cineraria maritima or candidissima, then scarlet Geraniums, then a ring of Calceolarias (yellow), and an edge of Lobelia, or if there is room get something else in between the last two, preferably white; or a large plant of Cineraria candidissima, or a clump of striped Maize for the centre, outside that scarlet Geraniums, then white Petunias, or white Phlox Drummondi, and an edge of Lobelia, or if the bed is large have a ring of Amarantus mel. ruber outside the white, and then Golden Feather for the edge.

It is of no use attempting to get such things as Coleus, Alternantheras, Iresines, &c., to grow in the smoky air of a town, though Ageratums may be made to do fairly well. And what is known as "spring bedding," lovely as it is, must not be tried either, or if it is, failure is sure to result; in short, all such things as Pansies, Violas, Alyssum, Myosotis (Forget-me not), &c., will not do any good, and it is no use attempting them.

In fine, plant your garden as thickly as you can, for some of the things are sure to fail in some way; if one thing does not succeed, try another. Plant plenty of Vines, Virginian Creeper, Ivy, and Jasmine to cover all bare walls, and put a plant of some sort in wherever it is likely to do well.

Soil.

This if often found to be very unsuitable for the healthy growth of plants. Either it is, from long neglect, want of manure, over-draining, &c., wretchedly poor, dusty and dry, and often consists more of rubbish, broken tiles, and slates, and such-like, than of anything worth the name of soil; or in damp and low localities it is often the very opposite of this—heavy, black, sticky, sodden, and utterly unwholesome. This last is far worse than the first, and can hardly be brought into a wholesome state by any means; perhaps the best way would be to burn it all if it cannot be altogether removed. In laying out a garden in town where either of these conditions are approached, or indeed in any case, by far the best thing to do is, after having settled on the plan to be carried out, to remove all the soil from the beds to a depth of 2 ft. or or 3 ft., have it taken right away, and after having made the bottom smooth and hard, put 6 in. or 8 in. of broken bricks, ballast, or good rubble of any kind for drainage; on that a layer of turf sods turned upside down, and then fill up the beds with good fresh soil from the country, varying slightly in its nature according to the class of plants desired to be grown. Good mellow fibrous loam, enriched with a moderate quantity of well-rotted manure of some kind, and if at all stiff, lightened with silver or river sand, is about the best stuff for general purposes, but the most suitable soil for each class of plant will be given in the articles on each farther on.

Turfy loam, suitable for this purpose, can be purchased in London for about 10s. per cart-load. But where this cannot be done (and it is certainly expensive), and if the soil is not utterly useless, a great deal may be done to improve it. Where it is too light and rubbishy, the beds should be dug out nearly 3 ft. deep, and at that depth a stratum of heavier, moister mould is often to be met with. If so, set it by itself, reserving only a little of the best of it to be brought to the top, as having been shut out from the action of the sun and air for so long, it is not at all in a suitable state for plants to grow in, however good it may be in itself; then if drainage is deficient, put 6 in. or 8 in. of rubble in the bottom, and over that the turf sods, as before mentioned, that is, if they can be had; if not, littery manure will do. Above that put the heavier portion of the soil, mixed with manure, and for the top 12 in. or 15 in.; use the ordinary soil of the garden, roughly sifted, all rubbish removed, and mixed with plenty of rotten manure, and, if possible, a good proportion of good fresh maiden loam on the top, or worked in near the surface. Leaf-mould (thoroughly decayed leaves) is very useful, and for most flowers is preferable to a quantity of manure, especially if this is not very old and rotten. Beds made as described will last for many years, and afford the best possible chance of success to such plants as Geraniums, Fuchsias, Petunias, &c., as well as to all kinds of annuals, though there are some plants, as Primroses, Violets, Pansies, and Hollyhocks, that prefer a closer and more retentive soil than such a plan as this would give. If it were desired to grow such as these, it would be advisable, unless the ground were naturally insufficiently drained, to leave out the drainage, and merely "trench" and manure the soil to a good depth.

Manure.—Where one has a garden in town there is no excuse for practising economy in the matter of manure on the ground of its expense. In London good stable manure can be had (fresh) for about 1s. per cartload, and can, indeed, often be obtained merely by bringing it away. Spent or used Hops can also be had for nothing, or next to nothing, at most breweries in town, and nothing can be better in the garden than these; their uses are almost countless. When fresh, they make of themselves, and with but little turning to sweeten, a gentle and useful hotbed. In this they are much superior to stable manure; every gardener knows what a nuisance the labour and delay of the frequent turnings necessary to bring manure into a sweet and useful condition is, whereas Hops require little or none of this trouble, but may be put together almost immediately, and are, in addition, never so rank and dangerous as the other. When rotted they are equal, and for some things, such as vegetables, superior to manure, when dug into the ground. When a few months old, and the fermentation is well over, a handful put over the drainage is the best possible thing in potting nearly all kinds of plants, excepting, of course, all hard-wooded subjects, for which only clean Moss should be used. When pretty well rotted, too, Hops may be used with great success for filling boxes in which to prick out Pyrethrum (Golden Feather) and other similar plants. Little or no soil is needed, except just a surfacing for small things, as Lobelias, and it is astonishing what a free, rapid, and healthy growth such plants make in this material. We always use it largely in the shallow boxes used for pricking out nearly all seedling plants, only putting 1 in. or so of soil on the top. For plunging pots in frames, greenhouses, or out-of-doors, either when it is in a heating state or afterwards, nothing surpasses it, and when very old and decayed, it is good as part of the compost for large pots or boxes, where lightness of staple is required

Tan can also be almost always easily and cheaply obtained in London and most large towns, and after a long experience we have found that nothing makes such a good, lasting, and useful hotbed for raising seeds, striking cuttings, &c., as fresh tan mixed with a smaller or greater proportion of stable manure. In the early spring, when a good heat is wanted, use about equal parts of the tan and manure, either mixed or in layers, preferring the former, and covering with 6 in. or 8 in. of fresh clean tan; it is so clean, and sweet, and pleasant to plunge the pots in, and no earth is needed. As the weather gets warmer less and less manure is needed, and in summer only a very small proportion, or none at all, is required. The superiority of tan over all other heating material is, that it is drier and more open in character, and never gets into that nasty sodden and caked condition stable manure is apt to do. It does not give off nearly so much steam as manure, thereby giving a drier atmosphere inside the frame; and especially for early work any gardener knows what an advantage that is, remembering his sad experiences of costly and carefully-reared seedlings all damped off in a single night from too much steam. What little steam there is from tan is not rank, but sweet almost from the first, so that plants or seed-pans may be placed in the frame far sooner than when manure is used. This leads us to remark that town gardeners have a by-no-means-to-be-despised advantage, viz., that the air being so much drier than in the country, damping off is not nearly such a serious difficulty. When living in the heart of London we hardly knew what damping meant. Frames were shut up close every night during the spring and no harm ensued, but on removing to the country again it took a long time to get accustomed to the altered circumstances, and many a fine pot or pan of seedlings were lost.

Potting Soil.—The various kinds of soil should be kept in bins, if possible, or in heaps, and they must be well covered with some waterproof material, and should stand on a dry bottom, impervious to worms; this keeps the soil dry in wet weather and moist in dry weather. A nice supply of nice fibrous yellow loam is of great importance, and a heap of a commoner description for ordinary purposes, well decayed leaf-mould, ditto manure, peat, and silver sand should all have a place. All should be kept separate, at least where a variety of plants is grown, as nearly everything needs a slightly different compost in which to do its best. It is well, however, to have a good heap of ordinary potting mould ready mixed. This should consist of about two-thirds good sound turfy loam and the other third of well decayed manure, with a little leaf-mould and silver sand, enough to insure porosity. If the loam is sandy, use less sand; if stiff, use more; and if it is poor, add a little more manure. This soil will be suitable for Geraniums, Fuchsias, Calceolarias, and most ordinary pot plants. For young struck plants or seedlings, when putting them into small pots use (as a rule) about two parts leaf-mould, one of loam, one or two parts of sand, and no manure. This will do for young Fuchsias, Verbenas, Primulas, Cinerarias, and Balsams; also, with more sand, for striking cuttings of all soft-wooded plants. For sowing seeds, especially fine ones, as Lobelias, Primulas, Petunias, &c., use fine leaf-mould and sand in equal parts, the finest on the top.

Potting.—Where much potting, &c., has to be done, all should be performed systematically and orderly, or a great waste of time and money will result. Unless where there is absolutely no other place in which to do it, potting should never be done in a greenhouse, neither should any heaps of soil or anything of the kind be kept there. In a greenhouse cleanliness should reign paramount; no empty, or at least dirty, pots or empty boxes should be seen. Wherever practicable, a proper potting shed should be erected, with bins for soil and manures, sand, &c.; such a place is extremely useful in many ways, especially if it can be warmed in winter a little in some way; it can then be used for storing the dry roots of Dahlias, Fuchsias, and other things, and the soil kept in such a place is always warm enough for use. Where the luxury of a potting shed cannot be had, have a bench fixed in some convenient corner of the yard or other suitable place, under cover if possible, as a sudden shower often brings a batch of potting to an untimely end.

(To be continued.)

House and Window Gardening.

Growing Bulbs in Boxes.—One of the best methods of growing Hyacinths, Snowdrops, and Polyanthus Narcissus for room decoration in the spring is to plant the bulbs at once in boxes of light, rich, loamy soil, after which they should be placed in a shady corner, and covered to a depth of from 4 in. to 6 in. with common yellow sand or coal ashes. The object of this is to keep the bulbs moist and firmly in their places until they have rooted freely into the soil, and also to protect them from any sudden changes of temperature. It is usual for amateurs to neglect this part of bulb culture entirely, and this accounts in a great measure for their non-success in bulb growing. The bulbs are bought and potted or planted in boxes, and subjected to the temperature of a warm room, a proceeding which at once causes the growth to be weak and colourless, the usual result being either puny few-flowered spikes, or no flowers at all, a state of things which is commonly accounted for by accusing the seedsman of having sold bad bulbs. After planting the bulbs, however, in the boxes, and banking them up out-of-doors with sand or ashes, then the question arises—How long they are to remain thus before they are brought into the room or window? But this is a matter of no very great importance—they may remain at least a month or six weeks, after which it will be found that the plump yellowish-green buds have pushed into the sand, a tolerably sure sign that the roots are at work in the soil below. If more than one box is filled with bulbs one can remain a month under the sand, after which the latter should be cleared off, taking care not to injure the bulb growths in the operation, and having levelled the soil about the bulbs, wash the box and place it near or in the window. The other boxes may be removed at intervals of a week or a fortnight, so as to have the flowers in gradual succession, and in this manner the room or window garden can be kept gay for two or three months in the spring. As to planting the bulbs, it is a general rule to plant Snowdrops about 2 in. deep in the soil; the same applies to Crocuses, while little more than two-thirds of the bulbs of Hyacinths and Narcissi are buried in the soil, that is when they are grown in pots or boxes. When planted in the open beds or borders, however, they are buried just like all other bulbous plants. Our illustration represents a box of spring flowering bulbs, and it is difficult to imagine a more pleasing room or window ornament during the early spring months. Of course all the bulbs named are quite hardy, and while some of the more ornamental boxes are brought inside, others—ordinary window boxes—may be placed on the sill outside, where the bulbs will bloom nearly as well as those indoors, but a little later.

Box of Spring Bulbs.

ROSES.

Planting Roses.—Those who wish to make plantations of Roses should at once set to work and make the best of the fine weather. Those who have not selected their plants should at once do so, for by planting early and giving them a fair chance of rooting, a good supply of Roses will be ensured the following season. Well-rooted, strong plants should be selected, and it is well to remember that Roses on their own roots, or on the Brier, are superior to those on any other stock. They do well on the Manetti, but their suckers often prove troublesome, and when the plants grow strongly the buds are liable to be pushed off. Where Roses are required for planting upon lawns in the form of umbrella trees, pyramids, or bushes, strong plants of the most vigorous-growing varieties should be selected, such as Baronne Prévost and Jules Margottin; the ground should be specially prepared for standards. Planted in this way, the subsoil should be taken out of a circle 5 ft. in diameter, and filled in with good drainage and plenty of good loam and rotten cow manure. Plant and tread all firm, and in placing the turf allow enough soil to admit of the turf settling down to its original level in the spring. In clearing out Rose plantations and digging borders, the long autumn-straggling shoots should be shortened back, so as to give the plants a neat appearance until the spring pruning time has arrived. Trellis or pole Roses should be slightly pruned back and tied in with the same object. Cuttings may still be made and inserted out-of-doors if required. Rose beds should be dug over and manured, great care being taken in digging between the plants not to break their fibrous roots. Carefully root out all suckers as the digging proceeds, as it saves much trouble the following season if they are now removed with a sharp knife.

Manuring Roses.—Although quite opposed to the theory enunciated in GARDENING on this subject by "D. T. F.," I am very glad it has been broached, because I consider it requires ventilation. "D. T. F." commences with a dictum with which I acquiesce—viz., Rose trees (?) want feeding;" and I also agree with him in his remark that "there is a proper time for manuring Roses," and also that they require food in a state fit for their immediate consumption, and that it shall be given at a time when the plant is capable of consuming it. But I maintain that it is useless giving a stimulant to Rose trees, or any other plant or tree, unless the roots are in a fit state to absorb it, and I also maintain that Rose trees cannot receive any benefit whatever from manure applied to them after they have, to use a homely expression, "gone to sleep." I join issue with "D. T. F." in his statement that "the roots of Rose trees are abnormally active during the winter," and I ask him to give his reason for that assertion, and to give me any other example of a plant that absorbs food given to it whilst in a dormant state. Let him dig up a Rose tree, or any other plant, in summer, and again in winter, and observe the white rootlets in the former and their absence in the latter season, and then say they are as capable of absorbing nourishment at one time as at the other. I maintain that when a plant is dormant it cannot take nourishment of any kind—the same with an animal or human being. When a plant is growing food must be given at a time congenial to their nature, and in a state fit for their consumption. Liquid manure is the food *par excellence* for Rose trees, and the bloom of a Rose tree depends very much upon the treatment the tree receives immediately after it has bloomed previously, as in the case of numberless other plants, and saturation with sewage in March or April will not be as beneficial in obtaining good blossoms as if applied in the previous July and August. To have Roses you must have strong wood, and if it is not there in March it cannot be there in June. The only way to attain this end is by liberal treatment when the tree is in a growing condition, and can absorb nourishing food. Saturating Roses in March and April, before the bloom buds show, with sewage or strong manure, would have a tendency to produce wood and leaves instead of blooms, but if given after the bloom buds show, it might assist the tree to carry a greater number of flowers, but nothing more.—CALCARIA.

Roses in Pots.—These should now be placed under glass, or in some open sheds (if glazed all the better), and if the protection of a shed cannot be afforded them the Hybrid Perpetuals should be plunged in some old tan or Cocoa-nut fibre, or in ashes, so as to protect their roots from frost. Tea varieties can be stowed away in cold pits or frames that are not in use, or, better still, in cold houses. In removing Roses to their winter quarters, select some of the best of the late-flowering kinds and place them in a cool, airy house. Water them sparingly ; remove all buds and leaves that are damping off ; dust with sulphur should mildew show itself ; and by careful treatment in this way a supply of cut flowers may be had up to Christmas. I have found good plants of such sorts as Gloire de Dijon, Madame Falcot, Madame de St. Joseph, Safrano, Goubault, Rubens, and Souvenir de la Malmaison invaluable for flowering in autumn and winter. These, under ordinary treatment, produce plenty of wood as well as flowers. Maréchal Niel should occupy a house in which there is some artificial heat in winter to encourage growth and induce the buds to expand. I have always been successful in forcing this variety, which I start in November, subjecting it to about the same treatment as that usually given to an early Vinery till the buds show themselves, after which syringing must be discontinued, as water is apt to blacken and spoil the flowers. Under skilful treatment, Maréchal Niel will produce plenty of fine flowers at Christmas and all through the months of January and February. I would recommend every one to grow a few standard Roses for winter work, and where they cannot be got from a nursery, this is a good time to lift such plants from the open ground and pot them.—H. G.

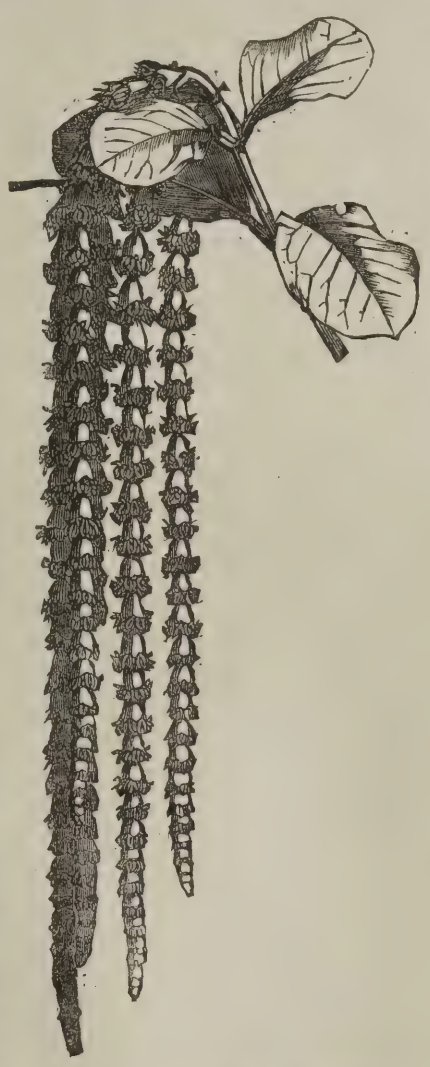
Belle Lyonnaise Tea-scented Rose.—This nearly equals Maréchal Niel in usefulness. It has the habit of Gloire de Dijon, but is very superior to it in colour, being a deep canary-yellow. It is, in short, a first-class Rose for indoor culture. The characteristic of this Rose is, it always seems to bloom late, while Maréchal Niel prefers showing its beauty in spring. As an autumn-blooming creeper it may be strongly recommended.—C.

THE SHRUBBERY.

Berberis Hedges. — Berberis asiatica thrives well in isolated positions, and also as a background shrub, as it grows rapidly and fruits most freely where exposed. As a hedge plant it is unequalled for rapidity of growth and general appearance. We have hedges of it here many years old, carefully shorn, and varying from 2 ft. to 6 ft. in height, according to circumstances, as in many cases it forms fences to the gardens of our cottagers ; such hedges should be shorn twice a year, viz., at the end of June or early in July, and again at the end of February. By the summer shearing the plant is made almost an evergreen, as the autumnal growth retains its leaves much longer than it otherwise would do ; as a field hedge, the winter shearing would be sufficient. Should the hedge be neglected for a few years, it naturally grows upwards, and gets naked at the bottom, a fault that may be readily and completely remedied in one season by cutting it down to the required height. Young stock of this Berberis is easily raised from seed. —J. G., *Exeter*.

Hardiness of Fever Gum Trees.—I have frequently seen questions in GARDENING regarding the hardiness of Eucalyptus globulus. Last February I obtained from a nursery two seedlings a few inches high, and at once planted them out in the open border. This was cruel treatment, especially in a Scotch climate and during such bitter weather. Both plants were sorely pinched by the severe cold and biting east winds, but survived, and have during these eight months grown into two handsome young trees 6 ft. high, their beautiful glaucous foliage standing out most distinctly from all else in the herbaceous border. From both having stood such a severe test last winter when so young and tender, and when they were transplanted from the hothouse without hardening, I have a good hope they may prove quite hardy, more especially as the lower part of the stems have acquired a tree-like bark. I am not aware of such a severe test having been made, and so send you this for what it may be worth.—W. T. B.

A Winter-flowering Wall Plant.—Garrya elliptica is one of the most attractive of all ornamental-flowering evergreen shrubs. It grows from 6 ft. to 10 ft. high, and has a rather dense and spreading head, furnished with numerous slender shoots, which are downy when young, but quite smooth when fully matured. It is a native of North-west America and California. It is easily increased either by layers or by means of cuttings of the half-ripened shoots, and grows freely in any good garden soil. The leaves are somewhat oblong, with a small acute point, thick and leathery in texture. The flowers are arranged in pendulous catkin-like racemes, as shown in the accompanying illustration, and are produced from December to March. It may be grown either on a wall or as a bush. Its long greenish-yellow pendulous catkins are useful in winter decorations.



Winter-blooming Shrub (Garrya elliptica).

Improving Clay Soils.—I have been reading GARDENING ILLUSTRATED for Oct. 16. I see it recommended by F. Nash to burn clay and mix with the soil with a view to improve it. My experience is that this is the best thing to do with it. I have had 15 years in a clay garden, so I think I can speak with some authority, for I believe ours is the worst specimen of clay ground I ever saw ; but I cannot agree with F. Nash as to the way to do it or the man he is going to employ. I may say our place is in the immediate vicinity of several brickfields, and I feel sure a man may burn bricks all his life and still be ignorant of burning soil, neither could he burn it in the way he suggests, viz., with chips. He may burn a small quantity, but to make a good job of it, it requires small coal. We use what we call the Forest Slack ; it costs about 7s. per ton. Now the way we do it, and experience tells me it is the best way, is as follows : Supposing we have a heap of clay, say from foundations or elsewhere, we get a barrowful of chumps of wood and place them carefully in a heap and set fire to them ; as soon as the chumps are lit we cover them over with not more than 6 in. of clay, taking car «to put it on as lightly as possible ; as soon as the fire has burned through, on no account before, we give the heap a slight sprinkling of small coal, then add another 6 in. of clay. In the morning if the whole mass is burned through we rake back the unburned from the bottom of the heap, and with a tool we have for the purpose we draw the fire out wider, and immediately the fire is drawn give a sprinkling of coal ; then throw in what was raked back with more clay from the heap. Great care is required not to put too much on at a time until you have three or four cartloads; then you can put on more clay, but be sure and draw the fire every morning, else there will be clinkers in the middle of the heap. It is a good plan to knead the clay if it has been exposed to the weather.—J. ROGERS.

GLASSHOUSES & FRAMES.

CHRISTMAS FLOWERING GREENHOUSE CLIMBERS.

IN a greenhouse light and warm, say from 45° to 50°, I find no difficulty in having climbing plants to flower in it at Christmas ; but if the roof were densely covered with creepers, it would interfere with whatever is growing underneath, and in that way I should lose as much as I gain. However, there are many plants that may be trained thinly on the roof and yet give plants growing beneath a fair amount of light, and first and foremost may be mentioned Tropæolums of the small-leaved Lobbianum section, young plants of which turned out in spring and trained thinly over the roof during summer will hang about and keep the house aglow with bright flowers throughout the winter. A few of the faster-growing Tea Roses might be planted along the front, and afterwards led here and there up the rafters. Habrothamnus elegans and fascicularis are capital plants for walls, pillars, or for training up the rafters.

Some Fuchsias, again, when pruned back early in August, if planted out in a good border, flower splendidly in winter. Dominiana, Carolina, Venus de Medici, and an old double variety called grandiflora plena I have had do splendidly when treated thus. I have also had some of the stronger-growing scarlet Geraniums, such as the old Giant and others, planted out in a well-drained border and trained up to the roof, flower better in winter than summer, because the trusses lasted so much longer. It is astonishing what a time a truss of scarlet Geranium will keep in good condition in a light, well-ventilated house, and, of course, in winter there must be a fair amount of artificial heat to admit of the necessary ventilation if the flowers are to be kept in good condition. Heliotropes may be shortened back and treated the same as Fuchsias for winter flowering.

Luculia gratissima, if trained against the end or the back wall, will fill the house with its delicious fragrance in the months of December and January. Begonia fuchsioides looks exceedingly bright and pretty in the front of a warm greenhouse, trained up to the roof with a single stem, and then allowed to extend itself. Several of the Veronicas of the Andersoni section in the same way, trained up the rafters, have a pretty effect.

Tacsonia mollissima and T. Van Volxemi are exceedingly handsome fast-growing creepers, and very rarely out of bloom. By training the main stem to the rafters or girders of a conservatory, and allowing the young shoots to depend thinly from them, they show off their beautiful flowers to great advantage. We have just now a plant of mollissima, growing in the manner described above, that has been flowering continuously all the summer, and, from the number of buds it is now showing, it promises to be almost equally good during the greater part of the coming winter. This variety has trumpet-shaped flowers, the tube of which is about 4 in. long and of a delicate pale green

colour, which shows off the beautiful pink petals to great advantage. T. Van Volxemi is a strikingly beautiful variety. It has large crimson flowers that are borne on thread-like stems, which vary from 12 in. to 18 in. in length, and, as these occur at almost every joint, some idea of the effect produced by such a number of flowers depending in this way may readily be formed. Although not so vigorous as mollissima, it is sufficiently so for ordinary purposes, and will cover as much space in a season as can generally be devoted to one variety. Tacsonia exoniensis is a hybrid between the varieties above named. The flowers are of a deep rose-pink colour with violet throat, and it possesses the good qualities of both parents. Unfortunately, most of the Tacsonias are rather subject to scale, which, if not looked after and kept in check, increase to a great extent, and soon throw the plants out of health, but as these pests are mainly on the stems, they may be destroyed by using a stiff brush and some of the insect-destroying compounds. With a little care and management a greenhouse roof may be made to assume a very gay appearance in winter without materially injuring plants beneath the climbers. Of course, with plants in flower the watering-pot must be used cautiously, so as to keep the atmosphere of the house nearly dry. H. J. S.

Winter Tree Carnations.—In a collection of a dozen sorts of these useful plants we find Zouave, Covent Garden Scarlet, Valiant, and Miss Jolliffe to be the freest flowerers in winter. The colours of the three first consist of different shades of scarlet. The last is a beautiful pale pink variety, and most deliciously scented. Good bushy plants of these in 5-in. and 6-in. pots are now supplying us with fine blooms. They are growing in a light airy house in a night temperature of 50°. We propagate a stock annually, dividing it into two sections. The first is introduced into heat early in March ; the second late in April. The cuttings are taken from plants in a growing state, and about a dozen are dibbled into a 5-in. pot in a compost of two parts sandy loam and one part each of well-rotted leaf soil and silver sand, surfacing the pots with half-an-inch of sand. We then plunge them in bottom heat in a close frame or pit, keeping them shaded during sunshine, and damping them over daily with a fine syringe. As soon as they are rooted we pot them off into 3-in. pots in the same compost as has just been mentioned, replacing them in the pit until they have become established ; they are then gradually hardened off in a cold pit as soon as the bedding plants are removed from some turf pits which we have. When the Carnations are potted into their blooming pots we use a compost of two parts friable loam to one part leaf-mould and pigeon manure in about equal quantities. A small Hazel stick, about 2 ft. long, is put to each plant, to which they are tied as they grow. They are then set on a bed of ashes in the turf pit ; this is done, say, the first week in June. The treatment from that time until they are housed in September consists merely in seeing that they do not suffer from want of water. They should be protected from heavy rains with some old sashes, but they should be gently syringed in the evenings of hot sunny days. By following the above treatment we have not been without Carnation blooms for a week during the past three years, and the prolongation of the fragrant bloom of these Carnations through the winter and spring months constitutes one of the most gratifying successes of our indoor gardening.—C. J.

Winter Propagation of Flowering Plants.—Many plants are better propagated in winter than at any other time. For years past I have planted all my Pansy cuttings in November. Hardy Fuchsias, Carnations, and Picotees will all, or nearly all, root if treated thus. I have also seen a house full of Tea Roses, all of which were raised in the same way, scarcely one having failed. Calceolarias, of course, should be always so treated, the advantage of this system being that you have merely to prick them out thickly in a frame, and leave them alone until spring, no attention whatever being required in an ordinary way. Hand-glasses also serve the purpose very well. Nothing, of course, that is really tender will endure this treatment, but it is astonishing what an immense number of plants may be successfully raised thus. The frame should be kept close until spring, and there is no necessity for sheltering with nets.—D. A. W.

Coprosma Baueriana variegata.—This is one of the prettiest of subjects for greenhouse decoration during the winter months. The variegation is very clear and constant, the culture very easy, although to obtain a really good specimen some little pains must be taken in the earlier stages of growth. This plant naturally assumes a somewhat dwarf spreading habit, thus fitting it for basket culture. A good, well-furnished specimen proves a very effective ornament to the conservatory. When grown in pots, the most important point in its culture is to obtain a well-furnished base by means of frequently stopping the points of the young shoots. A few sticks being inserted around the edge of the pot, the shrubs may be trained to them in such a manner as to form a compact, well-furnished specimen. This plant is very effective by gaslight, and should be grown by those requiring plants for such a purpose.—J. C., *Byfleet.*

Erica persoluta alba.—This is a very useful Heath either for general decoration or for cutting from. Little sprays mounted on wire are of great service in bouquet making. It is of easy culture, and may be grown to perfection by anyone having the convenience of a cold frame. This is about the only species of Heath which will bear forcing. Placed in gentle warmth in November, it comes into bloom by the beginning of the year, the warmth having the effect of increasing the purity of the flowers.—J. C.

Spring Flowers.—Both Russian and Neapolitan Violets are especially suitable for frame culture ; plants that have been prepared in the usual way by being planted out should now be placed in 6-in. pots in ordinary loam, and the soil made tolerably firm. Hyacinths of different colours should be potted and treated as has been advised for greenhouse use. With these may be included Scilla biflora, S. hyacinthoides, and S. sibirica, charming little plants that will flower beautifully in pots. Some Lily of the Valley should also be prepared. It will come in several weeks earlier than in the open ground. The imported roots, as now sold in selected crowns, are the best ; or if the amateur happens to have plenty of this fragrant favourite growing, he may take some up forthwith, choosing the blooming crowns. These may be readily distinguished, by their thick plump buds, from the weaker ones, which should at once be replanted in an open situation in rich soil, to grow stronger for another season. A 6-in. pot will hold a dozen of these flowering crowns. A dry, sheltered, sunny situation should be selected, and the warmer it is the earlier will the plants flower, as every additional ray of sun in the spring is a gain to them when managed in this way. For this reason let the frame slope considerably to the south, and to effect this, raise the ground at the back. On this place 8 in. or 10 in. of ashes, on which to stand the pots. Thus elevated on the dry material, the superfluous moisture from watering will drain off. Do not by any means lower the ground, for the loss that ensues through the inevitable accumulation of damp is much greater than the gain. Pack round the side and ends of the frame 18 in. of dry leaves, laying them up level with the top all round ; on this place boards, made to overlap each other at the corners, and then nailed ; let them fit with their inner edges close to the frame on all sides, and slope outwards a little, so as to throw off the wet. The lining of leaves, kept dry, will ward off a good deal of frost. As this lining settles during the winter, have in readiness more leaves to replenish it, and round the sides put 1 in. or 2 in. of litter, to prevent their being blown about, and drive down a few stakes, at intervals of 12 in. or 15 in., to keep all in its place. Give more or less air, according to the temperature, on all days when it does not freeze. Use no more water than is necessary to keep the earth in the pots in a sufficiently moist condition, which may be best described as being between wet and dry, or so that it will not soil the fingers much when compressed in the hand. When there is an appearance of frost in the evenings put mats over the glass, and secure them from the action of the wind by weighting them with pieces of board. Later on in the winter place 1 ft. of litter on the glass over the mats, and a wooden shutter over all. This will keep the litter dry, and hold it in its place. From a large frame or frames filled with plants of this description, and managed in this way, amateurs may enjoy, through the early spring, a quantity of beautiful flowers; whereas, if they attempt to winter Pelargoniums, or similar tender greenhouse subjects that suffer through damp, they are almost certain of disappointment.—B. T.

Kalosanthes coccinea.—There are few more showy, and at the same time more sweetly fragrant, plants than this. To grow and flower it well was at one time considered a creditable feat, though its culture is not a difficult matter. It is one of our oldest and finest greenhouse plants, and sometimes it is planted out during the summer in the flower garden. Cuttings of its succulent shoots struck now, potted off the following spring, and allowed to grow all the summer in any light, airy structure, or in a warm exposure out-of-doors, flower the same year. Like most of its class, it strikes freely, and the young plants may be potted singly in 6-in. pots in a compost of loam and sand chiefly, mixed with a proportion of broken potsherds and charcoal. The shoots are better not pinched ; but if tops be chosen for cuttings which are just breaking into a number of shoots, as they often do, pinching will not be necessary. The great point as regards the summer culture of plants of Kalosanthes is to get their growth well ripened, and with this object, in the south at least, and even in the north, it is a good plan to plunge them in a warm border in front of a hothouse, where they will get all the sun and heat possible ; in such a situation they do almost better than under glass. Water should be regularly, but sparingly supplied, and towards August they should be kept rather dry, to induce the formation of flower-buds, when they may be introduced to the conservatory and placed in a good light. The Kalosanthes is from the dry slopes of the Cape of Good Hope, and, as might be expected, the successful flowering of it depends very much on exposure to the sun and air, together with a limited supply of moisture. In order to increase the heat about the roots, I have seen the plants plunged in a bed of sand formed close to the front wall of a plant stove, where between the heat that struck outwards from the pipes inside the house and the sun together, they were subjected to a temperature that would have been destruction to many other subjects, but which suited them admirably.—S.

Arrangement of Cottage Gardens.—In the arrangement or laying out of cottage gardens several advantages will be obtained by growing the fruits and vegetables separately, that is, not intermixed, as at present. In the first place there would be a saving of labour, as the groups or patches of fruit trees would not require the same amount of manuring or digging as should be given to annual crops of vegetables only. If the ground occupied by fruit trees had been thoroughly trenched and prepared before they were planted, after the first half-dozen years little beyond surface culture and cleanliness would be required. Another advantage possessed by this system of grouping would be the shelter it would give, for by planting the Apples on the windward side, and afterwards the Pears, Plums, and Cherries in rotation, the hardier trees would shelter the tender kinds, and fruit trees in spring often suffer as much from cold, cutting winds as from actual frost. I believe the subject—separating the fruits from the vegetables—fully merits the serious consideration of all who contemplate making new gardens or renovating old ones. I should have no objection to low espaliers of Gooseberries or Currants, as they might be planted close to the walk and be utilised for edgings instead of Box or anything else equally unprofitable. It may be thought that there is a saving of space by growing fruits round vegetable quarters, but this is a mistake, and both the fruits and vegetables suffer by being intermixed ; and this will be more apparent where the soil and climate are unfavourable, though of course espaliers are less objectionable than any other form, as they occupy less space and consequently shade less. Wherever the garden is irregular in shape—which many cottage gardens are—the fruit trees might be so arranged as to leave the plots for

vegetables, either square or oblong, with the longest side facing the south where convenient, as with most crops there is an advantage in having the rows of vegetables run north and south, so that the sun may shine equally on all sides of them. Late Peas in very hot weather might form an exception to the rule, especially if several rows be placed side by side, which, however, is not the best way of growing them. The question as to the number and width of the garden walks must in the main be decided by each individual occupier, who will no doubt be guided by the extent of his garden, which if it be small may simply be intersected by a path down the middle, or if large a path round the outside in addition; but no more walks than are absolutely necessary should be made, and those should be well formed, so that they may at all times be dry.—E. H.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 8.—Sowing Sangster's No. 1 Early Emperor, Little Gem, and Laxton's Alpha Peas; potting Lily of the Valley, and shifting herbaceous Calceolarias into 6-in. pots; planting some Cherry and Rose trees; putting in Asparagus to force, keeping it at from 58° to 60° night temperature: making hot-bed for Rhubarb, Lily of the Valley, and Hyacinths in a dark shed; putting glass over Lettuces for the winter; taking up Salvia patens and getting all Dahlias into a cool, dry cellar; making mounds of soil ready for planting Cucumber plants; giving Strawberries a good dressing of burnt earth; making ground ready for Mint; clearing dead leaves off bedding Pelargoniums, &c.; pruning espalier Pear trees; getting pit cleaned and whitewashed for early spring Cucumber plants; carefully keeping lean-to Cucumber-pit not higher than 68° at night and from 70° to 72° by day with fire-heat, as more warmth seems to induce disease.

Nov. 9.—Potting Japan Lilies in peat and sand, and putting them into cold pits; planting Boxedgings; taking up and potting Hollyhocks—any sorts that have not struck freely; arranging Heliotropes, Pelargoniums, and Primulas, and keeping the temperature for them at 50° to 53° at night, to induce them to flower; nipping blooming shoots off Calceolaria cuttings: emptying rubbish yard, and carting its contents to garden to dig in.

Nov. 10.—Sowing Early Long-pod Beans; planting various kinds of Pears, Plums, and Apples; putting all Cauliflowers not fit to cut in cold lean-to house; putting in plants for forcing, consisting of Roman and other Hyacinths, Narcissi, Van Thol Tulips, Persian and other Lilacs, Briers, Azaleas, Roses, Rhododendrons, Rhodoras, Vermilion Brilliant Tulip, Deutzia, and Pinks; tying up Lettuces and Endive in frames to blanch; protecting Globe Artichokes; getting Cauliflowers coming in too fast hung up in cellar; getting leaves into forcing pit for bulbs, &c.

Nov. 11.—Planting a border of Lily of the Valley; getting Peach trees in pots into their places; top-dressing them with two parts loam and one part manure, ramming the soil down hard; tying espalier Pear trees; laying Broccoli; painting Vines and loosely tying them up ready for starting; fumigating all Orchid houses for thrips and fly; putting litter over Lily of the Valley in pots; top-dressing pot Vines with bone-dust, loam, and manure; beginning to manure Asparagus beds; getting broken glass repaired where necessary; repairing all verges; clearing Ivy from Yew trees where it reaches the branches.

Nov. 12.—Sowing Mustard and Cress regularly in boxes; potting Roses, Solomon's Seal, and White Pinks; putting Seakale in bin in Mushroom shed to blanch; plunging some Lilies and Hyacinths in bottom-heat; beginning to nail east and west wall trees; placing protectors over Lettuces, Endive, Violets, Stocks, young Cauliflowers, &c.; covering up a little Seakale so as to be able to get at it in frosty weather; also Jerusalem Artichokes, so as to enable them to be got up during frost; washing Gardenias; giving Cucumbers a top-dressing of turfy loam and sand; soiling over the Asparagus beds; ridging-up vacant ground; pruning and tying Raspberry canes.

Nov. 13.—Potting Lilacs, Guelder Roses, Laburnums, Ribes, and Azaleas—plants that have been prepared for forcing; putting Schizanthus and Humeas in 8-in. pots; potting plants of Spiræa Ulmaria for forcing; putting Mimuluses into flowering pots, also Mint and Tarragon and Balm for forcing; planting Horseradish; nailing Plum trees; wheeling leaf-soil on to herbaceous borders; plants in flower—Chrysanthemums, Primulas, Cinerarias, Monochætum ensifolium, Heliotrope Florence Nightingale, Begonia parvifolia and B. incarnata, Cytisus, Erica hyemalis, Gesneras, Mignonette, scented, scarlet, and Lady Plymouth Pelargoniums, Fuchsias, Coleus, Gardenias, Narcissi, Schizostylis, Amarantus, Scutellarias, and Stocks.

Glasshouses.

Azaleas.—The length of time during which these plants may be had in flower has induced many growers to vary their treatment, so as to very much prolong their season, instead of letting them come in through the influence of sun heat during April and May. Such plants as were purposely retarded to bloom late should now have completed their growth and formed flower-buds; and plants that have been hitherto the earliest to flower should at once be put into heat, but in no case ought they to be hurried by submitting them to too much warmth, or allowed to stand far from the glass overcrowded with other plants.

Winter-flowering Heaths.—We often hear complaints made by those who annually buy in a stock of these winter-blooming Heaths, that they are very liable to die off towards spring; this may in some measure be due to the treatment they have received at the hands of the growers with a view to give the plants a vigorous, luxuriant appearance; but it also is often caused by their being crowded together amongst other plants, where they labour under a deficiency of air and light. Heaths cannot bear being kept too warm, and where greenhouses are kept through the winter at a temperature of 45° in the night, Heaths of the above description are sure to suffer unless they are all but touching the glass in the lightest pits or houses it is possible to erect. The luxuriant profusely flowered condition that well managed plants of this character have when sent out by those who grow them largely for sale is simply the result of two or three years' high and careful cultivation; the balls of earth the pots contain are complete masses of densely packed roots that, if ever allowed to suffer from want of water, are sure to be so affected as to cause their almost certain destruction. This points to the necessity for continued watchfulness as to their requirements for water, and where there is an inclination to do anything with them beyond simply flowering and then discarding them, as is generally done with Hyacinths, constant attention to their wants is indispensable. The stock should be looked over every ten days, and where the slightest trace of mildew can be found the plant should be dusted with flowers of sulphur, or syringed with water impregnated with sulphur; where either are used it is necessary to be particularly careful that neither the sulphur nor the water in which it is held in solution gets to the roots.

Lachenalias.—There exist many varieties of these, the flowers of which range from white, rose, orange, red, and yellow to the colours of the well-known L. tricolor, with its combination of red, yellow, and green. Where a sufficient number of plants are grown they may be had in flower over a lengthened period by forcing some, allowing others to come on in an ordinary greenhouse, and retarding another portion in cold frames, with just as much protection through the winter as will keep them from being frozen during hard weather; for though nearly hardy it is better not to let the frost reach them. The following varieties are very useful, viz., L. fragrans, the flowers of which are red and white, sweet-scented; L. pustulata violacea, violet; L. quadricolor, orange, red, and yellow; L. tigrina, white; L. tricolor, one of the freest bloomers, coming in early; L. pendula, red, tipped with yellow and green; this with me grew stronger than most of the others. There are several more, but these fairly represent the family.

Chrysanthemums.—These, where not already indoors or under protection of some kind, should at once be got in. Now when the buds are considerably developed, the plants collectively are less liable to receive injury, even when put with ordinary greenhouse stock, than when only just about formed. Wherever they are placed give them as much air as can be admitted with a due regard to the other plants associated with them. Where some of the latest-flowering kinds are grown with a view to keeping them back as late as possible, there will be no difficulty in doing so where there is a house with a north aspect with a full volume of air night and day, except where there is an appearance of frost. These will not open their flowers before the latter part of December, when, if the buds are well thinned and all suckers kept removed from the base of the plants, they will be alike useful for general decoration and cutting.

Eurya latifolia variegata.—There is not a greenhouse in the country, large or small, into which this plant might not be introduced with advantage. Its handsome leaves—about the size of those of an Orange—are richly variegated with creamy white. It is a good grower, and has an equally pleasing appearance in a small and large state. Though nearly hardy on a wall in the south of the kingdom, it seems most at home as a greenhouse plant. It is now cheap enough, and is easily propagated; points of the shoots of this summer's growth taken off now with three or four joints, and placed in a cold pit or house, covered with bell-glasses, and kept moist, will have their base well callused over in the course of three months, when, if put into a little heat, they will root immediately; they can then in the spring be potted off and grown on.

Euonymuses.—Although these are quite hardy in most parts of the country, and the majority of them ultimately grow to a large size, they are among the most useful plants for pot culture that can be grown, especially the variegated kinds; the ease with which they can be propagated and grown admits of their being used in quantity for decorative purposes in halls, porches, verandahs, and window boxes for the winter, in all of which positions their bright handsome foliage almost supplies the place of flowers. Cuttings taken off now made of the young shoots, and inserted thickly in pots plunged in ashes and kept in cold frames through the winter, just protected from frost, will root in the spring with or without artificial warmth, but if assisted with a slight hotbed then it will much help the season's growth. When well rooted they should be planted out in rows in well prepared, free soil in a light situation, in which, by the end of the second summer, they will have made good bushy plants ready for potting off. Any of the erect-growing variegated forms are suitable for the uses here recommended.

Shrubs for Forcing.—These, which may now be taken up, should include Rhododendrons, selecting for the purpose the early-blooming kinds. Quite equal to these Rhododendrons are the Japanese varieties of Azalea mollis, which are great improvements in size and substance on the Ghent sorts; they are better adapted for using as pot plants in this way than for blooming out-of-doors, as, except in the most favoured localities, they have a disposition to flower before danger from spring frosts is over. The hardy Azalea (A. amœna) and the Ghent varieties are excellent forcers. Kalmia latifolia, Laurustinus, the double-flowered Prunus, Deutzia gracilis, Lilacs, and the Guelder Rose all answer well for this purpose, and are very serviceable in helping the supply of ordinary greenhouse plants. They are especially to be recommended where the means at command in the shape of houses and pits solely devoted to plant growing is insufficient to keep up the requisite supply, as in many places during the winter season there are mid-season and late Vineries and Peach houses where such plants can be placed out of the reach of frost and snow, and where they will be slightly encouraged to come on into bloom, and be in a better condition for introducing to the forcing house than if left out in the open air.

Flower Garden.

Carnations and Picotees.—See that all newly-potted plants are kept moist at the roots as soon as new rootlets are formed, and the frame light should be rather more tilted as the plants seem to become established. In a fortnight or so after potting, the lights, when the weather is fine, may be removed altogether. Fumigate the plants after they are established, as a preventive of green fly. There are several methods of fumigating low frames, but the following plan is the simplest: A square hole is dug in the ground, half of it under and half of it outside the frame, and deep enough to hold the fumigator. The latter is merely a cylinder made of sheet iron, with a grating at bottom; it is about 7 in. wide and 1 ft. deep. Some burning coal or coke from a neighbouring furnace is placed in the bottom, and over it is laid the Tobacco or Tobacco-paper. The apparatus thus arranged is dropped into the outside hole, and pushed quite under the frame. When the latter is sufficiently filled, the fumigator is pulled out, and a sack or mat is placed over the hole. It is best to destroy the fly after it does appear by fumigating, but in the case of a small number of plants they may be dipped in soft-soapy water sufficiently strong to kill it.

Fruit.

Vines.—Late-planted young Vines that have grown vigorously, as they generally do, will still require artificial warmth in combination with free ventilation, in order to ensure thorough ripeness of wood. Even in the best of seasons it is sometimes difficult to get such Vines to

ripen, and as the present one has been all but sunless, it will at once be seen how necessary a continuation of artificial warmth is. Such Vines may now have the growth that was allowed to run, to induce greater root-action, cut off; but in its removal carefully guard against injury to the foliage on the main stem, that being an important factor in the plumping up of the fruit-buds. Late Grapes, particularly Lady Downes, will still be the better for having the temperature kept up to about 65°, and the surplus growth on these should also now be removed, as light and air are essential as regards the good preservation of the fruit so long as it remains on the Vines. Grapes that have been ripe for some time, and which are keeping but indifferently on the Vines, through the surroundings being damp, ought to be cut with pieces of the wood and placed in bottles in a dry room. In the case of Grapes that are to be ripe in April, or early in May, the Vines will at once require to be started. "Slow and sure" should be the motto; so for the present be content with keeping the house closed without applying fire-heat. Prior to starting see that the inside borders are well moistened through with water at a temperature of 80° or 90°, and outside borders should have a thick covering of litter or bracken put on them to exclude frost, and shutters or tarpaulin to throw off wet. If, as is in many instances the case, the earliest Grapes are had from pot Vines, these too should be now started, and, though bottom-heat is not essential, a slight warmth, such as that produced by 2 ft. or 3 ft. in thickness of Oak leaves, will assist the earlier starting of the Vines; and even if allowed to root into the leaves, as they will do as the heat declines, such rooting is beneficial.

Vegetables.

Soils vary much, for whilst some are benefited by annual trenchings, others prove more productive if trenched only at intervals of two or three years. As a general rule all kinds of light soils will pay for trenching annually, and the extra labour expended in doing it is saved by freedom from weeds in summer and the ease with which the crops can be sown, hoed, earthed, &c. The trenching of heavy soils is a more formidable matter, but, as a set-off to this, it is not so frequently necessary. When it is done there should always be worked in with it a large amount of cinder ashes, lime scraps, or any material likely to render it more open and porous. Clayey soils are much improved by the addition of burnt soil, and whenever there is likely to be any fallow, advantage should be taken of it to burn a portion, which is easily done by collecting on the ground a heap of brushwood, hedge clippings, or a few faggots, in fact anything that will create a body of fire wherewith to start the soil. Burnt earth for all adhesive soils is simply invaluable. The present is also as suitable—and, as there is no work particularly pressing just now, perhaps as convenient—a time as any during the whole year for clearing up soil-yards, rubbish heaps, and vegetable refuse of every description, all of which gives profitable employment for frosty mornings. Take advantage of dry weather to finally earth up Celery, and bracken or long litter should be in readiness for protection; for if severe frosts sets in it will soon be seriously injured, as, like all other vegetable crops this season, there is a want of solidity and ripeness through lack of sunshine. Cauliflowers and the earliest Broccoli will need to be examined daily for the purpose of bending the leaves over the foliage to prevent injury from frost. Surplus heads can be retarded both by partial lifting (a gentle heave with a fork) or by entirely removing them to a cold shed. Cauliflower plants that are to be wintered in frames or hand-lights must still have the fullest exposure to the weather; the lights should only be put on when sharp frost appears certain. Slugs may be kept from injuring them by an occasional dusting with fresh lime, wood ashes, or soil. Lettuces, Endive, and other saladings intended for winter use will now all need partial protection, such as that afforded by cold pits, orchard houses, or hand-lights. Forcing operations must now begin in earnest; Asparagus, Seakale, and Rhubarb will now force freely, but they will doubtless require more time than usual, seeing that the roots were so late in maturing their growth. Herbs of all kinds usually required in winter can be had by planting a few roots in pots and placing them in a temperature of 45°.

Variegated Kales.—These during winter are very effective when well grown, and their leaves are very useful in decorations when little else of the kind is procurable. There are several races, or "strains," of curled and variegated Kales, Melville's being one of the best, while some prefer what is called the "triple curled perennial" sort, which is said to be a cross between the "Perennial Woburn Kale" and the "annual variegated" variety. In colour these plants vary from white and creamy yellow through all the shades of rosy-lilac to a deep purple, while in form some varieties, such as the Palm tree Kale, or some of the best forms of curled Kale, are very graceful, and even the green forms of these deserve a place either in beds or isolated masses along with the variegated kinds. Kale seeds should be sown in little beds during the summer, say either in June or July, and when the seedling plants are large enough they should be transplanted into rather poor soil, which, by somewhat restricting their luxuriance, induces them to sport into different shades of colour. Much larger quantities should be transplanted than are required for decorative purposes, as all seedling plants do not develop colour variation. Late in the autumn, or after the bedding plants have been cleared off, all the best forms of Kale may be removed from the reserve ground and planted out according to their colour and size, care being taken to transplant with good balls of earth, and to tread them gently but firmly in their new quarters. Some fail to succeed with variegated Kales, by not planting them out in the beds early enough, and the sooner this is done after the ordinary bedding plants are removed the better, before the earth has wholly parted with its summer heat. Our illustration shows some of the forms assumed by these plants; but their chief beauty consists in their colours, which, when lit up by gleams of winter sunshine, are certainly very beautiful at a time when bright colours of any kind are sure to be appreciated. They can either be used alone or grouped along with the Conifers and other dwarf shrubs used in filling up the bare patches of earth left after the summer display of bedding plants is over, and their prevailing colour being lilac or lilac-purple, it follows that golden-leaved shrubs, such as variegated Hollies, Euonymus, or Thujas, are most effective for contrasting with these plants, and to these Golden Yews and Box may be added for the sake of variety.

Group of Variegated Kales.

Lettuce Banks.—The most remarkable thing now in our market gardens is the Lettuce banks planted up with some of the tenderer Cabbage kinds that stand the winter. In open places, especially where the soil is at all wet, it is usual to round up beds on which both Cabbage and Cos Lettuces are planted, as in this way less moisture is retained around the roots than is the case when they are planted in flat ground. Lettuce banks have a sharp incline, without special reference to aspect, the important point being to secure shelter. In order to obtain this the banks are thrown up under Apple trees, Currant bushes, &c., and in some cases small Laurels are planted closely along the tops of the ridges and in such a manner as to project over the bank. These Laurels afford good protection, as they retain their foliage all through the winter. Under such circumstances, a Lettuce crop is got off early, and the soil can be again partially levelled to furnish a crop of dwarf Beans, or other summer produce. The best market Lettuces appear to be the Paris White Cos, Bath Brown Cos, and Grand Admiral Cabbage, and in some cases the Leyden White Dutch Cabbage kind has also given great satisfaction. Of course a hardy constitution is of the first importance, but the bank plan of culture is advantageous to half-tender kinds that are larger and more acceptable for table. The demand for Lettuces depends for popularity very much upon the character of the weather; in cold periods they are little sought after, but in warm weather there is a great demand for them.

Protecting Salad Vegetables.—With the aid of the French cloches, or hand-lights, or garden frames of any description, or those improved shapes of movable contrivances, of which we see so many advertised illustrations, all kinds of salads can be easily protected from very hard frost. Beds of Lettuce, Endive, Radishes, Watercresses, and many other things might be covered with them and preserved for a long time. It is preferable, however, to leave these plants without cover as long as possible, or to have the sashes or tops of hand-lights off at night, even though it be frost, for 6° or 8° of frost will injure nothing in this way at this season. It is further on that these things get tender, and it is therefore best to keep them as hardy as possible. Coddling and too early protection are the bane of those useful necessaries of life. Where there is a quantity of cloches or hand-lights together in one lot, a piece of frigi domo or canvas stretched over the whole in hard frosty times is better than leaves.—C.

Potatoes.—Having seen numerous remarks in GARDENING ILLUSTRATED from time to time about Potatoes, it may not be uninteresting to some of its readers if I make a few observations on the subject, which are the result of experience gained this season in the north, within two miles of the centre of Sheffield, in fact. I may say at the outset that my soil is light, with a porous bottom. Magnum Bonum Kidney has, with myself and others, averaged 3 lb. per root, and many tubers have been exhibited weighing from 1 lb. to 1½ lbs. I consider Magnum Bonum much superior to Scotch Champion, which is more suitable for a field crop, requiring to be planted 3 ft. apart each way. This wet season the tops of Champion in my garden were 6 ft. long and as green as grass the second week in October, though planted on Easter Monday. The average was not more than 2½ lb. per root, though some few roots had 20 Potatoes weighing 4 lb. International Kidney is the finest second early Kidney I ever saw, my crop producing 3 lb. per root, and the habit of growth is such that one lift of the fork brings them all to the

surface. I planted 1 lb. only of Woodstock Kidney, and the produce was 20 lb., but they spread about very much, and if not careful you spoil many tubers with the fork. They are however, more floury when cooked than International. Schoolmaster turned out a good average crop, and were ready in August, but I notice this peculiarity about it, that many tubers have what may be called knobs on them, which detract from their appearance. Snowflake turned out many fine large tubers, but I notice that they are a long time coming to maturity. Mine were planted in March, and not ready until the last week in September. I consider the best flavoured Potato I have grown this season to be Myatt's Prolific, which were ready the second week in August. Lastly, I may state that all these varieties were free from disease in my garden, as I did not find a dozen diseased tubers altogether, and these were in the Scotch Champions. —BURNS.

MIXED FLOWER BORDERS.

MOST of the plants in herbaceous borders will shortly be in a condition to have their tops removed; this is necessary for appearance sake, but is not justifiable upon any other grounds. The tops, although they may have no vitality in them, afford protection to the roots and dormant buds that lie thickly about the crown just under the soil. When the old flower-shoots are removed, the crowns sometimes suffer in two ways, first, from the absence of shelter that would be afforded were the tops allowed to remain, and also from another and often more serious cause. In many cases the stems are hollow, and when these are cut at 1 in. or 2 in. above the ground, they get filled with water down to the bottom, right to the very point where the buds are formed that are intended for the ensuing year's growth. To inflict as little injury as possible in this manner care should be taken in the first place never to remove the tops from a plant whilst there is any vitality in them; for, until dead, they must impart strength to the roots, and when in a condition for removal, they should never be cut so close as is generally practised. Instead of severing them near the surface leave them 8 in. or 10 in. high; so treated they will not be an eyesore. In the case of anything that is at all tender a little dry Fern or litter may with advantage be placed round and over the crowns.

All weeds should be removed by hand and the ground raked; but in places where there are yet any leaves to fall from deciduous trees, anything in the shape of mulching over the entire surface should be deferred until all the leaves have fallen and can be cleared off, as if the mulching is put on whilst the leaves are yet falling, it is afterwards a difficult matter to clear them off. In far the greater number of gardens many more bulbous plants than are usually seen might, with advantage, be grown. Their distinct forms and pretty colours are an interesting and pleasing feature during the spring months.

Nothing in their way can be more beautiful than the varieties of Erythronium (Dog's-tooth Violet); those who intend growing these should procure E. giganteum or grandiflorum, a fine red variety; E. alba major, a very large-flowered pure white, much superior to the old white variety; E. americanum lanceolatum (yellow), a very distinct and desirable kind; E. atro-roseum, a deep rose-coloured kind; E. purpureum majus, very large mauve purple flowers; E. giganteum album, splendid white, bearing eight or ten flowers on a stalk; E. giganteum flavum, fine golden-yellow. Either grown together in a bed or in good-sized patches at the front of the herbaceous border, these plants have a charming effect, not alone for the beauty of their flowers, but their handsome mottled leaves are very attractive; they should be planted without delay. Hardy kinds of the Ranunculus, such as the Turban varieties, may now be planted in situations where the soil is dry, but the more valuable sorts should not, except in very favourable positions, be planted yet, as they are apt to suffer from wet by lying too long in the ground.

Where a succession of handsome hardy flowers is held in estimation, single Anemones should be largely grown, the plants, from their compact habit and the continuous brilliant coloured blooms which they produce, being almost without a rival; the single scarlet variety is most effective, commencing to flower, in a mild season, during the first month in the year. Anemones like a moderately rich, free soil, and if grown in clumps in the herbaceous border should occupy a front position, on account of their dwarf habit of growth. Such subjects as Sweet Williams, and fine varieties of Foxglove, that were sown in the early part of the season and afterwards transferred into nursery beds, may, if the weather keeps open, and when grown in soil of such a nature that they will move with good balls of earth, be now planted in the borders where they are to flower; but when these conditions do not exist, or the plants are small and late, it is better to defer this work until spring, or they might suffer if a hard winter was to set in early.

A very pleasing effect may be produced in spring by planting large masses of Snowdrops, Crocuses, and Daffodils in the Grass in distant parts of lawns, in Grass plots in out-of-the-way corners, or in front of shrubbery borders, and under trees. These may be either planted in patches or dispersed 6 in. or 8 in. apart over the available ground. The places chosen for plants of this kind should not be in too close proximity to the dwelling, as the tops ought not to be removed in the spring until after they are dead, which, in a very prominent position, would be unsightly. Where any of the above plants are to be so arranged, they should be planted immediately. Crocuses and Snowdrops may be put in by making holes with an ordinary dibber, covering the bulbs with a little loose soil; for Daffodils, holes must be made with a spade, but whichever way the planting is effected, it can with ordinary care be done even on Grass without having an unsightly appearance.

Double Canterbury Bells.

Double Canterbury Bells.—Now is a good time to sow seed of this biennial, but seed sown in March will secure large massive plants that will produce several spikes of flowers, and display the beauties of one of our finest hardy border plants to the best advantage. The seed is small, and may, if plentiful, be sown in a warm spot in the open ground, but it is much safer to sow it in shallow pans or boxes placed in a frame or on a shelf in the greenhouse, as in the latter case all the seed will probably germinate and an abundance of plants be secured. Seed sown now should also be sown in pans, and when well up be picked off into small pots or boxes to be finally planted in the open ground in March or April. When those from the spring sowing are large enough to handle conveniently, prick them out into some shady spot, and keep them watered until the plants are well rooted. From that time they may safely be left to take care of themselves until September, when they should be transplanted into their permanent places in the flower borders, and so treated will not only get well established before the winter arrives, but will also develop their blooming crowns for the next year. This constitutes nearly all that it is needful to say as to the raising of a seedling stock of these Campanulas, better known as Canterbury Bells. They may be classed into three sections—single flowers, as seen in the old-fashioned single Bells; doubles, as found in the stout massive flowers, in which two, three, and even four bells seem to be compressed into the outer one; and duplex flowers, as seen in the calycanthema forms, in which one bell grows in the other, and the combined two resemble a cup standing in a saucer. The single varieties, as of old, are still to be had, but no one would care to be dependent upon these only who have once seen the beautiful products of a fine modern double and semi-double strain, and which will also produce some single flowers. Whilst the old single strains comprised only white and blue colours, the modern strains include nearly a score of hues, inclusive of white, lavender, mauve, several shades of purple, pink, rose, salmon, and also blue. The duplex strains have have hitherto been chiefly confined to white and blue, but other colours are now being introduced. It is a curious fact in relation to this section that whilst the seed of the white form is of a pale hue, and the seed of the blue form is of a dark tint, the seed of the double and semi-double forms of all colours is the same, viz., a glossy brown. The habit of the latter section is compact and good, the plants when in bloom ranging from 18 in. to 24 in. in height, forming perfect pyramids of flowers. From frequent experience I have found that these may be lifted and placed in pots even when in full bloom without injury. If to be used for corridor, house, or conservatory decoration, it would be best to lift the plants and pot them into 6-in. pots early in May; this would enable them to get well established before the blooming period. The calycanthema section usually exhibits both a taller and a looser growth, and should be planted in borders behind the double and single kinds. Plants from seed sown now would flower next May twelve months, and those sown in March a few weeks later.

Laying Out Flower Beds.—Variety in form of flower beds is next in importance to a variety of plants. But how to invent or lay out a dozen or a hundred, and have no two just alike, seems to puzzle most persons, judging from what we see in villa plots and grounds of more pretension. The square, circular, heart-shaped, diamond and star are all well enough under certain circumstances, but their frequency in small gardens leads one to think the inventive powers of amateurs, in this direction at least, are rather limited, or are not put to the test for the want of a proper incentive to produce a diversity of forms. Our books on gardening are also full of labyrinthian designs for flower beds, which would require a skilled geometrician to carry out to anything like perfection. For my own part, I never could see anything to admire in one of these carefully-designed flower beds, laid out a geometrical nicety, like the patch-work bed-quilts of our grandmothers. The free-and-easy natural splashes of a bed here and there among the Grass, or an entire border under cultivation, always look best to my eye, whether right or wrong. I had to form some beds on a small lawn, and the next question to be decided was the shape of the beds, and how they should be laid out. Of course, I could resort to the rule and square, and by providing a few hundred small stakes, the design might be made sufficiently plain for the guidance of ordinary workmen; but I dispensed with all this kind of apparatus and merely took a large rope and coiled it around upon the Grass in the form that I wished the bed to be when finished. With a sharp spade the soil was cut by the side

of the rope, and the design was complete. Then I proceeded to the next, and so on until all were laid out, after which my men could go on and dig up the sod over the entire bed without any danger of making a mistake. A rope of 1 in. or 1½ in. in diameter, laid upon a close-cut sod or bare soil, will give one a better idea of how a bed is going to look when finished than the best drawn design upon paper, or any number of stakes driven in the ground. Then one can twist the rope this way and that, coil and uncoil, until the design just suits the eye and fits the spot where the bed is to be made. A pretty design on paper may not always fit in among trees and shrubs and look as well as a person might "think it would." By discarding the square and rule and using the rope, a person can give free scope to his imagination in designing suitable forms of beds; and the more they depart from the usual geometrical styles the better.

ANSWERS TO QUERIES.

3489.—**Keeping Plants from Drying up.**—One of the chief objections to a brick flue in a greenhouse is the tendency it shows to induce a hot, dry atmosphere. This evil is less seen where hot-water pipes are used, as there, although heat is still as strong, or even stronger, it is obtained in a more healthy manner. One thing which strikes us is the fact that for the air to be so very dry that the plants are dried up much more heat must be furnished than is necessary. Whilst the weather is open and dry no fire-heat should be given in an ordinary greenhouse. It is when damp is prevalent or severe frosts prevail that fire should be used, and that regularly, as but one night's frost may destroy all the results of a year's labour. But even let the weather be what it may, it is not well to force a heat of more than 45° at any time, although on a warm, sunny day this may be for a short time exceeded. 40° at night will do admirably, and there are no greenhouse plants that will not do well in such a moderate temperature. If the plants are dried up in such a temperature as this indicated, the flue must be nearer to the pots than is desirable. If the roots get dry, water freely, and if the air of the house seems too dry give air, and put on the flue a shallow zinc tray filled with water. This will emit moisture sufficiently to keep the air from burning. It is, however, most probable that the fire-heat given is excessive, and should be somewhat moderated.—A. D.

3458.—**Quick-growing Trees and Shrubs.**—Plant a row of Limes next the road, then a row of Cupressus Lawsoniana to form a screen. If the Limes get too large cut them back or remove them if the Cupressus form a sufficient blind. The following are suitable for lawn planting: Berberis Darwini, Hollies of various kinds (especially Hodginsi, Silver Queen, and Gold Queen), Evergreen Oak, Acacia inermis, Acer Negundo variegatum, Ailantus glandulosa, Weeping Birch, Weeping Ash, scarlet, pink, and white Thorns, Spiræa ariæfolia, Venetian Sumach, Cedar of Lebanon, Picea Nordmanniana, P. Pinsapo, Abies canadensis, Thujopsis borealis.—E. H.

3460.—**Climbers for Porch and House.**—Plant a collection of Ivies on the house wall, leaving out the strong-growing green-leaved kinds. Between the Ivies plant Clematis Jackmani hybrids. Against the porch plant a Gloire de Dijon Rose, a Honeysuckle, and Clematis flammula, and let them all grow up together. The following will be a good selection for the border: Snowdrops, Crocus, Tulips, Hyacinths, Daisies, Forget-me-nots, Primroses, Pansies, Pinks, Clove Carnations, Sweet Williams, Anemones, Columbines, Canterbury Bells, Michaelmas Daisies, Sedum spectabile, Sweet Peas, &c.—E. H.

3484.—**Treatment of Old Fig Trees.**—Fig trees in the open air require to be so placed that it gets the full benefit of the sun during the summer. If grown in a partially shaded situation the wood does not acquire the maturity necessary to enable it to carry a crop of fruit; neither does the Fig like rich or well manured soil, but delights in sandy or calcareous soils, where it makes short-jointed wood, which ripens up well by the autumn. The only pruning that the Fig needs is to cut all weakly branches or thin them out where at all crowded, so that sun and air can play freely amongst them. In the case of an old barren tree, we would take it up in March, shorten back the long, strong roots which have got too deep or too far from home, thin out the branches, and plant in quite poor soil in the sunniest place at command. Mortar rubbish in quantity is an excellent material for mixing with the soil. The young fruit is formed by the autumn, and then as soon as the leaf falls mat up the tree safely, stuffing in plenty of litter amongst the branches. The second crop will form in the spring.—J.C.B.

3406.—**Improving Lawn.**—Hand-pick the lawn at once, both Daisies and Dandelions will pull out with the roots entire now the land is so soft. It the latter breaks off instead of drawing out, place a large spoonful of salt in the hole. If the Grass is strong and coarse manure will not help it. Persevere with the roller in mild weather. I have never known it to fail if done often enough.—E. H.

3469.—**Wintering Ranunculuses.**—The root of the florists' Ranunculus is a tuber, or rather is tuberous and not a bulb. It is not well to plant them now, but rather in February, and even then it is desirable to protect the bed in which they are planted to some extent from severe frosts and heavy rains, but it is not an absolute necessity. Roots yet left in the ground should be lifted at once and dried off, then be stored in a dry place until planting time in February. If left in the ground all the winter the roots may entirely disappear. The Ranunculus requires good soil; in fact, rich soil; the loam stiff, but well pulverised by frost, and intermixed with rotten manure and sand. The roots should be planted only when the soil is fairly dry, and will fall to pieces when a handful is held up and allowed to drop.

—— Take them up carefully and store each kind in dry sand in a flower-pot, placing them in a cool situation, such as a cellar. The roots will bear a considerable amount of drying without losing their vitality, for we have known some to grow freely after they had been kept out of ground for two years.—B.

3470.—**Worms in Cinerarias.**—We fail to perceive what connection there can be between the flagging of your newly potted Cinerarias and the small white worms beneath the pots. It would seem most probable that owing to the plants having been left unpotted for a couple of days some of the small roots had died, and hence the flagging of the plants after repotting. It is most probable that keeping the plants in a cool frame and shaded when the sun shines would soon bring them round. If, however, there is further evidence of these small worms, the best thing will be to give a watering with lime-water—made by putting about 1 lb. of hot lime into a gallon of water, and allowing it to stand until it is quite clear. It can then be used when required.—A. D.

—— If you have worms in the soil turn out the plants and pot in fresh soil; this will not check them, as they have been recently potted. All that you have to do is to water moderately for a time until the roots get well hold of the soil, and keep the plants free from frost, but quite cool. The Cineraria likes a moist, cool atmosphere, and the soil should be kept in a moist condition without watering heavily.—B.

3474.—**Insects in Pansies.**—It is very common of the Pansy to collapse in summer, especially when the weather is hot, but this has usually been attributed to shanking or rot in the stem. How produced, however, no one seems to understand. The affection in the stem is always just at the junction with the root. The small white insects may have something to do with this disease, but it is most probable that they are but the inevitable accompaniments of decay in the plants. We have found that autumn-planted Pansies are rarely affected, whilst those planted in the spring will die at a wholesale rate. A little Tobacco water or lime water would probably soon kill the insects, but it is doubtful whether the plants would be saved, as the insects are more likely to be the effect than the cause.

3481.—**Neapolitan Violets.**—You cannot have the soil too good for the Neapolitan Violet, but it must be rather a natural goodness, and not an artificial one. The Violet likes a good fibry loam of two-thirds with the other third of well decayed manure. Strong plants should be in 7-in. pots, and now be full of robust foliage and have strong crowns. The plants should have been potted ere now, but if old, they should have a shift into larger pots, or, failing that, have 1 in. deep of the soil removed and fresh added. The proper place is in a cold frame standing upon a bed of ashes, the leaves almost touching the glass. The lights should be tilted both in front and at back unless the weather be very severe or the wind be rough and strong.—A. D.

3476.—**Camellias Dropping their Buds.**—This arises from various causes, but in most cases it will be found that, providing dryness of the soil is not the immediate cause, the roots have got into a more or less unhealthy condition. It is a curious fact that a weakly plant will generally set a large number of buds, although these will be small, and the plant being deficient in vital force, they will drop almost as soon as the plant is placed under cover in the autumn. All that can be done in such a case is to examine the drainage by turning the plant carefully out of the pot. Should the drainage appear at all defective, replace it with fresh material. Water carefully during the winter, allowing the soil to become dry, and then giving enough to thoroughly moisten it through. In the spring, just as fresh growth is appearing, work away as much of the old soil as possible with a pointed stick without injuring the roots, and replace in the same sized pot, working in some fine well sanded peat round the old ball. Keep under glass until growth is made, and then turn the plants out in a shady sheltered situation until the middle of September.—J. C.

3477.—**Planting Xanthoceras sorbifolium.**—In order that this shrub may thrive properly, some little care must be taken to prepare the soil for its reception. Where the natural staple is heavy and cold, it is better to remove it entirely, taking out quite a good square of soil and replacing with good fibrous, somewhat sandy, loam, to which may be added a little leaf-mould. The plant in question may remain where it is, protecting it a little in hard weather and planting afresh in the beginning of March.—C.

3463.—**Culture of Oleanders.**—Whoever wishes to flower Oleanders well must induce them to make a free and early growth and mature the wood by full exposure to sun and air. Oleanders delight in strong solar heat in combination with copious supplies of water at the roots. A good sound fibrous loam, adding to it a little leaf-mould, is the best soil for them, and the pots should be well drained. Shift in March and keep the plants tolerably close and warm for a time, but expose them to full light, and ventilate freely all through the summer. About the latter end of August turn them out for three weeks in the open air.—J. C. B.

3483.—**Bare Places on Bowling Green.**—We presume that the turf will be trod upon again early in the year, in which case it would be of little use to sow Grass seeds, and the only way will be to procure fresh turf and make up the bare places. This must, however, be done at once, so that it grows into place by the early spring before dry weather arrives. If you can give the turf a rest, that is to say, if the Grass is not likely to be much trodden upon during the summer, you may sow Grass seeds in the spring, taking care to well sweeten the soil by turning it up roughly before sowing.—J. C.

3473.—**Blue Hydrangeas.**—We have no experience of H. cyanoclada, but as it is advertised by a respectable firm we should suppose it to answer the description. We are acquainted with a blue Hydrangea which has preserved its colour for fifteen years, as do the young plants taken from it, and M. Lavallée, of Segrez, tells us that he has a fine blue Hydrangea which he calls cyanea, and which he asserts is much hardier than the common variety.—J. C.

3475.—**Rose on West Wall.**—Niphetos is not a suitable Rose for a wall; it is not a vigorous grower; and is more valuable for pot culture, beds, &c. Gloire de Dijon, Madame Berard, Cheshunt Hybrid, Jean Rosenkrantz, Climbing Duke of Edinburgh, Climbing Devoniensis, Lamarque, or Solfaterre, will be found much more suitable for the purpose. If the winter is very severe the long blooming wood of the last three must be protected with matting, &c., otherwise the frost will much injure the trees.—WILLIAM WALTERS, *Burton-on-Trent*.

3402.—**Pruning Gloire de Bordeaux Rose.**—This Rose is similar in rapid growth to Gloire de Dijon, and must be pruned sparingly. Cut out next March all the weak, ill-placed, and crowded shoots, and shorten

back the long well ripened wood to the first vigorous eye, taking care not to shorten more than is necessary. The roots should be protected and strengthened with a good mulching of manure during the winter, which may be dug in towards March, and with this treatment the plant should flower well next season.—WILLIAM WALTERS, *Burton-on-Trent*.

3465.—**Pruning Gloire de Dijon Rose.**—As the tree has made so much wood very likely it is owing to hard pruning last spring. All vigorous growers of this class must only be slightly shortened, cutting away all unripened and misplaced wood. See remarks on pruning Gloire de Bordeaux Rose (No. 3402) which will equally apply to Gloire de Dijon, Madame Berard, and others of the same rapid growth amongst Teas and Noisettes.—WILLIAM WALTERS, *Burton-on-Trent*.

3485.—**Climbers for House.**—Cotoneaster Simmondsi, C. microphylla, Cratægus pyracantha, Cydonia japonica, C. j. rosea, Escallonia macrantha, Euonymus radicans variegata, Garrya elliptica, Magnolia grandiflora, Ligustrum japonicum, and Berberis Darwini. Ivies alone in variety will have a pretty effect on a red brick house.—E. H.

3400.—**Rose of Sharon Under Trees.**—Yes; it will grow well under trees if not too much shaded and deprived of light and air. I recently saw a quantity in a nursery near Nottingham thriving well, planted out under the shade of some Apple and Damson trees.—WILLIAM WALTERS, *Burton-on-Trent*.

3465.—**Evergreens for Chalky Soil.**—Arbutus Unedo, Evergreen Oaks, Portugal Laurels, common Laurels, Box, Yews, Berberis stenophylla, Furze, Japanese Privet, Abies excelsa, Cedrus Libani, Cupressus Lawsoniana, C. sempervirens, Juniperus hibernica, Picea balsamea, Thuja occidentalis, Pinus austriaca.—E. H.

3461.—**Shrubs for Screens.**—To blind the road plant a belt of Cupressus Lawsoniana, zigzag fashion, not in a straight line. To form the screen round the Oaks plant chiefly such shade-loving subjects as Hollies, Boxes, Yews, Evergreen Oaks, Barberries, Aucubas, Japanese Privets, with a few common and Portugal Laurels, introducing also here and there a deciduous flowering shrub, such as a Lilac, Laburnum, Ribes, Syringa, Guelder Rose, &c.—E. H.

3479.—**Winter Cucumbers.**—If a temperature at night of from 60° to 65° can be secured, if there are means of getting a bottom-heat of 75°, then Cucumbers may be grown in the house with Coleus, &c. Moisture in the atmosphere can be obtained by damping floor and walls. Insects, such as greenfly and thrip, must be guarded against, and a sprinkling of fresh soil should be added over the roots weekly; it tends to keep all sweet. Train the Cucumbers within 18 in. of the glass, and when the short days come don't prune or pinch too much.—E. H.

3478.—**Stones for Rock Plants.**—We do not think that the stones in question would be likely to prove injurious, although we should certainly prefer a more porous material. The object of stones is to provide efficient drainage, and this they will do, whether they contain minerals or not.—J. C. B.

3475.—**Tea Roses on Walls.**—We think that Gloire de Dijon would be better for you than Niphetos, which is tender and requires more warmth than the generality of Teas. Where only one kind of Rose can be grown let it be the old Gloire de Dijon, than which nothing is more beautiful, and which flowers so freely and for so long a period.—J. C.

3462.—**Dendrobiums not Flowering.**—All the time the plants are growing they should be kept in moist heat, but as soon as growth ceases turn them out for a rest into a cooler structure, or place them at the coolest end of the house, and keep them rather dry. The best time to pot is just as growth commences, and the best soil for them is three-fourths peat and one-fourth Sphagnum.—J. C.

3259.—**Wintering Roses in the West Riding of Yorks.**—In a warm border in an exposed situation I never take up my Tea Roses, as I think the longer they are established the better they are able to resist frost. Mine are on their own roots, and I protect the roots with rough litter and the tops with Fern. They have been planted ten or twelve years in the same border. I have also a Banksian Rose.—HARTSIDE.

3469.—**Wintering Ranunculus Roots.**—I take up the roots when the foliage turns brown, and when dry, pack in dry sand in a box and keep in a dry place till the middle of February, when I plant again. This plan has answered well with me for several years. Mine have been packed away more than two months.—J. C., *Dorset*.

3471.—**Dandelions on Lawns.**—Constantly cutting the crowns of Dandelions will kill them, but their destruction will be much hastened if a large spoonful of salt is placed on the wound when the crown has been cut away. Watson's lawn sand used in the same way has the same effect.—E. H.

3480.—**Climbers for a Greenhouse.**—I hope "S. L. B." will obtain what he desires; but he aims high. Perhaps the following may suit him: Jasminum Sambac fl.-pl., Rhynchospermum jasminoides.—E. H.

3467.—**Trellises for Screens.**—If the trellis is not more than 5 ft. high, and if it is formed with wires strained along horizontally, and does not touch the Pear or Apple trees, I think they will do as little harm as anything that can be substituted for them. Of course, if we grow too much on the land, something must suffer.—E. H.

3486.—**Plants for Pillars.**—Habrothamnus elegans will soon cover the pillar, so would Plumbago capensis; better take out a tile and plant it out. The question as to the border is somewhat vague. Camellias, Acacias, or a mixed collection of winter and spring flowering plants may be either planted or plunged in pots, or be stood on the surface of the border, and might, if rightly done, give satisfaction in either case.

3459.—**Pyracantha not Flowering.**—Prune it hard back, and place some fresh soil and manure round its roots. It has become stunted; new life must be infused into it. This the pruning will do by turning the sap into fewer outlets, and cutting away those that are blocked up.—E. H.

3312.—**Pine-apple.**—*J. Burford.*—If you get a number of GARDENING for April 26, 1879, you will find an engraving of a variegated Pine-apple.

3401.—**Gnats' Bites.**—"Butterfly" asks for a cure for the painful bites of gnats and midges. There is nothing better than Eau-de-Cologne. When cover shooting, I always carry a small flask with me and occasionally moisten my forehead, ears, and neck with it, as it is a preventive as well as a cure.—SPORTSMAN.

3538.—**Vines in Windows.**—*Philflora.*—If your window is a light and sunny one, you might possibly succeed. It would be best to get a well-ripened Vine from a nursery, and plant it in a prepared border outside, and bring the stem in through the brickwork or woodwork. Black Hamburgh would be the best kind.

3539.—**Wintering Geraniums.**—I have some hundreds of Geranium cuttings struck last month in an old Cucumber bed, from which the heat is entirely gone. Can I keep them during the winter without removing them by placing a frame and lights over them?—W. J. H. J. [Yes; if you can keep frost and damp from them. They will need no water unless the soil gets really dust dry. Then water without wetting the leaves, and leave the lights off for a few hours during sunshine. Keep dead leaves picked off.]

3540.—**Lily of the Nile.**—What treatment should I give to a healthy Lily of the Nile plant during winter, as regards watering, &c.? Will it require more protection than a spare room without any fire? And what should I do about the young plants which are coming up round the plant? It is in an 8-in. pot and has not flowered yet.—AMATEUR. [Keep it in the window during mild weather, but during frost it must be put in a warmer place. Sponge the leaves now and then to clear them of dust, and keep the soil moist. Leave the young plants till the big plant has flowered; then remove them and pot them, or plant them out in good soil.]

3541.—**Forcing Rhubarb in Dark Pits for Christmas.**—*M. T.*—Put 3 ft. of long stable manure into the pit and well tread it down, covering it over with a few inches of garden mould; then get some strong Rhubarb roots and place on the bed, and cover them up to their crowns with light mould or leaves. Close the frame, and cover over with mats or straw. A lining of manure round the pit will be an advantage. If some leaves can be mixed with the manure they will help to retain the heat.]

3542.—**Wintering Geraniums, &c.**—*Vaga.*—You may winter Geraniums, Fuchsias, and Myrtles in a greenhouse so long as you do not allow the thermometer inside to fall below freezing point.

3543.—**Mildewed Plants.**—*W. H. B.*—Give plenty of ventilation, and let each plant stand free of its neighbour. Water as little as possible, and this always on the morning of a fine day. Sprinkle the leaves affected with flowers of sulphur.

3544.—**Returfing Cricket Ground.**—Will turf which has become very yellow by having been cut and rolled for some time recover itself? and how soon? I should also be glad to know when procuring new turf how thick it should be cut?—FIDELITER. [The turf will doubtless recover in spring if laid at once; 1½ in. or 2 in. is the proper thickness to cut turf for laying.]

3545.—**Cardoons.**—*J. M.*—These are of no use for culinary purposes unless properly blanched. They require protection in winter. The best way is to raise them from seed every year.

3546.—**Wintering Heliotrope.**—*Hereford Square.*—It is hardly possible to safely winter Heliotropes in cold frames. Put them in the window of a warm room, especially if you wish them to preserve their foliage.

3547.—**Coral Moss or Fern.**—*Asa Rebbew.*—You probably mean the fruiting Duckweed (Nertera depressa). It requires a moist, warm place during winter. It will flower and fruit in spring plentifully. In summer it will, of course, do in the open air in moist soil not too much exposed to the sun.

3548.—**Worms in Manure.**—*Inquirer.*—Apply a small shovelful of salt and the same quantity of soot to each large barrow-load of manure. Well mix it and turn it over two or three times. Let it remain in a heap for two or three weeks before use, turning it over every three or four days, and adding a little more soot each time. It may then be applied to the ground.

3549.—**Stephanotis.**—I have a Stephanotis in the stove in a pot. It is twined up the roof, and now it darkens the house very much. Can I take it down and twine it round stakes inserted in the pot and put it in a temperate house during winter, and when shall I put it back again?—A. B. T. [You may twine it round the stakes, and so long as you do not move it to a house where a very low temperature is kept, it will be all right. Move it back in March, and train it up the roof again.]

3550.—**Antigonon insigne.**—I have several plants of the above raised from seed about ten months ago. They are now from 4 in. to 7 in. high, and have only the two first leaves. They look very healthy, but appear to have been just the same as they are now for several months. What ought I to do to make them grow? In cold weather I have kept them in the sitting-room, in hot weather in the attic.—A. R. [Keep them in a warm window if you have no greenhouse, and put a bell-glass over them.]

3551.—**Sawdust for Covering Bulbs.**—After potting Hyacinths, Lilies, Tulips, Crocuses, &c., and placing them in a cold frame, bedded in ashes, would sawdust answer the same purpose as covering them with ashes to exclude the light?—WALTER H. [Inverted flower-pots are the best, over the hole of which may be placed a piece of slate, and the whole be covered with ashes. Cocoa-nut fibre and Hops are good materials for covering bulbs, but we have a dislike to the use of sawdust for all gardening purposes.]

3552.—**Wintering Carnations.**—I have some choice plants of Tree Carnation, such as Souvenir de la Malmaison, in small pots. Would a cold frame be a good place to winter them in? Will they be injured by frost?—R. R. [A greenhouse would be the best place for them, but they may be safely wintered in a cold frame if the pots are plunged to their rims in ashes or Cocoa-nut fibre.]

3553.—**Palm Fronds Cut Down by Frost.**—I am told if the fronds die down, although the roots are quite sound, and crowns sound and green, they never throw up fronds again. Is this the case?—J. B. [Palms which lose all their leaves seldom succeed afterwards. By placing them in a warm, moist atmosphere, however they may recover.]

3554.—**Crown Imperials.**—*C. J.*—The Crown Imperial may be grown and flowered in any loamy soil forming a flower border, but to do it justice, and to ensure a fine bloom, it should be planted in a deep rich soil well drained. If the soil is not rich it must be made so by the addition of a good dressing of well-decomposed manure. A good coating of manure should be laid about the plants during the winter, as it will give them a little protection during severe frosts, and benefit the bulbs. The Crown Imperial is one of those plants that, when once planted, require to be let alone and remain undisturbed for years. Strong bulbs do not always flower the first year after planting.

3555.—**Preserving Window Shrubs.**—*A Learner.*—The pots should be plunged in ashes or Cocoa-nut fibre in the window boxes. These should be watered only when dry, and not at all in frosty weather; always water with cold water. In spring plunge the pots out in the garden and give them plenty of water during summer. A top-dressing of some good artificial manure will benefit them if done early in summer, or a little liquid manure occasionally.

3556.—**Trees and Shrubs.**—What are the best trees and shrubs to plant in a garden now?—CONSTANT READER. [All trees and shrubs may be planted now. What kind of a garden do you want them for?]

3557.—**Egg Plants.**—*Edith.*—These should be raised from seeds every year. Sow in March in a warm frame, pot into small pots of rich soil, and finally shift into 6-in. or 8-in. pots, or plant out in a frame or out-of-doors in June. To grow them well they want a warm, moist temperature.

3558.—**Vines in Pots.**—Should Vines in pots be taken under cover during the winter, or left in the open air?—A. K. [Take them into a cool house until they are wanted to be started if you can do so.]

3559.—**Roses in Small Greenhouse.**—Will the fumes from a brick flue, which I only light to keep out frost from Geraniums and Fuchsias, injure Maréchal Niel and Gloire de Dijon Roses? Also what treatment does the Maréchal Niel require? It is a young plant in a 8-in. pot.—D. LAW. [Unless you make the flue very hot it will not injure the Roses. Train the shoots of the Roses out thinly, so that they can get plenty of light and air, and do not prune them. See article on Tea Roses in last week's GARDENING.]

3560.—**Caterpillars on Geraniums.**—*W. J. B.*—We know of no preventive only that of well digging ground and apply a good dressing of lime, letting it lay roughly through the winter. When the caterpillars first appear hand-picking should be resorted to, and they may then be greatly checked, if not eradicated.

3561.—**Double-bearing Raspberries.**—*W. R. P.*—There is a kind of Raspberry in called the October Red, which produces fruit in June from suckers made the previous autumn, and in October from suckers made during the summer of the same year.

3562.—**Taking up Gladioli Roots.**—*L. H.*—It is not absolutely necessary to take up Gladioli roots every year if they are growing in well-drained soil. They may be wintered by having a few inches of ashes placed over their roots. Choice sorts, however, are safest when lifted and replanted in spring.

3563.—**Jerusalem Artichokes.**—*Ecossais.*—If planted in February or March in rows 3 ft. apart and 2 ft. from set to set in the rows, and in deeply dug, well-manured soil, and in an open, sunny situation, they must succeed. If the ground is very light, mix some well pulverised clay with it. The Artichoke is liable to run to top in very light soil.

3564.—**Planting Fruit Trees.**—*Breese Hill.*—It is not necessary to put bricks under fruit trees where a sandy subsoil exists. You need not fear the roots going down to the sand if you do not plant the trees too deeply, and keep the surface soil well mulched with manure.

Names of Plants.—*G. M., Aberdeen.*—Tussilago farfara grande; sponge the leaves to get rid of the insects——*F. A. S.*—1, Solidago (species); 2, Santolina incana; 3, not recognisable; 4, Fuchsia virgata.——*Fairfield.*—Gloria Mundi.——*Ashstead.*—Stachys lanata.——*G. A. N.*—1, Leycesteria formosa; 2, Sparmannia africana.——*Edward Pears.*—1, Aster multiflorus; 2, A. ericoides; 3, A. Novæ Angliæ pulchellus; 4, A. Chapmani; 5, A. pulcherrimus.——*H. C.*—1, Aster Novæ Angliæ pulchellus; 2, A. Amellus.——*J. H. A.*—Agrostemma coronaria.——*Teeford.*—Apple Nonpareil Russet, in use from October to February; Pear Marie Louise, evidently grown on a standard or bush tree; in use during September, October, and sometimes November.——*Richmond.*—Eccremocarpus scaber.——*C. C. S.*—Pholidota imbricata; Begonia Weltoniensis.——*Rev. W. S.*—Hibiscus syriacus.——*Mrs. L., Bray.*—Lycium barbarum.—*A. C.*—1, Saxifraga hypnoides var.; 2, variegated Sedum; 3, Sedum acre; 4, Sedum carneum; 5, Saxifraga hypnoides.——*Samphire.*—*G. G. K.*—We think not; we should not advise you to use it.——*Saxon*—1, Adiantum cuneatum; 2, Pteris serrulata cristata.——*J. C.*—Large leaf, Escallonia macrantha; small leaf, Cotoneaster microphylla; simply nail the shoots to the wall.——*Margaret.*—We can form no idea as to the names of your plants from such small crushed-up pieces you send us.——*S. R.*—Achillea Ptarmica fl.-pl.——*Constant Reader.*—Red Musk (Mimulus cardinalis).——*Ped.*—Calliopsis tinctoria, Chrysanthemum coronarium fl.-pl., Viscaria oculata.——*W. H. B.*—Campanula carpatica.——*W. H.*—Send blooms of the May-flower you allude to.—*H. D. H. D.*—A seedling Grape Vine.

QUERIES.

3565.—**Holly for a Christmas in Canada.**—I should feel obliged if any one would tell me the best way of sending some Holly to Canada for Christmas, and would it be possible to send a small tree of Holly about two seasons' growth, the weather in December being very cold?—FRED.

3566.—**Brussels Sprouts Seed.**—Will any one tell me how to save seed of Brussels Sprouts? I have a very fine strain.—OLD SUBSCRIBER.

3567.—**Raising Australian Plants from Seed.**—I should be glad if any one would tell me how to sow

and grow the following plants, seeds of which I have received from Queensland. A short description of what kind of house they will be suited to eventually will also be of service : Barkleya syringifolia, Tristania conferta, Leptospermum flavescens, Brachychiton Bedwilli, Ficus macrophylla.—SUBSCRIBER, *Lymington.*

3568.—**Slugs and Worms.**—In a work on "Our Garden Friends and Foes" I find the following : "I have found that a most potent means of destruction is ammonia, which kills the slugs without damaging the vegetation on which they feed. I take some solid ammonia, and dissolve it in water, so as to make a very weak solution, and when the shades of evening are beginning to fall I water the ground carefully, taking care to give every inch of soil its dressing of ammoniated water. The effect is rapid and certain; the slugs that are yet in their subterranean dens come hastily to the surface, and there lie paralysed by the potent fluid." Can any reader of GARDENING give me any information of the quantity of ammonia required to fetch out the slugs without injury to the plants?—AMATEUR.

3569.—**Woolly Aphis on Auriculas.**—I find that the roots of my Auriculas are smothered with what is, I suppose, woolly aphis ; what am I to do with them? It is too late to repot, is it not?—SNAPDRAGON.

3570.—**Fir Trees for Screens.**—I shall be obliged if some reader will inform me what Firs to plant to form a thick shade, 10 ft. or 15 ft. high. Also the quickest growers for such a purpose, and that will stand clipping; or if any other tree would be better than Fir?—W.P.P.

3571.—**Grass under Trees.**—Can any one recommend a good Grass seed for sowing under the shade of Plane trees? I have been recommended a mixture of Poa nemoralis, Poa nemoralis sempervirens, and Poa trivialis, which was also highly recommended by the seedsmen who sent it to me, but the result was a failure. If any one can recommend anything likely to succeed, I should be greatly obliged. Grassy turf is wanted, not Ivies, Periwinkles, &c.—G. J.

3572.—**Jasmines not Flowering.**—I have two white Jasmines which grow to a great size every summer; although they have been cut back considerably every autumn, they hardly flower at all; aspect south, in a border. How can I make them bloom?—LEWISHAM.

3573.—**To make Pelargoniums Flower.**—I am informed many gardeners use an acid to force Pelargoniums to flower. Can any one inform me what it is?—J. B.

3574.—**Keeping Roots of Scarlet Runners.**—Would some one kindly inform me how to keep my Scarlet Runner and Canadian Wonder Bean roots until planting-out time?—ENQUIRER.

3575.—**Violets not Flowering.**—What is the reason that Violets form seed vessels instead of flowers? Several sorts have been tried in my small-walled garden, and though the plants look well till the end of summer, when the leaves turn yellow in sunny spots, no flowers ever appear. Different parts of the garden have been tried with the same result.—F. L. L.

3576.—**Pentstemons, Auriculas, and Polyanthus.**—Will any one oblige me with the names of six of the finest hybrid Pentstemons, distinct colours? six of the most distinct varieties of florists' Polyanthus? and six of the finest alpine Auriculas, distinct colours?—BURNS.

3577.—**Figs under Glass.**—Will some reader give best dimensions for a span-roof house, say 30 ft. long, for growing Figs? Would it be best to plant in the ground or in pots? What are the best kinds to grow? What soil do they like?—FIG.

3578.—**Passion-flower not Blooming.**—Can any one inform me what is the reason that any Passion-flower has never bloomed for four years? I have planted it in my greenhouse ; the soil is rather dry (in the garden it is chalk). The plant reaches now to the top of the greenhouse, but no bud has ever appeared.—E. GIBERNE, *Epsom.*

3579.—**Acorns for Picture Frames.**—Will any one tell me what would be the best thing to use for sticking Acorns on to cardboard or wood? also for sticking the Acorns into the cups? Last year I tried glue, but after they had been hung up in a warm room some time, the Acorns fell off. I have seen some pretty frames made of Acorns, but could not tell what to use besides glue. What could I stain them with, as ordinary wood stain runs off them? I should like to stain them dark brown?—NIL DESPERANDUM.

3580.—**Best Carnations.**—Will some one give me the names of a dozen or more Carnations which do not burst when expanded, and need no tie to keep them in shape? I want the best in each section, which have the above good habit, as well as a few Selfs or Cloves of the most distinct kinds, which will also keep their shape. Is there a good yellow Carnation or Picotee which does not burst?—BURNS.

3581.—**Soil for Plants.**—Will some practical reader give me a list of composts for plants? I am sure it would be most appreciated. What is the best substitute for peat? It is out of my reach, and so is silver sand. In last week's number it is stated that sea sand can be used without injurious effects to plants. Will any other of your practical readers give further advice on this subject?—X. Y. Z.

3582.—**Sea Sand for Plants.**—Will "H. B. S." (3330) say if the sea sand which was used in lieu of silver sand was prepared in any way to free it from the salt which it contains? as the gardeners tell us that this property makes it most injurious to plants, and that few will survive being brought into contact with it.—E. G.

3583.—**Tree and Plants for Boggy Soil.**—Will the Liquidambar flourish in a river-side plantation where the soil is boggy and wet? the surface of the ground being from 12 in. to 18 in. only above the water level in summer, while in winter it is occasionally submerged altogether. The plantation is principally cpmposed of Alders, with a few Birch, Ash, and Willow trees, all of which do well. I am anxious to introduce some varie-

Uses of Lawn Mowings.—Can any reader inform me if mowings off my lawn are of any other use besides making manure? I have a very large lawn, and I generally get two cart-loads of Grass from it once a week, and am at a loss to know how to make use of it.—G. C., *Tonbridge.*

Hollow Celery.—Can any one tell me why my Celery is hollow? It is the Sandringham White. Another sort in the same garden is all right.—USHURIUS.

gated and light green summer foliage, and especially some which will show rich colour in autumn. I am also desirous of introducing some of the more showy wild flowers, both British and foreign, which would be adapted to make themselves at home among the somewhat luxuriant undergrowth. Primroses, Cowslips, Wood Anemones, Oxalis, Caltha palustris, Daffodils, and Narcissus do very well, and some of the moisture-loving species of Ferns, but it is too wet for wild Hyacinths. I think there must be many kinds of plants which would luxuriate in such a situation, but as I have been very unfortunate in losing many which I have attempted to grow, I should be glad to know whether any of the bulbs advertised by Dutch nurserymen would succeed in such a situation. Only those things should be tried which love shade and will bear drip from overhanging trees.—A CONSTANT SUBSCRIBER.

3584.—**Scale on Peach Trees.**—Can any one tell me how to get rid of scale on my Peach trees? I have tried various so-called remedies without success.—N.

3585.—**New Roses.**—Will some one give me the names of six of the best and most distinct new H. P. Roses raised or sent out during the last six years, and which can be considered a real improvement on older varieties?—BURNS.

3586.—**Insects in Mushroom Bed.**—I had a Mushroom bed which has a fine show of Mushrooms, but directly they are seen above the mould they are eaten off by slugs, and possibly, woodlice. I have caught several slugs, some of which were very large, others small and black, by means of Cabbage leaves distributed about the bed, but this fails now.—J. H. B.

3587.—**Planting Trees near a Neighbour's Garden.**—In the garden next to mine on the west side my neighbour is planting tall forest trees, such as Poplars, Chestnuts, &c. I should be glad if any one acquainted with the law could tell me if he has a right to plant them up close to my fence, or is there any law to compel him to keep them a certain distance away therefrom?—A SUBSCRIBER.

3588.—**Club in Cabbages.**—I am much obliged to Mr. Taylor for his information respecting the club in Cabbages (Ans. 3114) while in the seed bed, but I should be very grateful for a remedy to prevent the clubbing after planting out.—E. T. H.

POULTRY.

CHOICE AND MANAGEMENT OF STOCK IN SMALL SPACES.

IN deciding what breed of fowl should be kept consideration must be given to the situation of the house and run. If they face N. or N.E., the latter the very worst possible aspect for poultry, only a very hardy kind of fowl can be kept with any chance of success, and Cochins will be best for the purpose. They are excellent layers, their eggs having a very fine flavour ; they will bear a great amount of cold, and they are less liable to disease than many other kinds. But they are not ornamental. Their greatest admirers can hardly praise them on the ground of good looks.

Brahmas, perhaps the favourite fowl of the present day, at any rate the most fashionable, for there is a fashion in poultry as well as in flowers, require more warmth than the Cochins, but they bear confinement well, are very large and weighty birds, capital eating and good layers, though the eggs of pure bred Brahmas are often small for the size of the bird. The chickens require a good deal of care and attention at first, and indeed till full grown, if they are to be brought up to exhibition standard, and an amateur should always keep this standard before his mind, whether he exhibits or not.

Hamburghs do well in confinement, and if quantity rather than size and quality is desired in the matter of eggs they are good fowls to keep. They lay as freely as Bantams, they never want to sit, they are very ornamental, and fairly robust.

If the house and run face to the south or south-east, and really beautiful birds are required, then keep black Spanish. They are profuse layers during eight months of the year, the eggs being very large and finely shaped, and the hens will not sit. But unless they can have a warm, sheltered aspect, secure from rain and cutting winds, it is no good attempting them. Anyone keeping black Spanish fowls must be prepared to take a good deal of trouble over them ; but they are worth the trouble.

Game Fowls and pure bred Dorkings will not do well in confinement.

Having selected the breed to be kept, keep to that one kind, and let the birds be pure bred, but not too highly bred, *i.e.*, too much bred in.

Never overcrowd the run. Beginners will hardly believe the ill effects of overcrowding. Disease breaks out in spite of most careful tending, and the number of eggs falls off at once. More eggs will be obtained from six young hens that have sufficient space than from twelve that are overcrowded.

Be very particular in choosing your cock bird. He should not be younger than 18 months, or kept after he is 3½ years old, and the special points peculiar to his breed should be well defined.

Chickens should be hatched as early as possible in the year. With proper care they will stand very severe cold, but it is hardly possible to get fine large birds from chicks hatched during very hot weather. The sun injures them much more than the cold, provided they are kept from the wet and sheltered from strong N.E. winds.

Pullets, if hatched in February or early in March, will probably lay at five months old ; but those hatched in May or June will very likely not commence laying till early in the following year ; consequently they have to be kept a long time before they become remunerative. It is often difficult to get a broody hen early in the year. If they have been encouraged to continue laying through their moult they are too debilitated to commence laying again till late in the spring, so that care should be taken to keep one or two hens sitting through their moulting time. They may have ducks' eggs, for young ducks can be brought rapidly forward in the autumn, or they may be kept sitting on a few nest eggs for five or six weeks. If this plan of resting the hens is adopted they will generally be ready to sit early in the year. Spare no pains to make the birds as tame as possible, and accustom them to being handled frequently, especially if they are intended for exhibition.

It is a good plan to go into the fowl-house occasionally after they have gone to roost, and to take them from the perch. They soon learn not to be frightened, and are quite quiet and gentle under the operation. The advantage of this is found when the hens are sitting. There is a very prevalent idea that the fiercest hens make the best mothers. Perhaps where the fowls run wild, and the chicks have to be defended from hawks and cats, this may be so ; but in confinement the more tame and gentle the hens are the better. Those that get excited whenever anyone goes near them are sure to break some of their eggs while sitting, and to trample some of their chicks to death afterwards. *(To be continued.)*

HOME PETS.

Goldfinches.—I have had for some years in an unheated greenhouse an aviary, in which I have been in the habit of keeping canaries, goldfinches, linnets, and such small birds as I could procure ; but I have never been successful in keeping goldfinches for any length of time. This season a very favourable opportunity offered of my being able to procure a lot of young goldfinches which had been sprigged on birdlime. Knowing them to be delicate birds, I put them into good-sized store cages, where I paid them much attention, and in such a position I knew they would not worry themselves by flying about as in so large a structure as the aviary. In spite of my best attention, many succumbed. But some twelve or fourteen were promising, and after hardening for about a fortnight, I transferred them to the aviary, where they did not improve, for one by one they became muffy and lumpy, and I have lost nearly all. I gave them Hemp and canary seeds, green food occasionally, and a sufficiency of water at all times. Can any one suggest the cause and remedy?—W. H. B.

Canary Not Singing.—I have a canary four years old this season which has always proved himself an indefatigable songster, but has not uttered a sound since the commencement of this moult, now more than three months ago. Can any of your numerous readers tell me the cause and remedy, if any? It is apparently in good health, and is in splendid plumage.—F. C.

Different Birds in One Cage.—Can any reader inform me if two canaries, one linnet, one goldfinch, and one siskin would do together in a cage 2 ft. by 1 ft.? also give a few hints as to their management?—J. B.

Blackbird Turning White.—Can any reader explain why a blackbird, about four years old, in perfect health, and lively as before, should have become, at its recent moulting, white on the head, having some white feathers on neck and on wings? Is it a disease, or what?—LANARK.

THE HOUSEHOLD.

Preserving Tomatoes Whole.—Will some one please give me a recipe for preserving Tomatoes whole without their being sweet? We have a good many ripe and wish to commence at once.—E. B. K.

Bottling Tomatoes.—Can any one tell me how to preserve Tomatoes for sauce? Is there any way of bottling them whole?—M. C. H.

Clouted Cream.—Will any of your correspondents kindly give plain directions for making the ordinary Devonshire clouted cream?—C. W.

Preserving the Winter Cherry.—Can any one give me a recipe for making preserve of this fruit (Physalis alkekengi)?—LOUIS C. D. F.

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REGISTERED FOR TRANSMISSION ABROAD.

VIBURNUMS, OR GUELDER ROSES.

THE Viburnum forms one of the most important families of hardy shrubs, and scarcely ever a plantation is made without a Viburnum of some kind being used in it. There are both evergreen and deciduous species, the first being represented by the well-known Laurustinus, and the second by the Snowball Tree or Guelder Rose. The Wayfaring Tree (V. lantana) of our hedges is also included in this family. As a rule, the Viburnums do not succeed well near towns where the soil is wet and clayey, but in loamy soils in the country air they grow and flower luxuriantly. In Windsor Park, for example, there are large clumps of the Laurustinus, which, during the winter and early spring months, are masses of creamy-white blossoms. Some of both evergreen and deciduous kinds are grown by florists and gardeners in pots for greenhouse decoration in winter, and admirable plants they are for the purpose. The flowers of the Laurustinus, which are plentifully produced on bush or standard plants, may easily be had at Christmas, and they are much whiter than those produced out-of-doors, whilst the Snowball Tree (Viburnum Opulus), when grown in the form of neat bushes, yields abundance of large snowy white balls of blossom early in spring. Well-drained soil and pure air are all that are needed for the well-being of the various members of the Viburnum family. The kind we now figure—

The Dahurian Guelder Rose (V. dahuricum)—is a hardy deciduous shrub, which, in May and June, is covered with umbels of beautiful white flowers. It is a plant which is easily multiplied by means of cuttings made of tolerably firm wood, and inserted in peat soil under a cloche or hand-glass, or the young soft shoots may be taken off early in the season and struck indoors. As soon as they are rooted, they should be re-potted; and when they have become established, they may be placed outside in some shady spot, taking care to plunge the pots; young plants thus raised will be sufficiently hard and woody to be wintered outside without shelter. This Viburnum is not particular as to soil, but those that are light and damp and rich in organic matter suit it best. It forms a somewhat spreading bush, from 6 ft. to 8 ft. high, and has grey downy branches. The berries are oval-oblong, five-seeded, at first red, but when fully ripe in September black and somewhat sweet scented. It is a native of the Dahurian Mountains, and was introduced as long ago as 1785. Among other deciduous kinds the best may be described as follows:—

The Large-headed Guelder Rose (Viburnum macrocephalum) forms a large bush or low tree, covered all over with coarse, starry, scurfy hairs. It is a native of the north of China, and was introduced in 1844 by Mr. Fortune, who speaks of it thus: "This noble species is found in all the gardens of the rich in the north of China, and there is a tree of it growing in a garden on the island of Chusan at least 20 ft. high, which in the month of May every year is covered with its snow-white blossoms." He also adds that when it is grafted on the wild form of the species it blossoms on small plants in pots, and is then not unlike a white Hydrangea, by which name it is known among the Chinese. The flowers

DAHURIAN GUELDER ROSE (VIBURNUM DAHURICUM).
A Hardy Deciduous Shrub; flowers white.

are pure white, and produced in large clusters, which are as much as 8 in. in diameter, not, however, globular like those of the Guelder Rose, but rather pyramidal, each flower being fully 1⅛ in. in diameter, and lasting in perfection for a considerable time. The wild form of the species upon which the Chinese graft the beautiful garden variety displays none of the grand and striking appearance of the sterile-flowered one, which is one of the very finest hardy deciduous shrubs that we possess at the present time.

The Plaited-leaved Guelder Rose (V. plicatum) is a fine hardy shrub growing from 4 ft. to 10 ft. in height, and has glabrous reddish-brown branches. It is found in the north of China and Japan, and was first introduced in 1844 by Mr. Fortune, who says that it is found cultivated in all the gardens of the rich, and forms a bush from 8 ft. to 10 ft. high, which in May is loaded with its globular heads of snow-white flowers, which are about the size of those of the common Guelder Rose. The flower-heads are terminal, and produced in great profusion on the lateral branchlets in April and May, just as the young leaves are unfolding; the flowers are in globular heads, snow-white at first, but just before they fade usually assume a purplish tint. This Viburnum is quite hardy, and a most beautiful shrub when in flower in May.

The Common Guelder Rose (V. Opulus) forms a large bush or low tree, from 10 ft. to 15 ft. high. It is a native of Britain and throughout Europe, in hedges and thickets, in damp and swampy places. The leaves are bright green in summer, but in the autumn they assume a beautiful crimson hue. The flowers are white. The berries are bright red, and, when ripe, in September, very ornamental.

The Variegated-leaved Guelder Rose (V. Opulus variegatum).—This variety only differs from the species in having the leaves variegated white and yellow.

The Indian Wayfaring Tree (V. cotinifolium) is a robust shrub or low tree, growing from 10 ft. to 20 ft. in height, and has grey branches. It is a native of the valley of Nepaul, Kamaon, and the Himalaya Mountains. The flowers are white, tinged with pink when young, obconical in shape, and rather large; they are produced in large corymbs in April and May. The fruit is oval, bright scarlet, and said to be eaten by the people in Nepaul. This kind is rather tender, and requires protection in winter, or to be planted against a south wall, where it makes a fine display, when in flower, in May.

The Laurustinus and its varieties represent the evergreen species, among which the following may be taken as the best:—

The Commom Laurustinus (Viburnum Tinus) is well known as one of the most ornamental evergreen shrubs; it is a native of the south of Europe, from whence it was introduced in 1596. The leaves are of a bright shining green, and the flowers, which are in flat corymbs, appear from November to April, and, in mild seasons, are often succeeded by small dark black berries.

The Variegated-leaved Commom Laurustinus (V. Tinus variegatum) only differs from the common form in having a portion of its leaves variegated with pale yellow.

The Hairy-leaved Laurustinus (V. Tinus hirtum) is more hardy than the common kind, and is a native of Spain and Portugal. Its leaves are oval-oblong, hairy beneath, and on the edges, and the flowers, which appear in the autumn, continue all the winter. There is a variegated form of this which has a portion of the leaves of a golden-yellow colour.

The Shining-leaved Laurustinus (V. T. lucidum) is a native of Algiers and Mount Atlas, and it is less hardy than the preceding. Its leaves are oval, smooth, and of a deep shining green colour above. The cymes, as well as the flowers, are larger than those of the common kind, but seldom appear till the spring, and when the winters are severe, the flowers are killed or never expand, unless in very sheltered places. Of this kind there is a variegated variety.

The Sweet-scented Chinese Viburnum (V. odoratissimum) forms a fine robust bush from 4. ft to 8 ft. high, and in its general appearance greatly resembles the common Laurel. It is a native of China and Japan, and was introduced in 1818 Its leaves are large, oblong, leathery in texture, of a deep, shining green above, pale beneath, and nearly as large as those of the common Laurel. The flowers are white, very fragrant, and produced in February. The berries are oblong, and when young, of a rich red colour, but when ripe, blackish and shining. This Viburnum is too tender for planting in the open border, but makes a fine evergreen for training to a wall.

Greenhouse with Coalhouse or Workshop Underneath. — Recently being at Southsea, a friend of mine had, with a few old lights, two old door frames with doors, a odd lot of scantlings and floor-boards, and about four hundred bricks, built a greenhouse over a workshop. The workshop was sunk 3 ft. in the ground with a flight of steps from ground level to door; the door of greenhouse is at the end, and for want of space the steps to same about 3 ft. high are placed upright. From various queries that I have seen in GARDENING, it occurred to me that a house of this plan could be modified to suit amateur town gardeners. A fireplace or a heating apparatus could be placed in the under part to warm the greenhouse above, or I do not see why the under part could not be used for many other purposes, such as a forcing house. It could be made either with or without light. It would also do for a fowlhouse; in this case if a heating apparatus was wanted it could be placed outside in a small enclosure of corrugated iron. Should an erection of this plan be of any use to an amateur, I shall be pleased to give any other little information that I can. — JOHN BURNELL, *Letchmore Heath, Watford.*

Bottom-heat. — May I be permitted to give a hint to your subscribers as to the formation of a bed for bottom-heat? Some years ago I built a small range of houses for myself, and not being satisfied with the cumbersome way in which the bed is generally formed, viz., with timber or stone, I made an experiment which has answered exceedingly well, so much so, that in the course of my profession I have adopted it in several cases to the entire satisfaction of the gardeners. The plan is simply as follows: I procured some light ⊤ iron cut into lengths for the short way of the bed, set them in an inverted form ⊥ about 12 in. or so apart, and filled in the spaces with malt kiln tiles; these are well open upon the underside, and perforated with fine holes upon the top. Upon this I had laid loose bark from the tan-yard, and then the soil. The whole is easily removed, or a square or two taken out to examine the space below at any time by removing a little of the soil. It takes up so little space in depth, that all the heat must be utilised.—ARCHITECT.

VEGETABLES.

Broad Beans.—These for a very early crop may be planted in November, and as they transplant very easily and safely, when autumn planting is adopted, plant them thickly on a warm raised bed where a little shelter can be given in severe weather; then in February, when the land is in good working condition, lift the young plants carefully, with all their roots intact, and plant in fresh, well-prepared ground in rows 2 ft. apart and 6 in. between the individual plants. Another plan is to sow thickly in a box in January, and place them anywhere under glass, or in any warm, sheltered place and transplant as above stated, pressing the soil firmly about them. These early plantings will, of course, only be on a small scale, for the purpose of securing an early dish or two, as early in February will in most places be time enough to plant the main crop, which may consist of some of the Long-pod section. The Green Long-pod is a good variety for general purposes, and the Seville Long-pod is a very fine Bean. Plant again for succession in April, and the Broad Windsor for the latest crop about the middle of May, in double rows 2 in. to 3 in. deep, and the rows should be 2½ ft. to 3 ft. apart; cover the surface of the soil with ashes as protection from mice, and earth up when about 3 in. or 4 in. in height. When well in flower nip off the tops; this throws back the strength of the plant into the crop, and if, as frequently happens, the young growths be infested with black aphides, it will be the means of clearing them off. When all the pods are picked off, as soon as they are fit for use, it frequently happens that new growths will break away from the lower part of the stem and produce a good late second crop. It may not always be advisable to leave them for this purpose, but it is as well to have the choice of doing so, and they rob the land less in this way than if a part of them be left to get old before being pulled up. The soil most suitable for this crop is a strong, heavy loam, but a fair return may be expected from almost any soil; light land should be made firm before planting.

Early Frame Potatoes.—In the last week in December we mix together about ten cartloads of leaves and stable litter in equal parts. After letting this lie for a week, it is packed firmly 2 ft. deep, in a large frame covered with glass sashes, and heated when necessary by a flue. Soil to the depth of 8 in. is placed on the top of the manure, and the surface when finished is about 2 ft. from the glass. Drills 4 in. deep and 15 in. apart are then drawn and the sets put in 6 in. apart, and covered over to the original level. In a week the manure underneath sends up a gentle heat, which it continues to do until the haulms meet between the rows, With this assistance they grow very quickly to this stage, and as fire-heat is never applied, and the plants not being far from the glass, they do not become drawn or weak. Air is admitted freely during the mild days in March, and they are watered three times—first, shortly after being planted; again, when they are about half grown, and finally about a fortnight before we begin to lift them. The soil in which they are planted consists of about half decayed leaves and the remainder loam. After the Potatoes have been all lifted, the pit will remain empty for a month or two. About the end of August the soil will be turned over, and the whole will be planted with Dwarf Kidney Beans; these will furnish gatherings until near Christmas; then they will be cleared out, the soil thrown on one side, all the decayed manure removed, when a fresh supply will be at once put in, and the Potatoes planted again. This I consider to be making the best of a large frame, as few vegetables are more acceptable than fresh Kidney Beans in November and December, and ripe new Potatoes in April and May. I find Bresee's King of the Earlies better than any of the Kidney varieties.—J. M.

Tomatoes under Glass.—Tomatoes out-of-doors have again in some places proved a failure this season. The wholesale manner in which the half-grown fruits have been attacked and rendered useless has been a serious disappointment to many, and ought to teach us to make the most of every spare corner under glass where a few plants could be accommodated. Many such places may be found where, with a little ordinary care, a crop of fine Tomatoes might be depended upon, as I have never yet seen or heard of a single fruit under glass being attacked with the disease; and, what is more, a good supply is kept up until late in the season. I could have gathered nearly a bushel in Christmas week last year from such places, and hope to do the same again this year. Tomatoes are highly esteemed here; I therefore try to make their season as long as possible. I do not grow many plants, having repeatedly proved that one good plant properly attended to is worth twenty half-starved ones. My earliest supply, from the end of May to July, I get from pots in the early Vineries. I need not describe the treatment which they receive, as it is the general crop about which I wish to speak. Now for this, I have only six plants planted out against the back wall of a late unheated Peach house; they are planted singly between the Peach trees, and occupy the vacant space that will eventually be covered with them as their growth extends. The Tomatoes were planted in May, and were carefully trained and stopped in the usual manner, each plant occupying now a space of 70 sq. ft. or 80 sq. ft. I have not kept an account of the number of fruits gathered, but the crop has been a very heavy one, and the plants promise to keep up a good supply of fruit for months to come. I may safely say that the fruit would average about thirty dozens on each plant, and fine fruit too. I have come to the conclusion that if I have only room for one plant under glass I will never again be troubled with any outdoors, and I would strongly recommend others to do the same. The sort I have grown this year is Hathaway's Excelsior. It is the handsomest and most prolific variety I have ever grown.—H. H.

Autumn-planted Potatoes.—"Gardener," at p. 396, tells us that last year, as an experiment, he planted ½ bushel of Myatt's Ashleaf in October, the tubers being placed 18 in. apart and 2 ft. from row to row, &c., and that better Potatoes could not be wished for, while the same variety planted in spring turned out a complete failure. Now, even supposing this, I beg to ask our correspondent how he can account for such an occurrence? Considering this has been the best season for Potatoes we have had for years, and good sound samples so cheap, and that fully ninety-nine per cent. of these were spring-planted, I conclude your correspondent must have either sadly mismanaged or neglected his spring planting. Otherwise, let me ask, how did "Gardener" and the rest of the world get on for Potatoes before this "new idea" first emanated from a "Country Parson"? Further, a line must be drawn somewhere as to distance in planting; 2 ft. by 18 in. is, to say the least, a most ridiculous waste of ground; 18 in. by 9 in. is sufficient space for any variety of Ashleaf.—THOS. COWBURN, *Sunbury Park.*

Growing Mushrooms.—No time should be lost in getting the materials together for the Mushroom beds, as this is the best time for their construction, in order that they may last through the winter months; a second set should be made in February or March, according to circumstances. The best plan in collecting the droppings is to have a barrow or hamper under cover near the stable to shelter them from rain and empty them every day into a dry shed and spread them out. Add to the droppings (leaving the short litter in) one-third of turfy loam chopped fine and mixed well in, which makes the bed of a more natural character and produces Mushrooms of a more solid texture. Make up the bed by instalments every eight or ten days instead of exhausting the chief growing qualities of the material by drying it. The beds should be from 12 in. to 14 in. deep, and should be trodden as firm as possible; the firmer they are the steadier the heat and the longer it is retained. A trial stick should be put in and when the heat declines to about 75°, pieces of spawn, about 3 in. square, should be inserted from 10 in. to 12 in. apart and about 1 in. deep; then cover the bed with about 2 in. of good stiff loam, beat it down as firmly as possible, and finish off by slightly damping the surface with water and smoothing it over with a clean spade. Again use the trial-stick to ascertain the temperature; and if it should decline, put on some fresh litter from the stable or some hay, to retain a uniform heat and thus keep the spawn in action till it has run well into the bed; when this has been accomplished a good crop may always be depended upon. Avoid violent heat, as it destroys the spawn, and invariably keep the beds covered with litter or hay, so that uniformity in both heat and moisture may be maintained and the bed may continue longer in bearing. When the bed has been in bearing for a time and begins to show signs of exhaustion, carefully remove the litter and give a good watering with manure water made of sheep or cow dung, and used at a temperature of 80°, replacing the litter when the operation is complete. This invigorates the spawn and produces a second crop almost equal to the first.—J. S.

FRUIT.

HINTS ON PEAR TREES.

THE Pear is one of the hardiest and most vigorous of fruit trees; it is capable of adapting itself to soil and situation even better than the Apple. But the situation must be well drained, or there will be a difficulty under any system of management in maturing the wood. On deep dry soil there is no necessity for Pears to be worked on the Quince stock. It is on shallow soils resting on wet cold clays which even when drained cause so much soft spray to be produced that the value of this stock is seen and

Upright Cordon Pear Tree.

appreciated. Much has already been written on the preparation of the soil before planting, and in the necessity of checking the descent of the roots into a bad subsoil by surface-mulching. Summer pinching and thinning the fruit are all important matters in Pear culture, and success will in a great measure depend upon the way in which they are carried out. Pears are especially adapted for espalier training, and a good fruit-bearing tree is more quickly formed than even in the case of the Apple. But as the Apple does not easily assume a pyramidal outline, so the Pear is not readily converted into a dwarf standard. But where espalier training cannot be adopted, the pyramidal is the best and most useful form. The trees should be planted 6 ft. apart, and may be allowed ultimately to attain a height of 8 ft., which will be high enough for a small garden. Of course care must be taken that the tree is properly built up, as in the case of the espalier, if the leaders be allowed to grow too fast, the lower part of the tree will not be well furnished. A wire hoop fixed to three stout stakes will form a very good base for training. When the tree is first headed down after planting, the best and most centrally placed of the young shoots should be selected for the leader and trained up vertically, and the others should be trained at equal distances apart horizontally, and fixed down to the wire to form the base. It is important that a good foundation should be secured to the future tree before the second tier of branches is formed, and this is entirely a matter of pruning and training. Much can be done in summer (about the end of July) by pinching a strong shoot or

drawing its point downwards, and by that means driving the sap into the weaker branches. The leader may be pinched when it has grown about 18 in., in order to throw the strength into the lower buds. At the second winter's pruning the leader must be cut back to within from 6 in. to 1 ft. of the base of the new wood, this depending entirely upon its strength and the strength of the tree generally. Again, the best shoot must be selected for the leader, and the others tied or linked down to the shoots made the previous year. This course must be followed until the tree has attained its allotted size. If it have proved successful, the shape will be a perfect cone, with the points of the branches assuming a weeping or pendent form. In the event of a good selection a small plantation of pyramidal Pears will in the course of a few years turn out to be a most interesting and profitable experiment, involving but a slight expense and an inconsiderable amount of labour, and that, too, of an agreeable kind. Pinching a strong shoot, and drawing its point downwards at the proper time, calls rather for intelligent observation than practical skill, as the term is usually applied, and the man who has had no experience in fruit culture, if thoughtful and penetrating, may obtain as much success as the practical cultivator, especially if the latter be imbued with prejudice and preconceived notions, and too much given to rule-of-thumb work.

The accompanying woodcut shows a capital way of growing Pear trees in small gardens. The trees are kept within bounds by pinching as above described, and if needs be by root pruning. Such trees may be planted 3 ft. or 4 ft. apart, and tied to a single horizontal rail. A hedge is thus formed and space economised.

Pruning Orchard Trees.—After the fall of the leaf is a good time to notice any irregularly of growth in orchard trees, and this may then be rectified in a short time, always bearing in mind that, in the case of large limbs being removed, the wound should be covered with some preparation to shelter it from the weather. Gum shellac dissolved in alcohol, or even cow manure bound on the parts exposed, answers the purpose. A handsomely formed tree is not alone valued for its appearance to the eye; it is in reality more useful, as the crop of fruit is then usually more evenly distributed over the branches.—A. N.

Hardy Grapes.—I have fruited the following collection of hardy Grapes in a glass-covered wall without any artificial heat: Grove-end Sweetwater, Royal Muscadine (the Chasselas Fontainebleau of the French), Pearson's Ferdinand de Lesseps ripened in September, and its peculiar Frontignan flavour was richer than when forced in the hothouse. Buckland's Sweetwater and the Esperione, a black early Grape, ripened in the middle of October, and were finely coloured and better flavoured than when forced early in the houses. Welbeck Black Tripoli, a variety of the Hamburgh, ripened perfectly at the end of October, as well as the Trentham Black.—W. T.

Heavy Pears.—I have gathered some Beurré Bachelier Pears; the weight of one was 1½ lb., six weighing 8¼ lb. One Doyenné du Comice weighed 11 oz., six weighing 4 lb. Six Glou Morceau weighed 4 lb.—S. C., *Dover*.

Training Peach Trees in Houses.—I have a suggestion to make with reference to the planting of trees in a Peach house which may be useful to some of your readers. About eight years ago I built a wooden lean-to, 33 ft. by 10 ft. Against the back were planted three trees, and, of course, it was a prime object to get plenty of sunlight for them. The idea therefore occurred to me to plant the other trees, not so as to be trained against the glass, as is usually the case, but edgewise—say that the house faces the south, then the trees in front of those on the back wall would face east and west. This is done in the following manner: Leave breadth enough for a walk along the front of the trees on the back wall, say 3 ft. wide; place two strong lengths of wood in a sloping position, resting on the ground and reaching a rafter of the roof, to which both are nailed, thus forming the two legs of the letter A. These legs may be about 5 ft. apart at the bottom, meeting at the top, and according to the height of the roof they would be about 8 ft. to 9 ft. high. Place another pair of Λ shaped legs at the front of the house, which, of course, will be much shorter; then run wires from each leg of the higher back A to those of the front A, and you will have two wire trellises 5 ft. apart at the bottom and meeting at the top. Continue these all along the house, and there will be some four or five such double trellises. Now the advantage of planting thus are, first, there is no shade to the back wall; second, the trees can be easily got at on both sides; third, the surface exposed to the sun is nearly twice what it would be if the trees had been trained up against the glass; fourth, a greater number of trees can be cultivated, thus continuing the crop through at least three months, and supplying a variety of kinds. The experience of eight years teaches me that these smaller trees thus planted are as prolific as they can be, and the wood ripens as well as if they had been placed so as to face the full south.—T. R. J.

TREE AND OTHER PÆONIES.

Pæonies, with their crimson, pink, white, and other coloured flowers produced during a great part of the months of May and June, were long great favourites in gardens, although they are now somewhat neglected—probably owing to the fact that they are so large, that in small gardens they would occupy too much room. There are, however, generally to be found, even in gardens of limited size, spots so much shaded that scarcely any flower will thrive in them. In

Fern-leaved Pæony (P. tenuifolia).

such places Pæonies would grow luxuriantly; the colour of their blooms would, in many cases, be even more intense, and they would last much longer than flowers fully exposed to the sun. They may therefore be made useful as well as ornamental, even in small pleasure grounds, although the proper place for them is undoubtedly the fronts of large shrubberies, plantations, or by the sides of carriage drives. Where distant effect is required no plants so admirably answer the end, as their size and brilliancy render them strikingly visible, even at long distances off. Planted on either side of a Grass walk, the effect which they produce is admirable, especially in the morning and at or near sunset, and when planted in masses, as, for instance, in beds in pleasure grounds, they are invaluable for lighting up sombre nooks.

Among the older forms, the best are P. officinalis rubra, rich deep purplish-crimson; officinalis rubescens, double bright ruby, and very fine; and edulis or albiflora, another original species, of which there are several fine varieties. Of newer varieties, the following are worthy of attention: Alba superba, Auguste Van Veert, centifolia rosea, Charles Binder, Duc Decazes, Eugène Verdier, Gloire de Douai, Jeanne d'Arc, lilacina, Madame Margottin, Madonna, Mrs. Hartnell, Prince Charles, pulcherrima, purpurea, The Queen, and tricolor plena. Some of these are of great size and beauty. P. tenuifolia, which we now figure, is not so showy as some of the kinds mentioned, but it is well worth growing.

Tree or Moutan Pæonies are a most important group of plants from an ornamental point of view. They form, as is well known, robust, early spring-flowering shrubs, varying from 2 ft. to 4 ft. and 5 ft. in height, and bearing blossoms of extraordinary size, brilliancy, and beauty. They succeed well in all ordinary garden soils, exclusive of peat, unless found upon a deep dry sub-stratum. Blooming, as they do, early in the year, they occasionally require some slight protection to preserve the blossom-buds from late frosts. I have seen them used with good effect on Grass plots. They have a fine appearance in a mixed border of shrubs. Their blossoms are of various shades of colour, from paper-whiteness to the most brilliant crimson and purple shades, and the plants are of such free-blooming habit, that they become literally covered with their immense blooms during the summer months. They may be transplanted either in autumn or in spring before they make their growth. They are propagated by root-division, by grafting on the roots of the herbaceous varieties, by taking cuttings from the young shoots in spring and striking them under glass in a little heat, and by layering young shoots after ringing round each bud, so that each bud forms a plant. Of Moutans some of the best varieties are alba grandiflora, atro-purpurea, carnea plena, lactea, lilacina ocellata, papaveracea, and the white and red double forms; purpurea, Robert Fortune, Rollissoni, Rosa Mundi, Triomphe de Gand, Triomphe de Malines, versicolor plena, violacea purpurea, and Zenobia.

Soil and Propagation.—Pæonies grow best in light sandy loam, and need but little attention, digging round and manuring in the winter, and some care in tying them up neatly in spring being all they require. They may be readily increased, but it is most injurious to divide the roots too often, as in that case the constitution of the plants is weakened, and they generally take some time to recover their usual vigour; nor should they be dug up and removed too frequently, as this checks their growth for a season at least. R.

Lifting and Storing Dahlia Roots.—There are many different ways of storing Dahlias. The best I know of is to select a thoroughly dry day for lifting the roots and then to carefully cut the top off about 1½ in. or at the most 2 in. from the ground, the very best instrument wherewith to effect this being a sharp pruning knife. The roots should then be laid on any old stages that may be useless in the houses, or, failing these, on a few boughs, which, if placed so that the air can pass freely between them, would answer the purpose equally well. A pointed stick may be used to pick out the soil from between the roots, which the operator must be careful not to injure. Rather than run the risk of this it is better to let a small portion of the soil adhere to them. If the weather is fine the roots might lay out-of-doors for two or three days, care being taken to cover them at night; but if rain appears likely to fall, it would be best to take them into a shed or inside of a Vinery, on the border, at the back or under the stage of which they are not noticeable, and where the ventilation that is required to keep the other things healthy in the house will also prevent the Dahlia roots from damping. In case of a new variety or one that is weak it would be advisable to lift and pot it, placing it in a dry place with the others. Different growers have different methods of storing, such, for example, as laying the roots in a shed, and covering them with straw, ashes, and sand. In some instances each variety is tied up separately in old pieces of fish netting or matting, and suspended to the walls or roof of a warm shed. By such drying modes of storing, the tubers become very shrivelled and are much injured, but in the method I have described the only objection is the somewhat untidy appearance that it gives to the house.—H. G. W.

Primula cortusoides amœna.—All who have a fondness for beautiful spring flowers and have not this Primula and its parti-coloured congeners should at once secure plants, as they are now at rest, and can be easily sent by post in a very small space if shaken out free from soil. Those who have plants will find this to be the most suitable time to propagate them or to repot up either into small pots singly or in large pots in quantity, as desired. When the old plants are shaken out it will be found that a number of crowns are developed, each one having a portion of root attached. If each one be potted up singly into small pots they will

make strong plants in the spring, but in order to produce a good head of bloom, it is best to put several crowns into an 8-in. pot in good fine soil, enough of which should be placed over the crowns to almost cover them. Early in the spring these will push growth, and soon a perfect head of remarkably handsome foliage is produced. The flowers are well thrown up, and, whatever their hue of colour, make a very pleasing pot plant—indeed, I believe this family of Primulas to be one of the most beautiful of the whole genus. Primula cortusoides amœna, because of the rich hue of colour and the stiff erect flowers, produces a most effective mass of colour in the spring garden. For bedding, plants should be turned out of pots early in spring after good growth has been made, as they cannot then be injured by frost. In addition to amœna, lilacina is a very fine lavender-coloured form, grandiflora alba has large pure white flowers, and grandiflora rosea has very large flowers that are white above and red below.—B. D. F.

Belladonna Lilies.—Eight or ten years ago I purchased a number of bulbs of this really handsome Lily at St. Saviour's, Jersey, a portion of which were potted in the same way as Lilium japonicum would be ; the rest were planted in one row 6 in. deep, in rich soil, and 6 in. apart, close to the south wall of a hothouse. Those in pots I could not induce to bloom, probably from neglecting to water them when they were growing, but the bulbs that were planted near the wall made some progress the following year, and produced a few blooms. As they gathered strength, the bulbs, and, consequently, the blooms, increased in size, and are now a fine sight. In a few weeks they will begin to make new growth, and this must be protected from frost by a thin board reared against the wall. In spring the foliage will grow rapidly and attain a height of 15 in. or 18 in., finally ripening and dying by the end of the summer. During May and June occasionally soak them with liquid manure. We all know, or ought to know, that except strong, healthy, and well-matured foliage is produced, it is in vain to look for satisfactory flowers or fruit. The present is the best time to plant these Lilies, and they may be purchased from all seedsmen who sell collections of bulbs. I am informed the supply is somewhat limited ; therefore I should advise all who care to attempt their cultivation to make their purchases at once. The bulbs must remain where planted for many years if a fine display of bloom is desired.—R. S. Y.

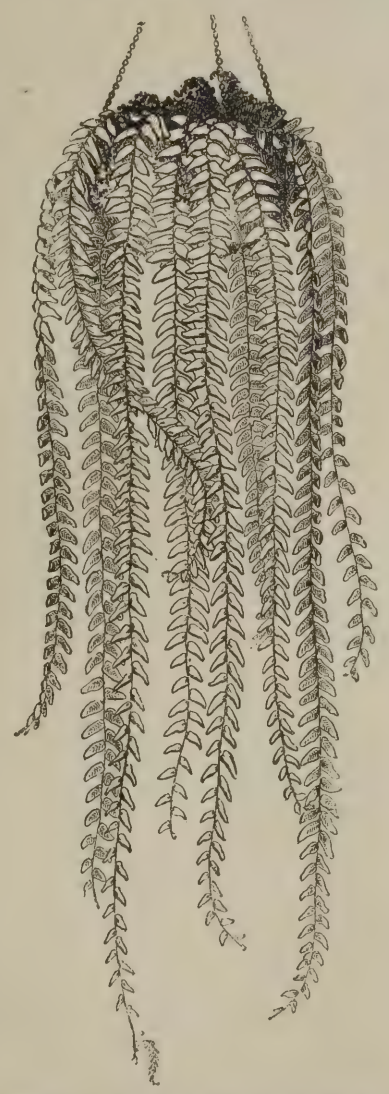
The Best White Edging Plant.—If I were asked to name the most useful, and at the same time most lovely, of the dwarf white edging plants now in use, I should say Achillea umbellata. It is perfectly hardy and certainly requires less manipulation than the dwarf Cerastium tomentosum. The latter requires renewing every year, whereas the former will be as effective the second and third year as the first. For carpet bedding it is a gem in every way, and only requires to be known to be appreciated. It is easily increased by cuttings taken off in September or October and dibbled in very thickly under a wall. We have thousands planted under the foot of a west wall, and they give no more trouble than this—after a severe frost in spring to sprinkle a little sifted leaf-mould over the cuttings, and with the hand press into the soil those that have been forced out by the frost. The few leaves falling from the fruit trees give sufficient covering now until rooted, after which they will take care of themselves.—C.

Tulips.—If the soil is in good condition these should be planted at once. It is always best to have some good fibrous loam under cover to place on the surface of the beds ; this should be free from manure, but the soil should be rather rich underneath. An old author says, "The Tulip asketh a rich soil and the careful hand of the gardener." When the beds are ready begin to plant at once, making a hole with a small trowel, and putting in a little fine dry sand, then the bulb, and over it a little more sand ; then cover all with loam to the depth of 2 in.

Hardy Lady's Slipper.—These are now, to all appearance, at rest, but on examination it will be found that the roots are growing, and that the stem for next season is in an incipient state. Now is the time to re-pot them. Shake all the soil from the roots, fill clean pots half-full of potsherds, and then repot in equal portions of fibrous loam and fibrous peat, mixing some bits of charcoal amongst it. Plant a little Sphagnum on the surface, and if this is just kept in a growing state during winter that will afford sufficient moisture.

Phloxes, Delphiniums, Pyrethrums, &c.—These have now assumed the sere and yellow leaf. The stems must all be cut over close to the ground. Stir the surface soil well up, and keep the beds and borders free from weeds.

Basket Ferns.—The genus Asplenium contains many beautiful species, and, being found in all parts of the world where Ferns grow, they are adapted for the hardy, temperate, and tropical Fernery. Some, from their trailing habit, make desirable basket plants, as will be seen by a glance at the accompanying illustration of A. longissimum, an elegant species with



Greenhouse Basket Fern (Asplenium longissimum).

fronds measuring from 3 ft. to 6 ft. and sometimes 9 ft. in length. Its bright ebony rachises and olive-green shining pinnæ also add greatly to its beauty. It is a native of the Indian Archipelago, and was introduced into this country some years ago by Messrs. Veitch & Son, of Chelsea. The most suitable baskets for it are plain hemispherical wire ones, well painted, and the soil should consist of three parts turfy peat, one part loam, and one part sand. Before inserting the plants the sides of the baskets should be lined with a layer of peat, and a few large potsherds should be placed at the bottom for drainage—an important point even in the case of baskets. The spaces between the roots and the sides of the baskets should be made up of the above compost mixed with pieces of charcoal or potsherds, in order to allow the air to permeate the soil. A few rooted cuttings of Ficus minima or F. stipulata would, if inserted in the sides and pegged down, hide the soil from view. Panicum variegatum, Tradescantia zebrina, Selaginella Kraussiana, S. uncinata, and S. Galeotti would answer the same purpose, and are, moreover, themselves attractive. The spores (seeds) of A. longissimum rarely germinate, but it can be propagated freely from the bulblets, which are produced at the end of almost every frond ; these grow rapidly, and in about three years make fine specimens. Several allied species are also adapted for basket culture, such as the graceful A. furcatum, which grows plentifully on trees in the warmer parts of both the Old and New World, and which has a very ornamental appearance ; A. flaccidum, a fine species with deeply-cut, drooping fronds of a succulent character, also makes a good basket plant, as does likewise A. nitens, though smaller than the preceding ; A. rhizophorum and its numerous varieties make desirable specimens, especially the variety called rachirhizon, the fronds of which taper into long whip-like appendages, the whole frond reaching some 2 ft. in length. A. lineatum, a native of Mauritius, with fronds from 2 ft. to 3 ft. long, cut into numerous linear segments, makes an excellent cool conservatory plant.

Preparing for Spring.—The chief interest attached to spring gardening is the fact that it seems to open up to us a new floral world. What an infinitude of material it brings to the surface ! Double Daisies, single and double Primroses, Polyanthuses, Violas, and Pansies ; Arabis, Aubrietias, Alyssums, hardy Primulas, Saxifrages, Wallflowers, perennial Cheiranthus, Iberis, Anemones, Myosotis, Sedums, hardy annuals of kinds, and innumerable plants, all of which, if cultivated and properly grown for the purpose, will produce masses of colour and charming effects. To the lover of spring flower gardening how welcome is the time when the tender exotics of the summer bedding are sent into their winter quarters, and the beds are ready for winter planting ! What an additional pleasure does this labour bring in the knowledge that, whilst in gardens where there are no spring flowers the beds will be flowerless for the next seven months, in those where spring flower gardening is carried out not only will the beds be full all the year round, but the blooming period will begin in March, and thus add three months to the ordinary floral season. The late rains have not only got the soil into capital order for planting, but all sorts of spring flowers are pushing up strongly, so that the work of separating and increasing the stock may begin at once. The Primrose is the queen of spring flowers—a universal favourite with all, and the new, richly coloured forms are like so many gems set in a green groundwork. Pansies and Violas will also need immediate attention, as these will admit of being pulled to pieces, and will furnish plenty of well-rooted plants. These, put out in rich soil, will flower early, and produce masses of gay colours. Daisies also now require the same treatment, for no spring flower garden is perfect without a sprinkling of these "wee modest flowers," the variegated kinds especially being very striking all through the dull winter months. Spring flower gardening is not essentially of the "bedding" order ; on the contrary, it may be done in any fashion, just as may best suit the taste of the operator ; but spring flowers are essential to the perfect enjoyment of any good garden, and it is only those who have become familiar with them that can fully realise the inestimable pleasure which they afford Where spring flowers are not used, and it is desirable to give flower beds a cheerful appearance during the winter months, they should now be filled with various hardy plants which have been kept in store for that purpose.

Mignonette for Cutting Now.—It is a good plan to sow Mignonette seed in some out-of-the-way spot during the month of June, as it germinates speedily after the first shower, and grows into strong flowering plants by the end of September. If the spot be slightly sheltered by trees the plants will not be affected by the earlier frosts, and as a considerable interval often elapses between these and severe winter weather it is easy to secure an abundant supply of sprigs of this fragrant flower long after other tender plants are over. There is no finer and more useful Mignonette than Parson's Giant white variety, as it grows rapidly, and has long neat branches and flowers that are whiter than those of any other kind. From self-sown plants of this kind I can now cut, at any moment, handfuls of sprigs that are most acceptable at this period of the year.—D.

Cutting Down Herbaceous Plants.—I think some hints as to the ways of protecting choice half hardy and Alpine plants would be useful at this time. I do not think it is the frost which kills the plants, but the alternations of wet and dry. At p. 404 it is stated, "Cut Phloxes and Larkspurs over close to the ground." I think it better to leave the stems of my herbaceous plants 5 in. or 6 in. high, as they are a great protection from frost.—E. A. H.

Lilium auratum.—A friend of mine this year purchased a 1s. 6d. bulb which was placed in the open ground, the soil being sandy and the situation as much exposed as possible. The result was a magnificent spike of bloom, on which I counted thirty-three flowers, all of large size. I should, perhaps, state that the stem was abnormal, *i.e.*, flat, like Asparagus heads occasionally grow. This may account for the large number of blooms.—W. E. G.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 15.—Cleaning among herbaceous plants; potting Ghent Azaleas for forcing; shifting large herbaceous Calceolarias in 24-in. pots; re-boxing Ivy; putting cuttings from cold and damp pits on shelves in Vinery; planting out Guernsey Lilies under a warm wall, also Roses, manuring them and giving some of them fresh soil; planting Horseradish; putting some Cinerarias into slight heat, also Seakale, Asparagus, and Rhubarb; filling up empty frames with Lettuce from under wall; taking up more Schizostylis and Narcissi, also more Cauliflower; nailing wall Plum trees; putting Roses (Tea-scented sorts) into a cool Vinery; getting all Violets in pots into frames; covering up Globe Artichokes with straw; protecting seed Potatoes; laying all fresh potted Roses out-of-doors on their sides and plunging them in straw.

Nov. 16.—Digging flower borders; planting Fig and Peach trees, Raspberry canes, also Anemones, giving the latter manure and sand; putting in Hyacinths, Tulips, Dielytra, and Lily of the Valley to force; finishing all north-wall nailing; making a new Mushroom bed.

Nov. 17.—Potting some Azalea pontica; making a pit ready for forcing flowers, keeping it at 65° at night and 70° by day, slightly syringing when necessary; nailing Apple and Pear trees; putting hand-lights over Cauliflowers; looking over bedding Pelargoniums and cleaning them; all Vines pruned now except late ones; shortening Rose shoots a little in order to keep wind from rocking the plants; running dirty water out of boilers.

Nov. 18.—Sowing Mustard and Cress regularly; layering some Cucumber shoots in pots for early spring work; finishing planting old bulbs out-of-doors; planting out February Cucumber plants; put in some Indian Azaleas to force for flowering by December 30; taking the Roman Hyacinths in flower out of heat; syringing Gardenias with soap-suds once a fortnight; watering Asparagus just appearing; also top-dressing Oranges and giving them some Standen's manure; stirring the soil amongst frame Violets.

Nov. 19.—Potting Lilies in peat and sand, and plunging them out-of-doors overhead in sand; planting out Sweet Williams and Wallflowers, taking them up with large balls, also climbing Devoniensis Roses in conservatory; taking up some Anne Boleyn and White Pinks for forcing and potting them; spreading out seed Potatoes in cellar to keep them from sprouting; giving Gardenias a top-dressing of turfy loam and Oak leaves; earthing up winter Cucumbers weekly, ½ in. at a time; pruning all Roses for forcing.

Nov. 20.—Digging borders and manuring highly for Roses; putting in second Seakale to force; wiring Wallflower beds to keep off rabbits; Neapolitan Violet border manured and fresh soiled with rich material; examining Grapes and cutting out decaying berries; freeing cuttings from dead leaves.

Flower Garden.

Presuming that the flower beds have been filled, either with material for winter effect, or with spring-flowering plants and bulbs, there will now be little else to do in the flower garden except the maintenance of neatness, which is a matter more than ever desirable at this dullest of all seasons of the year. In other portions of ornamental grounds, which are generally designated flower gardens, there may still be found abundant work, such as thinning out clumps of shrubs, or planting additional ones or single specimens, of either deciduous trees or evergreens. Any tree or shrub may at this season be moved with safety. Of late years there has been such a demand for Coniferous plants, and particularly within the last two or three years, for the Japanese kinds, that deciduous trees have become neglected; and, granted that this class of plants is interesting and beautiful, still, at the present rate of planting them, combined with a proportionate neglect of deciduous trees, ornamental grounds a few years hence will present more the appearance of cemeteries than that of pleasure grounds. To prevent this in all new planting there should be a judicious admixture of the finer deciduous trees, such as Acacias, Maples, Thorns, Turkey Oaks, Tulip trees, Liquidambars, Purple Beeches, Lombardy Poplars, Spanish and Horse Chestnuts, &c. In forming clumps of shrubs also evergreens are often too prominent, whilst flowering deciduous shrubs, such as Lilacs, Deutzias, Snowberries, Spiræas, and Weigelas, which are in every way suited for association with the dwarfer-growing evergreens, are neglected. Half-hardy plants that are to winter in the open air should now receive partial protection by surrounding the base of the plants with ashes, Cocoa-fibre, or bracken, and some of the choicer Ferns and rock plants will require the same attention. Dahlias, Gladioli, Tigridias, and Marvel of Peru should all now be dug up and dried previous to finally storing them away. The ground is so full of moisture that it will scarcely be safe to leave Cannas out for the winter, as a sodden state of the ground is more fatal to them than severe frost. If lifted the roots will winter safely in any place from which frost can be excluded. This is the most critical time for the well-being of bedding plants; damp is their great foe, and therefore water but sparingly, and keep the hardier kinds well exposed to induce sturdiness. Tender kinds, such as Coleuses and Alternantheras, will not winter successfully in a lower temperature than 65°, and they must be kept well up to the light.

Auriculas.—Remove from beds of alpine Auriculas out-of-doors all decaying leaves, and destroy weeds before they grow to a large size. The surface of the beds should be loosened either with a small hoe or a pointed stick. Slugs are very fond of the leaves, and perhaps the best way in which to destroy them is to pick them off at night. For out-of-doors culture seedlings are better adapted than choice named sorts. A packet of seeds costing about half-a-crown would produce as many plants as would plant a large bed. It is not the time to give precise instructions as to sowing the seeds, as March is a good month for that operation; they are, however, easily raised, and the plants can be grown on to a flowering size with but little expense or trouble. Alpine and show Auriculas thrive well on sheltered banks, planted amongst lumps of stone or clinkers, in such a position that it is not possible that water can lodge about the collars of the plants. However much these fine plants may be valued for frame culture, it is even more desirable that they should be introduced wherever practicable as hardy occupants of the flower garden.

Carnations and Picotees.—Near London growers do not think of planting choice varieties of Carnations and Picotees out-of-doors to stand over the winter, and yet so far north as Newcastle-upon-Tyne this is done successfully; growers there will now be making arrangements to plant. If the plants are put out in the spring such good flowers are not obtained. When the plants are put out a small stick is placed to each, in order to prevent the wind from snapping them over, and the surface of the beds has to be covered with some dry, rotten stable manure. This mulching prevents the plants from being thrown out of the ground by frost, and also further helps to steady them. Damp is one of the worst enemies with which the Carnation has to contend; even intense frost is not so injurious.

Hollyhocks.—If the choice varieties have not yet been taken up, this ought to be done at once, and no time should be lost in potting them. The roots should be cut back considerably, and all old leaves removed, in order to allow the young growths at the base of the stems to develop themselves. Do not overpot nor squeeze the roots into a pot not large enough to contain them, although that is better than over-potting. See that the young plants are kept free from red spider and other pests. If the plants have been put out in a cold frame the leaves will continue to decay in damp, foggy weather; let them be removed at once to prevent further injury. Some take off the cuttings from the base of the stem now, but this is only to be recommended if there be so many that they would injure each other during the winter. January, February, and March are the best months in which to propagate for late flowering plants. See that the frames are freely aired, removing the lights as often as possible with safety.

Pansies and Pinks in Beds.—Any plants that seem as if they would not form free-flowering healthy specimens should be removed, and others taken from the reserve stock to fill up their places. It is necessary that this should be done in the case of scarce sorts that are weakly. They should be taken out and be repotted in small pots, or they may be lost altogether. Pinks may be treated in the same way. A pair of plants should be wintered in a 3-in. pot, and treated in the same manner as Carnations and Picotees. If there are any vacancies in the beds of Pinks they must also be filled up from the reserve stock in pots kept for this purpose.

Forcing Pinks.—These are now, or ought to be, well established in their pots. Go carefully over the plants and remove all dead and decaying leaves. Stir the surface of the soil, and press down the plants gently by placing the fingers near the stems. Give plenty of air at night as well as by day, unless there is danger of frost.

Glasshouses.

All the remaining stock of Gloriosas, summer-flowering Gesneras, Gloxinias, Achimenes, Caladiums, &c., will now require to be put to rest, but avoid the common error of keeping them too cold, or placing them under stages near pipes that are sometimes too hot and at other times the opposite. In such places the soil frequently gets wet with the water that runs from plants on the stages above, and, if severe weather comes, necessitating the use of considerable fire-heat, the roots get too much dried up. While at rest, the temperature of an intermediate house will suit them best, but where room in this way cannot be afforded, so as to allow their remaining in the pots in which they have been grown, let them be taken out and put in dry sand in boxes or paper bags.

Allamandas.—Where plants of these exist grown on the roof, either planted out or in pots, the time of putting them to rest will be dependent upon the purpose they are required for; if not needed in bloom until late in the spring they may still be kept on blooming, and at no season will their flowers be more useful than for some time yet, as when not exposed to an unusually cool dry atmosphere they last longer in a cut state through the winter than during the spring and summer; and where the house in which they are grown affords heat enough to keep them flowering up to the end of the year, and even beyond this, all that is necessary is to give as much water to the roots as required; but where they are wanted to bloom early, and consequently to be cut back about the beginning of the year, it will be better to now subject them to a drying process at the roots that will stop all further growth.

Æschynanthuses.—Where these are grown hung up in baskets and pots in the way they are seen to the best advantage, the soil should be kept as dry as can be done without causing their leaves to shrivel, which will permit of the shoots being now shortened back so far as deemed needful previous to their again commencing growth. The advantage gained by so treating these plants and others of like character that are hung up from the roof is that by the reduction in their heads they intercept less light from the main occupants of ths house.

Hoyas.—The drooping kinds, such as H. bella and H. Paxtoni, so useful for suspending like the Æschynanthus, if their shoots are not well shortened back each year, get into a long, straggling condition, and cutting them in now, as advised with the last-named plants, will answer equally well to deferring it until spring, providing corresponding care is taken to give them no more water than requisite; and when their heads are thus reduced there is a better chance of cleaning them from scale, bugs, or any similar insects with which they may be affected.

Gardenias.—Plants of these required for winter flowering should have the best position that the warmest end of the stove can afford. They are, more than many things, liable to drop their bloom-buds in the winter season, often when so far advanced as to be almost on the verge of expanding; extremes from any cause, either of being too dry or too wet at the roots, too much moisture in the atmosphere, too much heat suddenly applied, or the opposite of being too cold, especially after the

flowers have attained considerable size, will cause their falling off, although the mischief will not always be apparent for some weeks after, whatever may bring it about has occurred. The most effectual means for avoiding the flowers dropping is to keep the plants in as light a position as possible. The little G. citriodora, blooming as it does in such a small state, if grown in quantity will always be found useful, especially where many flowers are wanted for bouquets.

Amaryllises that bloomed late, and made correspondingly late growth, will now need keeping at rest. This refers both to the deciduous and evergreen kinds; the former are safe anywhere with the heat of an ordinary greenhouse, and will bear the soil keeping quite dry. The evergreen sorts should be kept sufficiently dry during the winter to get them fairly to rest; but, on the other hand, they must not be let to become so dry as to cause their leaves to shrivel, as where this happens premature loss of foliage is sure to occur, which reduces the strength of the bulbs. With young stock of the evergreen species the roots should not be further dried than will result from keeping the soil in a slightly moist condition.

Tuberoses.—There are few things that afford such a long succession of flowers as Tuberoses, for where enough are grown they may be had in bloom for much the greater portion of the year. Those who want to have them in good time should at once provide a sufficient quantity of roots, potting a portion up without delay, and keeping the remainder dry for the present, potting them at intervals. The American grown roots are held in much the most favour at the present day. Those who have had little experience with these plants often fail in getting the bulbs to start, generally through their decaying instead of forming roots, and to which they are very liable unless great caution is used in the matter of water; for if the soil is kept in anything approaching the moist condition that most other plants would need the mischief is almost certain to occur. We have succeeded best by potting them in soil in a comparatively dry state, and then standing the pots on the earthen floor of a pit, or some moisture-holding material slightly damp, from which the pots will usually absorb enough until the roots are well in motion, when they will bear the soil to be kept fairly moist.

Planting Fruit Trees.—The necessity for early planting and renovation of fruit tree borders has been so often insisted on in these pages, that nothing further need be added except that such work should, if possible, be brought to a close by the end of this month. Any that then remain to be done had better be deferred till vegetation again becomes active. From the foregoing it will be seen that we attach some importance to the season, or what may be termed the right time for planting; but after all, comparatively speaking, this is but a secondary consideration, as successful planting may be done any time from October to April; but we attach the greatest importance to the mode of planting; by which is meant not only the literal planting of the trees, but the proper preparation of the ground for them, and in doing this the first essential is good drainage. Every kind of cultivated hardy fruit, from a Peach to a Gooseberry, resents anything like a stagnant state of the soil; moreover, good drainage increases by several degrees its temperature, and, as a matter of course, this must aid the more perfect development of the fruit. The kind of soil that suits fruit trees generally is a calcareous loam of moderate texture—that is neither heavy nor light—but of necessity this matter must be subject to local considerations, as often the soil best suited for certain trees is not obtainable; but, though there is a best kind, they are by no means fastidious, and all soils worthy of the name can by a little outlay of time and money be made to grow fruit well. Light ground should be trenched very deeply, and, if procurable, heavy loam or clay should be intermixed with it, but if this be not obtainable, well firming will in some measure atone for its absence. Very heavy or clayey soils should also be trenched, and any sort of material that would render it more porous, such as mortar rubble, charcoal, and cinder ashes should be added, and it must be allowed to subside naturally, without artificial compression. Unless the soil be very poor indeed, no manure of any kind should be mixed directly with it, for the simple reason that the disposition of all fruit trees, when planted in rich soils, inclines towards the production of wood rather than fruit. It must not be inferred from this that manure is not essential to the production of good fruit, for it most certainly is, but never till the trees have fairly begun fruiting, and then annual surface dressings have the most marked effect, for thus applied, it is not only valuable from a fertilising point of view, but it tends to keep the roots near the surface, a position in which they are most benefited by the action of sun and air. All who have plenty of ground for kitchen garden crops should never think of encroaching on the fruit tree borders, and those who by the force of circumstances must thus crop, should at least allow each tree a fair modicum of space. Keep the roots near the surface; deep planting is an error. Above all, let them be well spread out, and the soil worked well amongst them with the hand, and afterwards let the trees be securely staked, for till that is done all fresh roots that may be made will, by the first gale, be destroyed through the swaying to and fro of the tree.

Vegetables.

Celery.—The last crop of Celery should only be about half-earthed up—that is, the ridge ought not to be brought higher than the centre leaves, leaving those exposed to the light until later on, to protect which sufficient material should be in readiness, in the shape of stable litter, dried Pea haulm, dried leaves, or, best of all, Fern. Where possible, secure a good supply of this useful material, which for all purposes of protection from frost is superior to all others. It must, however, be kept under cover, for if it is allowed to lie in masses and get wet, it will rot. It is now dead and in right order for gathering. A dry day may be chosen for cutting it, and it may be stowed until required under a temporary covering of any kind, or placed a couple of yards thick over Potatoes, Carrots, or Beet in the root-shed, and here kept until wanted. Not only is this Fern (the common Bracken) good for the purposes mentioned, but it is also invaluable for laying over beds of Hyacinths, or for placing round crowns of tender herbaceous plants, the collars of Tea Roses on their own roots, or for putting around the heads of standard Teas. It may be added that there is nothing objectionable or untidy in its appearance when thus used.

Potatoes.—It will be well to again turn over the crop of Potatoes and remove any diseased ones that may have escaped detection previously, as, if allowed to remain, they affect all they come in contact with. Even if there is a total absence of disease they are very much improved by turning over in this way if at all damp. To have Potatoes in the best condition they should be quite dry for a considerable time before using.

TOWN GARDENING.

RAISING PLANTS FROM SEED.

In the first place, as we have before urged, always buy the very best seeds, and get them from a well-known house or dealer. Cheap seeds generally turn out to be very dear. Also, when you buy plants or cuttings, get the best named kinds if you can, and pay a good price to a good man or house for a good thing. There is no need, as a rule, to buy a quantity, unless you want a great display at once, and can afford to pay for it. The best way is to get one or two plants of a good variety, and propagate from them yourself; this is much better than buying a lot of cheap rubbish. There is nothing over which an inexperienced person is so likely to be taken in as plants, unless you go to a really respectable place that has a reputation to keep up. Get your seeds in good time, and do not have it all hurry and careless work at the last. Remember that though spring does not come so early in town as country, yet things take longer to grow to a good size and get strong.

Time to Sow Garden Seeds.—Hardy annuals out-of-doors, end of March or April, and if a succession is required, at intervals up to the middle of June. Half hardy annuals, end of April or May out-of-doors. Greenhouse seeds for winter blooming (Primulas, &c.), in March under glass. Greenhouse or garden annuals, half hardy or tender, from April 1 to the end of May.

Soil.—For seed sowing out-of-doors, the soil should be rich and fine on the surface. Most things (annuals, &c.) are sown where they are to grow, and as such are rapid growers, the soil beneath can scarcely be too deep or rich. It should have been recently dug two or three spades deep, working in a quantity of rich, rotten manure especially deep down, and should not be trodden down or made hard, but just left for a few weeks to settle. Of course everyone knows that all digging and working should be done when the ground is dry; during frosty weather is the best. If in a border where there are shrubs or other things, and the ground has not, from this or other cause, been trenched previously, dig in some manure as deep as you can in the patches where the seeds are to go a few days beforehand. If not well settled, pat it down gently with the back of the spade, and rake the surface fine and level, picking out all stones, clods, or lumps, and giving a good watering if very dry. Have a basketful of rather fine sandy soil, such as the refuse from the potting bench, in a nice dry state, and a little fresh leaf-mould mixed with it if at all poor or spent. This should, however, not be too fine, or it is apt to become pasty when wet. Spread a little of this over the patch, and pat down gently with the back of the trowel.

Sowing and Thinning.—Sow the seed not too thickly, say six or eight seeds of large things, or twenty or thirty or more of small ones, and cover again with a sprinkling of the fine soil, but do not bury deeply, especially small seeds. If the weather keeps very dry, water gently with a fine-rosed pot to assist germination. When the seedlings appear thin them out if too thick, as by this means the rest grow stronger and flower finer. The thinnings of some may be transplanted if desired, as Tropæolums, &c., but Linums, Eschscholtzias, Mignonette, and some others do not like or cannot bear being moved. It is astonishing what a splendid display annuals will make if they are well grown, that is, in a deeply stirred, light, and rich soil, into which they can root readily, deeply, and strongly, and if they are properly looked after, weeded, thinned, and watered, when the weather is dry.

Seed Beds.—Many annuals, especially those that are not quite hardy, also perennials and biennials, are sown out-of-doors in what are termed "nursery beds." These may be made in any warm, airy, and light corner. They are better to be somewhat raised above the general ground level, and if a framework can be arranged over them and round, so as to protect them from heavy rains and cutting winds, they will be more successful. Have plenty of broken bricks for drainage at the bottom, or if the seeds are tender and want a little heat, and if you have no frame, it is well to make a heap of manure or spent Hops, and put the soil 3 in. or 4 in. deep upon that. If there is no fermenting material beneath, however, it will be better to have a greater depth than this, say 4 in. or 6 in. of rough and rich soil over the drainage, and 3 in. or 4 in. of nice fine sifted soil on the top, about equal parts of loam, manure, leaf-mould, and sand, or rather less of the latter, is about the best; this will do just as it is for pricking out young plants, but if for sowing seeds, have about 1 in. of fine, light, sandy soil sifted, such as leaf-mould and sand, on the surface. On such a bed as this, with a gentle bottom-heat, all such things as Stocks, Asters, Phloxes, Indian Pinks, &c., will come up easily, but they would be better under glass. These nursery beds, without the bottom-heat, will do well for planting out Stocks, Asters, and many other things to strengthen from the seed-pans say about the first week in May. From here they are planted out into the borders about the end of the month.

Sowing Under Glass.—Although it is much better to sow all but hardy annuals in frames, &c., yet many gardeners even in the country, where not nearly such care is requisite, are far too fond of coddling things and forcing them on in heat. Mimulus, for instance, one is nearly always told to grow in heat; now these pretty little plants are all but hardy, and the seed should be sown either in autumn (September), and pricked off into store pots or boxes, and kept in the greenhouse till spring, or sown in a moderately warm greenhouse or frame (45° to 50° in

quite enough) in January or February, be pricked out into a cold frame at the end of March or early in April, and by this means you will have such plants and flowers as no grower in heat can produce. Lobelias should be treated exactly the same, and not be left till April, and then have to be pushed on fast, with the result of weak and lanky plants and poor flowers. Phlox Drummondi, too, and Indian and Chinese Pinks, Asters, Zinnias, with many others, are far better raised in only a gentle heat (60° is plenty), or even none at all, than run up and spoiled in a Cucumber or other hot frame, as is so often done. Calceolarias (herbaceous) and Cinerarias, too, should never be raised in heat, as many direct; in fact, these plants shou'd never have more heat at any time than just enough to keep frost away, excepting, of course, where Cinerarias are wanted to bloom in winter.

In sowing seeds, especially in early spring, always use plenty of drainage (broken crocks or bricks) in your pots or boxes, or you will find your little plants "go off" at the surface of the soil almost as soon as they are up. When using pots we fill them nearly half full, and for boxes from 1 in. to 1½ in. is enough, if there are plenty of holes bored in the bottom as well. Over the drainage put a thin layer of spent Hops, Moss, or fibrous matter of some kind to prevent the soil from washing down and clogging the drainage. Then put about 1 in. or 1½ in. of soil, not sifted, and if the seeds are small, another thinner layer of very fine sifted soil above that, so that the whole may reach up to within ¾ in. or 1 in. of the top of the pot or box. We use boxes about 3 in. deep inside, though they may be a little more if preferred, and any size up to 8 in. or 9 in. wide, and 16 in. or 18 in. long is suitable.

Watering Seeds.—Watering at first is a most delicate and important point. What is to be aimed at is to have the soil just moist enough not to require any watering till the seeds are well up, as it is very undesirable to do this, and yet it must not be anything like wet, or many seeds are apt to rot and never come up. The best plan is to use the soil almost dry, or only barely moist, but not dust dry; put in the drainage and about half the depth of soil required, press it down firmly, and give it a good watering; if it is in a pot soak it half-way up in water, then fill in the rest of the soil, pressing the upper portion only slightly. Make the surface even and level; use no more water, but sow the seed at once, and cover with only a dusting of dry soil. Place a square of glass over the pot or box, and the job is done. By this means you get enough moisture in the soil to last for days without the surface being wet; the moisture is sure to rise quite sufficiently, and the water being down below induces the seeds to send down roots to find it. You get also a firm bottom, which holds moisture, and is of great importance, and a free, light, uncaked surface, in which the seeds will rapidly germinate, and into which the first tender rootlets can readily penetrate. As soon as ever the seeds are up tilt the glass a little on one side, or remove it altogether for an hour morning and evening. Give more and more air as they advance, and remove the glass altogether as soon as they can bear it. Also bear in mind that damping off occurs as often from too much dryness at the root as from excessive moisture overhead. When you see a pot or box of seedlings beginning to go off, examine the soil, and if dry give a thorough soaking, not a mere sprinkling. It has often been said before, but cannot be repeated too often, and applies especially here: never water plants (particularly tender seedlings) in driblets, whether they want it or not, but wait till the soil is dry, though not necessarily till the plants flag, and then give a full supply, enough to reach every fibre of the roots; after that wait till wanted again. When pots are very dry, and particularly in the case of pots or pans of very small seedlings, such as Lobelias, Calceolarias, or Tuberous Begonias, only just come up, it is better not to water from the top, as the water will often run away without wetting the soil, but plunge the pot or pan in water up to about half-an-inch or an inch below the level of the soil, and let it stay there till the soil is thoroughly moistened. In this way the soil gets well watered, as well as the roots, while the stems and leaves are kept dry, which is just what is wanted. In watering things from a hotbed in any way use water of about the temperature of the frame, a few degrees over rather than under. We always use water with the chill taken off for delicate young things, even from cold quarters, for fear of checks.

For nearly all seeds, a sheet of clean glass placed over the pot or box after sowing is a great help, as it prevents evaporation and creates that close, moist atmosphere inside the box so favourable for germination. If the seeds are such as require heat, place in a hotbed or warm house of the requisite temperature, but be sure and not use more heat than is really necessary; 70° or 75° at the outside is enough for anything, except perhaps such things as Cannas and a few others, but for most things, even Begonias, Gloxinias, &c., we find that from 65° to 70° suits them much better than a higher temperature. More heat than is necessary only brings the plants up weak and sickly, so that many perish in hardening off. Petunias, Lobelias, Balsams, and all half-hardy or tender things of like nature only need from 60° to 65°, or even 5° less rather than more, in which to germinate; even the temperature of a greenhouse is sufficient, though the seeds are slow in coming up. Beware of keeping the sheet of glass on the box too long, or of coddling or keeping too close in any way, or the seedlings soon get so delicate and drawn, that many of them will damp off.

Maranta as a Vase Plant.

After sowing, seeds may be put in a dark place, or any odd corner, so that the temperature is right and there is no mildew or fustiness about; in fact, seeds germinate better in the dark; but as soon as ever they are up they must be brought close to the glass, the closer the better, so that they are not near enough to be touched by a frost or low temperature outside; so keep 3 in. or 4 in. away for fear of injury. It is always safer to cover up all frames, &c., that contain such tender things with mats, &c., on all frosty or cold nights, especially in the spring; this plan saves heat and has many advantages, but do not cover up till it gets dark, and be up and remove again betimes in the morning as soon as it is light, as young things want all the light they can get, especially when in a warm temperature.

Regarding the soil most suitable for seed sowing in pots, it must always be fine, light, and moderately rich, though it should vary considerably for different subjects. Leaf-mould is the most useful of all soils for this purpose, as its nature induces seeds to germinate in it far more readily than in any other kind of soil. Plenty of sand should also always be used, especially near the surface; it insures porosity and prevents damping. For most seeds, especially fine or delicate ones, leaf-mould and sand in nearly equal parts, rather less of the latter, is best. The top ½ in. or ¼ in. should be finely sifted for small seeds, but for Verbenas, Balsams, and other large seeds do not sift at all; only pick out all lumps, sticks, &c. Use the soil rougher and richer below, and finer and sandier on the surface. A little loam may be used in the compost, especially below the surface for strong growing things, as Stocks, Asters, Pansies, Hollyhocks, and others; but as it is apt to make the soil cake, leave it out for delicate growers.

(To be continued.)

GLASSHOUSES & FRAMES.

Fine-leaved Vase Plants.—Amongst the foliage plants that decorate our plant houses, few are more deserving of admiration than Marantas; coming, as most of them do, from wet parts of tropical America, they require to be grown in a moist warm atmosphere, and consequently do not well bear removal to rooms or conservatories, except for a limited time. This is much to be regretted. The well known Maranta zebrina was for many years almost the only one amongst the ornamental-leaved section of the genus that was commonly found in hothouses; but of late years many very beautiful species have been introduced. Amongst them, M. Veitchi is probably the most striking, the leaves being purple underneath and deep green above, with yellow markings near the midrib. They succeed well in peat and charcoal, or good fibrous loam and leaf-mould, and in summer when placed in the room or conservatory they should be sponged frequently to keep them free from dust, and also to keep the leaves moist.

TREATMENT OF CAMELLIAS.

Nearly all Camellia plants, if in good health, will set more buds than they ought to be allowed to carry to perfection; in fact, if left on, they seldom do retain them all till they open; and not unfrequently overloading the plants leads ultimately to weakly growth and small flowers. Therefore, wherever the flower-buds have set thickly they should be thinned, leaving one, two, or three buds on each shoot, according to its length and strength. In but few cases should so many as three buds be left. One bud will be sufficient on all shoots not more than 5 in. or 6 in. long. A plant thickly studded with well-ripened shoots carrying one bud each will in the aggregate bear an enormous number of flowers.

Nowadays, in using Camellia flowers for bouquet making, there is no necessity to cut the branch on which the flower grows, or any portion of it. Simply cut the flower off where the calyx joins the branch, and mount it on wire, so as to form an artificial stalk. There is a special wire made for this purpose, which may be obtained from any of the principal London seedsmen. After a little practice anyone can mount flowers on wire, but Camellias require more delicacy of touch than other flowers, as they show any bruises so distinctly. Two pieces of wire are required for each flower, and they may vary in length according to the length of stalk required, but from 9 in. to 12 in. is generally sufficient. The flower is held carefully but firmly in the left hand, whilst the wires are thrust half-way through, at right angles to each other, with the right. The exact point at which the flowers should be pierced with the wires will vary with different-sized blossoms, but the object is to hold the flower together without the wire being seen. The ends of the wires are brought down under the flower, and one is wound a few times round the other, forming a very handy stalk, much better than the natural one for bouquet making. Should foliage be required, there will be no difficulty in attaching leaves to the base of the flower by means of the wires. Camellia blooms mounted in this way are usually more lasting than if cut with a piece of their own wood attached, as the petals are very apt to drop out of the calyx when taken into a warm room; but when properly wired, the petals are held in position by the wires. Besides, when cut with a piece of wood, it is very difficult to bring the flowers to a face to display them properly, as, unlike Roses, they do not grow straight up from the ends of the shoots; but with a wire stalk they may be made to face in any direction.

Camellias at all times require a good deal of water, but especially at this season, as not only have they a large amount of foliage to sup-

port, but there is the load of rapidly swelling buds. At no season are the roots in a greater state of activity, and if not well supplied with water something must be wrong; usually it is the buds that first give way when the period of trial comes. I have occasionally come across cases where both the buds and leaves were falling through want of water, and when buds or leaves begin to fall the roots should be examined, not only on the surface, but the bottom of the ball, or, if planted out, open the border and see what sort of condition the bottom is in. When a hard ball in a pot becomes thoroughly dry, the pot should be placed in a tub or tank till all the air bubbles have done rising, then lift it out and water with more care in future. At this season onwards for the next two months there is more danger of mischief being done by withholding water than at any other period of the year. Plants do not flag now as they do when the leaves are soft and a hot bright sun is shining, and especial care should now be given to plants growing in beds. Conservatories are often kept too warm in winter to suit the wants of Camellias, and if, in addition, they only receive a scanty supply of water, something must go wrong. A gentle dewing overhead in the morning of fine days will be beneficial, and the sponge should be used as often as possible, to keep every leaf bright and clean. Weak soft soap and water will give a gloss and polish to the plants that add much to their healthful appearance. Camellias, when well cared for, will live to a very old age, constantly increasing in value. I was in a conservatory in Worcestershire a short time since where there was a tree of the old double white that must have been much more than fifty years old. I knew it more than thirty years ago, and it was then a large old plant. It is still in robust health, and is carrying an immense number of blossom-buds.

There is no doubt that Camellias planted out in a lofty house, without much artificial heat, will grow to a much larger size than is generally supposed. Good turfy loam, where it can be had, should form the basis of all borders for Camellias, and everything in the shape of leaf-mould, unless thoroughly decomposed, should be rigidly excluded, as it is apt to engender fungus. I was visiting a large nursery establishment in the north some time ago, and the border of a large house, into which a great number of Camellias had been planted for cut flowers, had become so infested with fungus spores, and these had so affected the health of the plants, in spite of all that could be done, that they were at last compelled to lift the plants and pot them.

This, I know, is not an isolated case. I once had to deal with a similar one. I lifted the plants out and renewed the soil twice, and drenched both the plants and the borders frequently with soot water, until I ultimately conquered the fungus; and afterwards the plants grew amazingly, and produced very fine flowers. Although rough leaf-mould, or the bits of roots and other foreign matter frequently found in peat, will engender fungus under certain conditions, yet, if the border be kept moist, it will not make much headway. It is when the border or any part of it gets dry that the fungus spores vegetate and spread so disastrously; and when the fungus reaches that stage it is very difficult to drown it out, as water will not penetrate the dry spots so long as a passage can be found in any other direction. Hence the necessity for care in watering Camellias that are growing in beds or borders. Soot water in a weak solution may be given with advantage at this season at every watering. It will support the foliage, imparting to it a dark green colour; and a plant with firm, healthy foliage very rarely fails to produce good crops of flowers. H.

Isolepis gracilis as a Fringe to Large Pots.—This is a most useful plant for hanging over the rims of large pots in which Palms, Camellias, &c., are grown, and it should be cultivated in quantity for such purposes. Small plants of it in thumbs, or 3-in. pots, can be readily dibbled in over the surface of large pots, or planted so as to form a fringe hanging over their edges. A few plants, or even a row hanging down in front of the stages in greenhouses or conservatories, have a charming effect. Another method with this plant is to place it in small pots; under the rim of these pots is placed a stout wire, with a portion of it turned up to form a loop. In most old conservatories or on the back walls of old-fashioned plant houses where Camellias and various creepers are usually grown, there are almost sure to be bare naked places in which a nail driven here and there, and a pot of the Isolepis with its wire collar placed on them. will have a novel and refreshing appearance. Under such circumstances the plants will soon hide the pots, and give a character to otherwise uninteresting places. I need scarcely add that the plant is nearly hardy, and that it revels in damp and shade.—T. W.

Chirita sinensis.—This is an evergreen, herbaceous, Chinese plant, the leaves of which spread not unlike those of a Gloxinia; the flowers, which are blue, are also somewhat similar in shape to those of a Gloxinia, but they are produced in bunches on the extremities of erect stalks that rise well above the foliage, and, as these are thrown up freely, the plant has a very effective appearance. It blooms in summer, and is a useful subject for conservatory decoration. It thrives well in a mixture of peat and loam, to which has been added a little leaf-mould and sand; when in active growth it must not be allowed to want for water, or the advancing flowers will be injured. After blooming it should be kept somewhat drier at the root, but, owing to its evergreen character, it must not be allowed to get so dry as to cause the leaves to flag. It does best in a warm, greenhouse temperature. There is also a variegated form of this plant, the leaves of which are handsomely marked.

Blue-flowered Greenhouse Plant (Chirita sinensis).

Anthericum variegatum.—This plant is well worth growing for furnishing small vases or for conservatory decoration. It was introduced from the Cape of Good Hope. It is of a hardy character, and in variegation and habit closely resembles Pandanus Veitchi. It is, however, much more easily cultivated, and its foliage never fails to assume a bright grassy green colour, beautifully striped and margined with creamy-white.

The Effects of Lime-water on Chrysanthemums. — In answer to the inquiries of "A Novice in Horticulture" respecting the effect of lime-water on pot plants, allow me to give my experience. I noticed in a recent number of GARDENING ILLUSTRATED an article on Chrysanthemums in which the writer finishes by saying, "If there are worms in pots give a soaking of lime-water, &c." Having a good collection of plants in pots, in some of which I could see there were worms by the casts, I made some lime-water in the usual way, and, to be explicit, will say how: One pennyworth lump of lime was slaked in a large pan, and then cold water was poured on it, the pan filled, then stirred, and two days after when quite clear with quite 1 ft. of clear water above deposit, a can was filled with it, and it was given to the plants—result, a couple of worms came to the surface. Now for the after effects. The plants have been ruined by the application; the leaves, which were perfect and growing from the bottom of the stem, became flaccid, yellow, spotted, and gradually dried up, and are still doing so. The buds ceased to expand, and though under glass, plenty of air, warmth, and proper management, they are only now just moving a little, nearly a month stationary, and, considering they were for our local show, splendid plants and the choicest varieties, you can imagine my feelings. I should be glad to know if there are fellow-sufferers.—TRIED ONE.

ROSES.

MARECHAL NIEL ROSE.

THE leading article in GARDENING ILLUSTRATED, October 30, stirs up pleasant memories of Rose growing and gardening of all kinds in an old Bangalorean, who for the last ten years of his service was able to do a great deal in raising the status of the native gardeners, and improving the practice of horticulture generally in the province of Mysore. I will content myself today with noticing the fact of Maréchal Niel having been found not to answer for profitable cultivation, on account of its being so shy a bloomer. But in the interest of the amateur, I should like to give a brief description of its growth at Bangalore, where it has found a most congenial habitat, and blooms freely from July to December and well on into January in perfect beauty and fragrance, either as a pillar, umbrella-headed standard, or climber. It is difficult to say which suits it best, but perhaps a tall standard or an orchard walk, where one can look up into the golden blooms that hang down naturally, is most effective. Good feeding and just sufficient summer pinching to ensure a regular growth, with an occasional excision of gross shoots, &c., and keeping it judiciously supplied with water, so as not to allow of any alternation of wet and drought, is all that is really required.

Like the Tea and Noisette class generally, it does not stand the knife well, and the shaping is done by turning in where possible objectionable shoots, and stopping here and there as required. We have at Bangalore naturally a good, red, sandy loam of basaltic origin that is highly manured, and although the Maréchal Niel requires a little more scientific attention than Gloire de Dijon, Devoniensis, Cloth of Gold, and Lamarque, which flower in profusion

almost uncared for, it highly repays the extra trouble. With such treatment it revels in the sun in any place where it is sheltered from strong wind, to which it is very sensitive. About January 20 the dry easterly wind sets in during the day, which scorches up the flowers, and no more are seen till July.

With high feeding, soil renewal, judicious watering and handling, and a careful and frequent stirring of the surface earth to prevent its caking—all points on which the native gardeners at Bangalore rely for success—the shelter of glass would enable the amateur probably to bloom his Maréchal Niel more than "the one week in fifty-two" spoken of at page 412.

Roses at Bangalore are chiefly grown in pots, for convenience of carriage to exhibitions, as a precaution against white ants, for economy of space and superintendence, and for a concentration of show flowers. Considerable ingenuity is exercised in this display, an account of which, if acceptable, will be forwarded for publication. When asked about the climate of Bangalore, it is not an unfrequent answer: "Roses and Apples all the year round; Strawberries and Peaches from Christmas to June; and Bougainvillea spectabilis and other magnificent climbers in the grandest profusion of colour in January and February." This last remark reminds me of Mr. Boscawen's success with the Bougainvillea glabra, which flowers so well at Malta in January, but where in 1877 they so ignorantly pruned it. The plant needs a dry, warm climate. It will hardly flower at Madras, and with all Mr. Boscawen's skill and care he will hardly keep it alive in winter without shelter.

J. P.

Scrambling Roses.—Of scrambling Roses among the most common and the hardiest are the Ayrshire Roses. These are all double or semi-double, and the best of them are white or of a pinkish colour. There are hardly a dozen varieties altogether, and most of them are worth growing for the sake of variety. About equally hardy and useful for the same purposes is the Evergreen Rose, so called on account of the length of time it retains its leaves in winter. There are several good varieties, and they are vigorous and rapid growers, and need little or no attention except thinning when they are trained to pillars or walls. In rustic situations they need not be meddled with at all. To these may be added the Boursault varieties, a few of the Bourbon kinds, of which Souvenir de la Malmaison is the best example, and Gloire de Dijon and Maréchal Niel among the Tea-scented class. The last two are worthy of all the attention that can be bestowed upon them. Gloire de Dijon comes in early and goes out late, the second growth often producing flowers in abundance late in the season, and in the south the Maréchal Niel does well either on a wall or as a rambler in the open ground.

Soil for Potting.—No one need be short of a suitable compost for potting purposes who has clay for a staple, and can find sufficient sand and thoroughly decayed vegetable mould, whether from Grass, leaves, or litter, to mix with it. The common soil of the garden is the only loam which many can procure, and with such material at their disposal they need not complain. To get it in good condition they should obtain it from a quarter that has been rough dug and exposed to the frosts, which reduce the most tenacious clods to a fine meal, and it may then be shovelled up in that condition very dry and stored in the shed, when it will always be fit for use. Such a soil, with the usual additions in the shape of manure, sand, and leaf-mould, according to its texture, may be employed without any hesitation for most greenhouse plants that require loam. All soils which have a tendency to settle down into the consistency of putty—and even turfy loams, if heavy, do this eventually—are unfit for plants alone, but add sand in sufficient quantity, and their tenacity is broken up, and you can almost do anything with them. The root action of plants is yet a comparative mystery to us, and cultivators have been, perhaps, a little too dogmatic on the subject of soils, and too particular, thereby engendering a timidity among the half-experienced, which has no doubt, in many instances, been an obstacle to progress, for people do not attempt those things, as a rule, which they are taught to believe they have not the means of accomplishing. There is little doubt that plants are distinctly affected by the character of the soil in which they grow, and particularly by its texture, whether it be hard or soft; but experience seems to prove that any wholesome soil, freely pervious to air and moisture, and containing the necessary elements of plant food in an accessible form, is a perfectly suitable root medium, whether prepared from turfy loam and peat, or more simple and easily procurable materials.—C.

ANSWERS TO QUERIES.

3519.—**Renovating Pear Tree.**—One good method of renovating an old Pear tree is by grafting, but this involves the loss of any fruit crop for two years at least; in the end the tree is so renewed that its life is prolonged indefinitely. The tree should be headed back to several strong clean branches late in March, and be grafted at once or a week or two later. If the wood to be grafted is large, two or three stout grafts may be used on one branch. In your particular case perhaps the proper thinning of the tree during the winter will be efficacious, as the prospects of a fine fruit season next year are so great, that you may share the general prospective plenty. Cultivate the ground around the roots. If these, however, have gone deep into the clay, so that the points of the branches constantly die, then there is little hope that the tree can be restored to a healthy state.

3522.—**Potatoes for Autumn Planting.**—Late Potatoes will be safer to plant than early ones, as a mild winter may induce the latter to push into growth too early. Magnum Bonum will do well for autumn planting, as also may Bresee's Prolific, but Snowflake is probably too tender. Try Victoria, Champion, Climax, and Schoolmaster. Plant in 3-ft. rows and 6 in. deep, and then lay over each row a ridge of soil quite another 4 in. deep. This will throw rain from off the rows during the winter, and will exclude frost. In the early spring this ridge may be forked down, and thus leave but a moderate thickness of soil for the growth to come through. We know of no real advantage to be gained by autumn planting, whilst the risks are many.—A. D.

3525.—**Unproductive Garden.**—Perhaps if other and earlier sorts of Potatoes were planted than late kinds, such as Champion and German Reds, both uncertain as to root produce in some soils, better results may follow. No doubt the great need of the soil is a heavy dressing of animal manure. It evidently wants stamina, and this can only be got by heavy manuring and trenching. Salt is useful in hot dry soils, but the great need is ammonia. Still further, strong animal manure affords a valuable stay in hot weather. Deep cultivation may do much good, and dressings of guano, soot, salt, and lime are not without value, but a heavy dressing of stable manure put on now and worked in would be of more service than all the others put together.

3526.—**Grafting Potatoes.**—The witness who before the Potato Diseases Committee told that body that grafting would produce new varieties was mistaken, but such information was largely in keeping with the nonsense told to the committee. Grafting Potatoes is a means of amusement, but no tangible results follow. It is performed in this way: Take tubers equal in size and shape, but of two different kinds, say one white the other red. Cut out of one the bud end in the shape of a wedge; then cut out the bud end of the other in the same way, and exactly the same size; then insert the wedges or crowns into the reverse tubers, and tie them in tightly, making the cut surfaces to meet. Take care to cut out all eye-buds from the stock tuber, leaving only those in the graft or bud crown. Plant at once as usual. The graft may absorb some of the juices from the main tuber, but it is most doubtful, and no change is obtained. Grafts may also be made by starting two tubers, and when the shoots are high enough, slicing a piece of the side off each stem and tying them together. These should be grown in pots.—A. D.

3522.—**Holes in Pears.**—I have not the least doubt that the holes in the Pears which "R. D." complains of are made in the first place by birds; after that woodlice, flies, and earwigs get inside. As a Pear once perforated is simply useless, some year ago I adopted the following plan, which I have practised ever since with success: Take a card of the size and texture of a lady's visiting card, punch a hole, clean out in the middle of it nearly ¼ in. in diameter, and then slit the card from one end up to the hole in the middle, pass this card over the stalk of the Pear until it passes through the hole in the middle of the card, cross the two ends of the card and stick a pin through, and a most complete bird puzzle is formed. This plan is only practicable in the case of espaliers and pyramids where the fruit is within easy reach, when it quite repays the trouble. The plan has saved me some hundreds of fine Pears, and can be done very quickly.—S. J. U.

3202.—**Roses in Windows.**—At Princetown, Devon, the highest point in Devonshire, I believe, you can see in almost every window fine healthy Rose plants, mostly Teas, but many H. P. at least I saw them there at the end of May, 1879. They were as healthy and far more attractive than the average of window plants, and many were models of good cultivation. Princetown is the place where they have some fabulous number of wet days in the year, and it is in a very cold and exposed situation. Whether the scant sunshine, abundant moisture, and strong wind, *i.e.*, pure air, are together enough to account for the success of the Princetown people in growing Roses in pots, I know not, but I believe these said people are thoroughly in earnest over their Roses. To any one who doubts my statement, I say go and see for yourselves.—G. L. Whitby.

3582.—**Sea-sand to Mix with Soil for Plants.**—I have never prepared the sand prior to using it in any way. I procure it from an old heap standing outside a stable, where it is used for the flooring. I put some into a box and keep it in the potting room, where it gets gradually perfectly dry, same as silver sand. It has no doubt been well soaked with rain whilst outside and exposed to all weathers, and it is replenished at intervals of several months; fresh sand I have never used. Let those who fear its ill effects after this long exposure outside try a few experiments with it; a correct and practical proof will then be had.—H. B. S., *Ipswich.*

3580.—**Best Carnations.**—The twelve best Carnations according to my idea are Mars, Clipper, James Taylor, Admiral Curzon, Rifleman, Unexpected, Dan Godfrey, Falconbridge, Dr. Foster, James Merryweather, John Bull, J. D. Hextall. The twelve best Picotees—Royal Visit, Brunette, Alliance, Mary, Miss Horner, Thomas William, Edith Dombrain, Zerlina, J. B. Bryant, Mrs. Allcroft, Mrs. Payne, Minnie. Fancies and yellows—Gazelle, Congress, Lady Aitchison, Alice, Flavius, Titania. Cloves—Fire-eater (scarlet), Lady of Avenel (white), Rosa Bonheur (pink), Coroner (scarlet), Imperial Purple (purple), Sulphur King (yellow). "Burns" will find that these (or a selection from them) will give him a lovely collection of well-known flowers. Of course, they do not comprise the highly expensive novelties, but for show, table, or bouquets, he could not have better varieties. They should be got at once, put into 3-in. pots, and wintered in a cold frame, the pots bedded in Cocoa-nut fibre refuse.—Girofle.

3585.—**New Roses.**—I think the following are the best six H.P. that have been sent out during the last six years, viz.—Comtesse de Serenye (Lacharme), 1874; Monsieur E. Y. Teas (E. Verdier), 1874; Star of Waltham (Wm. Paul & Son), 1874; Duchesse de Vallombrosa (Schwartz), 1875; A. K. Williams (Schwartz), 1878; Constantine Tretiakoff (H. Jamain), 1878. The first four are now well known and generally admitted to be amongst the best for exhibition, A. K. Williams is one of the best Roses we have, and will be a great favourite when fully known, and Constantine Tretiakoff is distinct and altogether a most desirable variety. There are a few other new Roses which well deserve to be named, and they are as follows: Mrs. Laxton (G. Paul & Son), 1878; Duchess of Bedford (Wm. Paul & Son), 1879; Countess of Rosebery (Wm. Paul & Son), 1879; and lastly, Julius Finger (Lacharme), 1880, which is introduced as and promises to be an improvement on that grand Rose Captain Christy (Lacharme), 1873. —William Walters, *Burton-on-Trent.*

3527.—**Large Strawberry**—The large Strawberry referred to is, perhaps, that once known as the Great Exhibition, a huge, but worthless kind, or it may have been Kittey's Goliath. Autumn fruiting is not, however, a natural characteristic of any garden Strawberry, but is the result of some accident in culture; thus plants forced in pots early in the year will, if planted out in May, often bloom and fruit freely in the autumn.

3528.—**Rose Not Flowering.**—The best course to adopt with a strong-growing Gloire de Dijon that does not bloom would be to bud it again with the same kind, or if planted on a south wall with Maréchal Niel. Both of these kinds, as well as most of the strong-growing Tea Roses, are best fitted for south walls.

3529.—**Protecting Roses.**—Very little is to be gained by endeavouring to protect Rosebuds formed now. It is not probable that these would bloom in the spring if protected ever so much. If the plants were in a house and a gentle heat kept up they would expand the blooms, but in a cool house would lose them, therefore no good result can follow any attempt to protect them through the winter. You will find it desirable to cut away this late growth next spring, and get the wood to push afresh from dormant buds.

3534.—**Watercresses in Frames.**—For this purpose a quantity of young-rooted pieces should be obtained at once and be dibbled out into good, rich, porous soil, in a frame about 9 in. from the glass. It is obvious, however, that if very hard weather sets in, there will be no growth unless the frost can be excluded and a little warmth kept up. When watered in fine, open weather, slightly tepid water should be used to induce growth. After February, no doubt, plenty of gatherings could be got, but the waterings must be frequent.—A. D.

3531.—**Killing Stumps of Trees.**—Bore a hole into the stump large enough to hold a pennyworth of aqua-fortis, and then pour it in. This will effect the purpose.—A. W. FARMER.

3589.—**Pruning Pear Tree.**—*V.*—Any time after the leaves have fallen. Cut all shoots made during the year to within two eyes of their base. Your best plan would be to visit a gardener and let him explain it to you, or you may do serious injury to your tree.

3590.—**Variegated Hydrangeas.**—I have a variegated Hydrangea which has grown rapidly during the summer. Its lower leaves are now turning yellow and falling off. Ought it to be cut back like the common Hydrangea? and if so, when?—F. JACKSON. [If you want it to remain a dwarf bushy plant, cut it down in spring when the leaf-buds begin to burst. Keep it rather dry through the winter.]

3591.—**Liquid Manure for Apple Trees.**—Is it advisable to give liquid manure to Apple trees at this time of year? They are in an orchard from which the Grass is mown many times during every summer.—B. J. C. [During summer when the trees are in full bearing it would be beneficial; now it would be partly wasted.]

3592.—**Wintering Fuchsias.**—If Fuchsias are wintered in a cellar, are they best kept quite dry or little water given?—ZARA. [A little water now and then should be given if the soil gets very dry.]

3593.—**Outdoor Fuchsias.**—Are Fuchsias best cut down and covered over? or should the stems be left and the covering put round?—ZARA. [Leave the stems till they die, then cut them down. Cover the roots up with ashes.]

3594.—**Chrysanthemums Failing.**—I have a large number of all sorts of Chrysanthemums in pots, but they don't appear to be doing well; the leaves at the bottom of the stems seem dead. I have had the plants in the house now about three weeks, and have watered them with manure water two or three times, and about the same number of times with ordinary water. The buds are numerous, but I don't think even they are properly healthy.—H. B. [If you have them in the dwelling-house they are probably suffering from want of air. If in a greenhouse they ought to do well, unless you have overwatered them.]

3595.—**Lilium auratum.**—*H. B.*—Now the stem is dead remove most of the soil from the bulb, and re-pot it in good turfy loam and rotten manure and sand. Keep it where frost will not reach it, and do not water it until growth appears, unless the soil becomes very dry.

3596.—**Begonia Leaves Curling.**—*H. B.*—The spotted-leaved Begonias require a warm greenhouse at this time of the year. If they are in a cool place the leaves are sure to curl. Keep the plants rather dry through the winter, and cut them back slightly in spring if you have no heat in which to place them.

3597.—**Plants Becoming Drawn under Glass.**—*H. Ward.*—The practice of placing a square of glass over seed pots or pans is a good one, but when the seedlings are well up the glass should be removed, and the pans or pots be placed on a shelf close to the glass of the greenhouse, otherwise they will get drawn.

3598.—**Raspberries not Fruiting.**—What treatment should I pursue to get my Raspberries to bear? They are in rich, damp soil, some trained to stakes, some to wire. The canes are from two to five years old. They flower well, but when in blossom the suckers come up vigorously and overtop the blossoming canes, which turn yellow and form no fruit. The suckers surely should not sprout so early; the whole bed would be full of them were they not cut back.—W. A. A. [You have been cutting away your fruit-bearing canes and leaving the old and worthless ones. The system of Raspberry culture is this: Remove all old canes in autumn, and select enough young ones made during the summer to take their places, removing the remainder. The next year these are cut away and so on.]

3599.—**Wintering Solanums.**—*Enquirer, Liverpool.*—If you have well-established plants they may be wintered safely in an ordinary sitting-room if they are secure from frost. They will need to be watered with tepid water when the soil is getting dry, giving enough to thoroughly soak the whole of the soil. Watering at regular intervals, whether a plant wants it or not, is the cause of the loss of hundreds of window plants. A sprinkling overhead occasionally to free the leaves from dust will be an advantage.

3600.—**Tough Celery.**—*F. H. F.*—This is often caused by being grown in poor, dry soil. To have crisp Celery, rich soil and plenty of water in dry weather are necessary, and from the time the seed is sown till the Celery is finally blanched it must be kept growing without a check.

3601.—**Watering and Airing Plants.**—*Bot.*—Such plants as Geraniums, Fuchsias, &c., require to be watered in winter only when they are really dry. Air should be given whenever the weather is fine, and damp should be expelled by fire heat, a temperature of 40° at night and 45° by day will be ample. As regards treatment, you can only manage a mixed collection of plants in the same house by reading GARDENING regularly, and by experience ascertaining the requirements of each plant.

3602.—**Planting Clematis.**—*C. H.*—If the plant is a small and weakly one, you had better wait till March or April before you plant.

3603.—**Wireworm in Pots of Lilium auratum.**—*C. H.*—We should advise you to shake the soil from the bulbs at once and pot them in soil which is free from wireworm. Turfy loam or peat and leaf-mould or rotten cow manure make a good compost for them.

3604.—**Bamboo Stakes.**—*A. B. C.*—Apply to some of the dealers in such articles who advertise in our columns.

3605.—**Insects on Ferns.**—*G. T.*—The insects are thrips. Cut off the worst fronds and sponge the others two or three times with Tobacco water and soft soap at intervals of a few days.

3606.—**Insect on Vine Leaf.**—*M.*—Thrips.—Sponging with clean water is the only safe remedy in the case of Vines. The rods should be painted after being pruned with a mixture of soft soap, soot, sulphur and clay, or Gishurst compound—this will be a partial preventive.

3607.—**Vallotas Not Flowering.**—I have a pot full of Vallotas which, until two years ago, gave me the utmost satisfaction in respect to bloom, but about that time I shifted them into a larger pot, and, although quite fresh, they have never since bloomed. What can I do with them?—GREENOCK. [You over-potted them. When the pots get filled with roots the plants will no doubt flower again. Keep them rather dry through the winter, then place them in a moist heat, and they may flower next summer.]

3608.—**Spent Whitening for Soils.**—*J. W.*—We presume you mean chalk. It will be beneficial to clayey soils, but not to light sandy soils.

3609.—**Uses of a Cellar.**—I have a large, dark cellar, fairly ventilated, and not very damp. Can I turn it to any use?—HYSSOP. [Rhubarb roots or Seakale, placed in large pots or boxes of soil, may be put in the cellar in successive batches. Keep the cellar dark and close.]

3610.—**Berberis Darwini.**—*R. H. P.*—Prune it back in spring. It is easily raised from seed.

3611.—**Cutting Laurel Hedges.**—*R. H. P.*—Cut back hard in January or February.

3612.—**Espalier Apple Trees.**—*R. H. H.*—The only advantage wire trellises possess over wooden ones is that they last longer and look neater. Galvanised wire is said to be injurious to fruit trees.

3613.—**Ferns in Rooms.**—Will you kindly give me information on the treatment of Maiden-hair and other Ferns? having just purchased a lot, and having no greenhouse, I am obliged to keep them in my dining-room.—W. H. B. [If you keep them in the window where they will get plenty of light, and keep them free from frost, dust, the fumes of gas, and supply them liberally with tepid water when the soil is getting dry you may keep them healthy for some time. A large glass case would be an advantage; you could put the plants in it whilst the gas was burning, and it would also keep the dust from them.]

3614.—**Manure for Roses, &c.**—*Chole.*—Artificial manure is a great help to Roses and other plants, but it is not equal to good stable manure.

3615.—**Temperature for Greenhouse.**—What temperature should a greenhouse be kept at containing Geraniums, Camellias, Ferns, Primulas, Pelargoniums, &c.?—G. W. G. [Do not let it get below 40° at night unless the weather is very severe, nor above 45° unless very mild. During the day 5° higher.]

3616.—**Arable Land in the United Kingdom.**—*M. W. M.*—About thirteen and a half million acres, which includes corn crops, green crops, and uncropped arable land. An acre of Cabbage would cost to cultivate by the spade about £10 without reckoning manure or cartage, but including seed. We cannot answer your other question.

3617.—**Saving Onion Seed.**—*Cambridge.*—Select well-formed bulbs in spring and plant them in land well manured during the previous autumn or winter. Plant them in rows 2 ft. apart and 1½ ft. apart in the rows. When the flower-stalks appear place a stake to each, and when the seed turns black and shows signs of falling out of the husks, cut off the heads and place them on a sheet of paper in the sun to dry, taking care that rain does not fall on them. Clean and put in paper bags till wanted for use. A warm, sunny border is the best place for seed Onions.

3618.—**Filling up Gaps in Asparagus Beds.**—*Cambridge.*—March is the best time for this purpose.

3619.—**Planting Horseradish.**—*Cambridge.*—The best way is to draw drills 4 in. or 6 in. deep, and plant in them crowns or pieces of the root 6 in. apart, covering them 1 in. or 2 in. deep. When growing, fill up the drills with soil, and finally, earth the plants up like Potatoes. Deep, rich land is necessary for the culture of good Horseradish.

3620.—**Maréchal Niel Rose.**—I have a Maréchal Niel Rose in greenhouse in an 8-in. pot; it has made some shoots 11 ft. or 12 ft. long, and looks remarkably healthy. How must I treat it to insure a good bloom next spring? Must it be kept moist or dry? Will it require any pruning? and must it be re-potted or not?—INQUIRER. [Insert four or five neat flower sticks round the edge of the pot. Then twist the branches round the sticks. Give it plenty of water when in active growth, and early in spring a top-dressing of rich soil or artificial manure will be an advantage. A little weak soot water occasionally will also do good. Re-pot after it has done flowering.]

3621.—**Planting out Roses.**—*W. H. T.*—If you do not want to force the Roses into bloom early, the roots may be outside of the greenhouse, but if you can plant them inside you will have them more under control.

3622.—**Manuring Flower Beds.**—*S. B.*—Manure is best applied in a decomposed state, but if applied now it may be used when half rotten.

3623.—**Pots for Orchard-house Trees.**—*J. S.*—For trees in large houses 18-in. pots; for moderate-sized houses 13-in. or 15-in.; for small compact bushes 11-in. If you get good trees at once they should fruit next year.

3624.—**Worms in Frames.**—I have some Calceolarias in a frame, and the worms keep forcing them out of the earth; can you tell me what to do to destroy them?—A. O. [Water the soil with lime water. Put a double handful of lime into a bucket of water, and when dissolved use it through a rosed watering-pot.]

3625.—**Lifting Vines.**—*Weekly Reader.*—You can successfully lift Vines five years old whilst you make a new border. Carefully lift the roots from the soil, and cover them up with mats, &c., so that they do not get injured by frost. When you have made the border lay the roots out regularly, and cut off any that are bruised. Perform the work during mild weather if possible. If the Vines have been forced early, do the work at once; if they have not been forced February, will be the best time. The Vines must be started gently as soon as the work is completed.]

3626.—**Jerusalem Artichokes Flowering.**—*W. E. A. Y.*—There is nothing remarkable in these flowering when planted in warm soil and in a sunny situation.

3627.—**Root-pruning Apple Trees.**—I have a splendid young Apple tree which has made a wonderful lot of wood. When is the proper time to prune the roots? and how?—E. W. [Lift the tree carefully; then cut back to at least half their length all the strong roots. Be careful not to injure the fibrous roots. Plant again at once.]

3628.—**Original Dahlia.**—*Constant Reader.*—The name of the original Dahlia is D variabilis. We do not know where it can be obtained, but probably at any nursery where Dahlias are largely grown.

3629.—**Passion-flower.**—*Fairfield.*—As shoots are rising from the bottom you may safely cut out old wood if you desire to do so.

3630.—**Pollarding Acacias.**—I have two Acacias in front of my sitting-room which are now about eight years old. They have grown so luxuriantly that they are now altogether too large. Would it do to pollard them? and if so, when? and what precautions ought to be observed in doing so?—A. R. [We would cut back some of the longest and largest branches, but not pollard them.]

3631.—**Cutting Branches off Pear Tree.**—I have a Pear tree, a large branch of which overhangs my neighbour's garden. Would it do to cut it off?—A. R. [Yes.]

3632.—**Propagating Marguerites.**—*Enquirer.*—Cuttings of the young shoots strike any time during summer if placed in sandy soil under a bell-glass. In spring they require a little heat.

3633.—**Layering Magnolias.**—*A. W.*—Any time during summer or autumn. Bend down the shoots and slit them upwards with a sharp knife, so as to leave a kind of tongue to the layer. Peg this down firmly in sandy soil, and cover over to a depth of 2 in. or 3 in. Keep moist during summer.

3634.—**Caterpillars and Slugs.**—*M. A.*—Well dig or trench the ground and apply a good dressing of lime. Leave the ground rough on the surface, so that the frost may penetrate it. We know of no other way of preventing caterpillars and slugs in summer.

3635.—**Uses of Cellars.**—I have four large dry cellars, one of them very light and having a stove in for the greenhouse. What are the most useful things I can grow in them during the coming winter? I have planted my bulbs and set the pots in a layer of ashes in the cellar. Am I to lay anything over the pots or leave them uncovered?—M. F. [If you have plenty of horse manure you might grow Mushrooms. You can force Seakale, Rhubarb, and Chicory in them. The bulbs would be better with small flower-pots inverted over them.]

3636.—**Renovating Vine Border.**—*Fairfield.*—This is a good time of year for this work.

3637.—**Washing Fruit Walls.**—My garden walls are washed every year with a mixture of cement, lime, and copperas. The fruit trees have always been unfastened, but as that entails a deal of work, would the above mixture injure Peach trees if washed over them?—ELEANOR. [We would advise you to continue your usual practice.]

3638.—**Pruning Rose Trees.**—*R. T. H. M.*—Let them remain till spring; before that time we shall doubtless publish articles on the subject.

3639.—**Fancy Dahlias.**—*True to Name.*—Self-coloured Dahlias are not "Fancys," and are therefore of no use to propagate from when "Fancys" only are needed. You cannot make a single Dahlia come double.

3640.—**Treatment of Annuals.**—I planted about three weeks ago Nemophila, Virginian Stock, and Pansy seeds, all of which are now ½ in. out of the ground. What steps must I now take to preserve them for spring-flowering? Also, may I plant out in the open some Polyanthus seedlings raised in the house?—E. O. B. [Thin out the plants to 3 in. apart, and cover the ground with a little Cocoa-nut fibre or leaf-mould. The Polyanthuses would be better pricked out into boxes, and put in a frame till spring.]

3641.—**Wintering Ageratums.**—Kindly say how Ageratums ought to be treated. I have some cuttings and a great many large plants. I have a frame and small unheated greenhouse.—F. H. B. [Pot them and place them in the greenhouse; keep them free from damp and frost. You may save them, but it is doubtful.]

3642.—**Wintering Coleuses.**—*F. H. B.*—If you have not a warm greenhouse or frame throw the plants away, and get a few more in spring.

Silver Sand.—*C. F.*—Reigate supplies a greater amount of silver sand than any other place we know of.

Moving Asparagus Plants.—*C. S.*—Wait till March.

B. R. H.—Send your address and we will advise you.

Names of Plants.—*G. H.*—1, Beurre Capiaumont; 2, Winter Nelis.——*Richmond.*—No enclosure.——2, *Grasses.*—1, Anthoxanthum odoratum; 2, Cynosurus cristatus; 3, Holcus lanatus; 5, Agrostis alba; 6, Linum catharticum.——*Amos.*—Francoa sonchifolia.——*G. Sandford.*—Campanula muralis.——*E. D. T.*—Lamium maculatum; we do not name varieties of Fuchsia.—*Greenock.*—The leaves you send appear to be those of Lilium candidum (the Bourbon Lily).——*Park.*—A species of

Echeveria ; cannot name without flowers.——*M. Brown.*—Cassia Sophora ; keep it in the greenhouse or window in winter ; cuttings strike in spring or autumn.——*F. R.*—A species of Solidago; cannot name from such scanty material.——*Busy Bee.*—Erythrina Crista-galli.——*N. Porter.*—Helichrysum bracteatum ——*J. Jarvis.*—Hoya carnosa ; we can assign no cause for its dying without knowing what treatment it has received.——*Subscriber, Barnsbury.*—Escallonia macrantha ; from top of shoots in spring, sandy soil in a warm frame, or in August in open ground under a bell-glass.——*Zara.*—No plant enclosed.——*Ashtead.*—1, Brooke's Pippin ; 2, Court Pendu Plat probably ; 3, not known ; 4, Mother Davis ; 5, not known ; 6, Hawthornden ; we cannot name Apples or Pears with certainty from single specimens.——*H. H.*—Kindly send us better specimens.

QUERIES.

3643.—**Draining a Garden.**—I have a piece of ground attached to my house (I cannot as yet call it a garden) 80 ft. by 18 ft., which consists of clay, and which I should like to drain, and should also like to know the best way to go about it, as it is not practicable to drain it into the sewer. I could open the ground at the bottom and make a ditch to receive the drainage, but am at a loss to know how to get the water out when the ditch becomes full. Will any of your readers' inform me of a simple and cheap remedy ?—W. G.

3644.—**Unsatisfactory Vines.**—I have a Vinery 62 ft. by 14 ft., span-roofed, the borders of which were made good last year. My Vines, which have been planted twenty years, have since slightly improved. When they break they do so with a white down on the leaves, and the leaves turn off with a black-brownish appearance. The same on the wood; also rusty like spots on the leaf ; air roots on the canes very thick. I shall be glad if any reader can give me some instructions.—J. R.

3645.—**Deformed Cyclamen Flowers.**—What is the cause of Cyclamen flowers coming a bad shape? mine are very large, but some of the blooms are almost flat. They are young bulbs, the first time of blooming, and seem very healthy.—WOODCOCK.

3646.—**Planting Gooseberry Trees.**—I am anxious to plant some Gooseberry bushes immediately, and I wish to know whether the subsoil should be manured in forming a permanent bed for them, and being quite a novice, I should like to receive any useful hints as to planting, &c. The top soil is a good fibrous loam, the subsoil is a sandy loam, inclined to clay in some places. The ground slopes towards the north.—W. H.

3647.—**Leather Shavings as Manure.**—What is the best way to convert leather shavings and the refuse from a currier's shop into manure for the garden ?—H. Y.

3648.—**Treatment of Deutzias.**—I have got a plant named Deutzia which used to flower and smell very sweet; it is a small bush. For the last year or two it has not bloomed or grown at all ; the leaves seem to curl downwards and half wither. Can any reader give me a few hints respecting it.—BOT.

3649.—**American Water Melons.**—I shall be much obliged if any reader can inform me what is the proper culture of the Water Melon in England. I was in Canada and the United States during part of August and September this year, and they seemed to grow almost like a weed there amongst Potatoes and other crops. The price for a very large one was only twopence or threepence.—H. E. HULL.

3650.—**Beet and Parsnip Wine.**—Can any one oblige me with a recipe for making Beet and Parsnip wine ?—J. B.

3651.—**Plants to Withstand Gas.**—Will some one give me a list of hard-leaved plants that would live in the window of a room where gas is burnt ?—H. R.

3652.—**Plants for Screens under Tall Trees.** I have a row of Elm trees close to the road, under which I wish to get a thick evergreen hedge or narrow shrubbery as a screen, and I should prefer it composed of different shrubs. Will some correspondent give me a list of some that would thrive in this situation? The Escallonia does well here, and I purpose trying that amongst others.—R. W. P.

3653.—**Chinese Miniature Plants.**—By what means do the Chinese produce miniature plants ? Real information on this subject would be acceptable to readers of GARDENING ILLUSTRATED.—J. P.

3654.—**Drying Manure.**—If animal droppings are left to dry in the sun, do they lose their manurial properties ? and to what extent ? Some say they do so entirely, others say not.—J. P.

3655.—**American Cranberry.**—In what kind of climate, as to drought and frost, does the American Cranberry succeed ? and is it propagated from seed ? If so, where is it procurable for trial in some of the hill climates of South India ?—J. P.

3656.—**Propagating Bougainvilleas in India.** How are Bougainvillea plants propagated here ? In Bangalore, though the B. spectabilis blooms amid such grand surroundings of purple and gold, it yields no seed, and is propagated by layering.—J. P.

3657.—**Striking Rose Cuttings.**—Is it too late to strike Rose cuttings now if great care is exercised ? If not, every suburban gardener might at least strike a few dozen under a large hand-glass, which would well repay the trouble in little flowering bushes for window decoration next June and July.—J. P.

3658.—**Dried Lavender.**—Can any one tell me where this can be procured ?—SAFFY.

3659.—**Leucophytum Browni.**—Can any one tell me how to propagate and treat this plant through the winter ?—HEREFORD.

3660.—**Fern Case and Aquaria.**—Being about to construct a Fern case with aquaria combined (wood), I should feel grateful to any reader who would assist me with a good design. I want one 3 ft. or 4 ft. long. I shall want all details, sort of wood best adapted, &c.—W. T., *Glasgow.*

3661.—**Clematis Henryi.**—I have one of these on a west wall, only planted there in the spring. What treatment does it require ?—T. H.

3662.—**Tulips for Outdoor Planting.**—Which are the best single and double Tulips for outdoor planting, to flower in March—colours crimson, gold, and white, and about 8 in. or 10 in. high?—S. B.

3663.—**Zinnia elegans.**—Will some one tell me the best way to sow and grow Zinnias for exhibition ?—W. W. W.

3664.—**Silica Paint.**—Where is this to be procured ? I have a fine concrete floor to conservatory off my drawing-room. Will this paint stand the drip from flower-pots, walking, &c. ?—H. A. D.

3665.—**Rabbits Gnawing Forest Trees.**—I should be glad if some reader could inform me of some solution for dressing trees, which would prevent rabbits gnawing the bark, and not injure the trees. Also where to obtain it.—A. G.

3666.—**Begonias and Calceolarias Dropping their Buds.**—Will some one suggest the cause of the blooms dropping from my herbaceous Calceolarias and Begonias immediately after watering ? When I let them go dry the bloom hangs on till withered. In the summer my Calceolarias on being watered would drop a dozen or more of the best blooms within half-an-hour, and now my pink Begonias are just the same, except that the Begonias drop the small buds. I water just sufficiently to show through the bottom of the pots. They are in a small heated greenhouse, average temperature 50°.—L. M. T.

3667.—**Violets in Autumn.**—How can I manage my Violets so as to have them in bloom early in the autumn ? I have five or six varieties, all warranted to bloom from October to December, and have paid every attention to the planting, &c., but only get half-a-dozen blooms at a time off a large bed.—A CONSTANT SUBSCRIBER.

POULTRY.

Treatment of Fowls.—I am often surprised at the difficulties experienced by your correspondents in the management of their poultry, and at the unfortunate diseases to which they appear to be subject. We keep nearer one hundred than fifty head of poultry—fowls, ducks, chickens, &c., of all ages and several kinds, and all running together and cross-bred. They are kept for the use of the house ; that is, home consumption, and are fed upon Barley, Indian Corn, Rice, and Barley-meal mixed with water. They have a run of several acres of Grass, and they also have scraps from the house ; they are not subject to any disease whatsoever, and require neither physicking nor coddling. Fowl keepers should remember that a fowl is not a cooking animal, like man, and therefore I am of opinion that it does not require cooked food, and they should also remember that it has a gizzard to grind its hard food. All it requires for health is a dry place to roost in, a good run, water, and some dry Corn. It should never be put up to fatten, but always be in condition for the table when required. Some years back I made some experiments in hatching, being of opinion that a hen knew best how to manage her eggs and bring the chickens from them. I had as many as twenty-one chickens from twenty-one eggs put under a hen. The number of eggs should be apportioned to the size of the hen. My plan was simply this, to put the hen and eggs under a coop on the Grass, or if wet weather when put to sit under a shed, so that the ground may be dry under her ; put some water in a small jar, and some Corn in a saucer into the coop and put a board up in front with a heavy stone against it, to keep the hen from being interfered with. I used to see daily that there was water and Corn, but never meddled in any way with either hen or eggs. I remember the first experiment was on the lawn, with a fine cross-bred hen and 21 eggs. One day when taking a peep at her—the eggs were scattered all over the ground under the coop—I thought to myself, here's an end of my experiment ; she has got tired of the eggs and ceased to sit ; but, however, I put up the board and looked again some time after, when, to my astonishment and delight, not an egg was to be seen ; they were all under the hen, and she looked comfortable and contented, the result being that she hatched all the eggs, viz., 21. After that I always adopted the same plan, and if the eggs were good, with the like success. The simple fact is, human nature is too fond of meddling and doctoring, and fancies it knows very much more than it really does, and thinks that other animal nature does not know anything ; in fact, that a hen does not know how to hatch its own eggs. I may add that the chickens were never meddled with, but left entirely with the hen.

Fowl-keeping in Small Spaces.—"T. F." seems to have chanced upon an unfortunate strain of Brahmas which are "perpetually wanting to sit," &c. The fact is, the Brahma is the most abused fowl in this respect that I know of. The general run of Brahmas do not get broody half so frequently as Cochins, and if this quality be discouraged by a little careful selection, a strain having the tendency in a very moderate degree will soon be obtained. Hamburghs of all sorts are peculiarly unsuitable for closely confined spaces, although individual cases may prove the exception to the rule. The very best birds to keep in a small place to produce eggs during the winter months are produced by mating a stout Houdan cock with dark Brahma hens ; the pullets generally do not sit, lay freely, and produce large eggs. This is practical experience and not theory.—FLEUR-DE-LIS.

Cross-breeds in Poultry.—Will any one who knows kindly tell me whether a creve-cœur cock and black Hamburgh hens would make a good cross ?—L. G

BEES.

"J. W." should transfer his bees to a bar frame hive, which can now be purchased cheaper and is more serviceable than straw skeps. The bees will do best for the winter if confined with dummy board to a few frames only for wintering. The frames should be covered over with a piece of strong calico, and above that some material that will keep the bees warm, whilst allowing all generative moisture to escape. Some use common household flannel, chaff bags, &c., but I have found it more convenient to use chaff a few inches deep, which can be confined to its place with a bottomless box ; but the hives should, if constructed properly for feeding or supering, do without any other box. If possible, some driven bees should be obtained to strengthen the stock, when, if the queen is present, all will go well if fed continuously and not too fast. If "Novice" will wait patiently I will endeavour to comply with his wishes before the next honey harvest. "Weaver" would do well to feed his bees continuously with syrup, arranged so that only one bee can feed at once. There are several fancy feeders sold for this purpose. The plan that I have found to answer best is to fill an ordinary pickle bottle with syrup, then tie it over with a piece of bladder previously softened in warm water ; prick one fine hole in it, and place on the feeding hole. This if protected from weather may remain on all winter. Care should be taken that the sugar is boiled properly, so as not to crystalise. The syrup I use is made of the best lump sugar, which I find cheapest in the end, to which I add five pints of water ; it should be boiled a few minutes, then 2 oz. of vinegar and a small spoonful of salt added, boil a few minutes longer and set to cool. If when cold it shows any sign of crystalising, more water should be added, and boiled up again. For spring and summer feeding a thinner syrup should be used, and at certain times Pea meal given. BAR FRAME.

Feeding Bees.—"A Weaver" need not feed his bees until February or March. Should the winter be frosty he may get through without any feeding, as they eat but little, if any, in frosty or very cold weather. In February weigh them, and should they be not more than 6 lb. or 7 lb. in weight, feed gradually at the top of the hive if possible with sugar and water boiled to the consistency of thin syrup ; at the same time keep them warm by wrapping any old sack or other material around the hive ; keep them as dry as possible. If the spring be warm and the stock strong, they will swarm early in the month of May.—APIARY.

HOME PETS.

Canaries.—Can any of your subscribers tell me what is the matter with my canary ? It appears to be in good health, but it breathes so laboriously that the act seems painful. What is the cause and cure ?—W. P.

Pigeon with Weak Wings.—I have a pair of magpie pigeons, and one of them has lost the strength in the wings. I should be glad if any one could tell me what to give it, as I do not want to kill it ?—LITTLE VIXEN.

Rabbits for Show.—W. G. Hackett may obtain all he requires of Mr. Tonkinson, Catherine Street, Doncaster, who is a noted breeder.—W.

Book on Rabbits.—*Monmouth.*—"General Management of Rabbits," 1s. 1d. post free. "Rabbits for Prizes and Profit," by Leonard W. Gull, 2s. 9d., post free from 170, Strand, W.C.

Teaching Parrots to Talk.—I have two young birds, one an African grey, and the other a green one from Jamaica. Will some one kindly inform me the best way of teaching them to talk ? Is it best to talk to them in the dark ?—F. M. A. S.

Difficulty of breathing in Canaries.—I have a canary which I am under the impression suffers from asthma. I should be obliged to any reader for a remedy ? I feed it upon ordinary seed, and likewise a little of Hartz Mountain food.—C. W. W.

GARDENING
ILLUSTRATED.

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TALL SCARLET LOBELIAS.

THESE are among the best of flower garden plants for autumn display, and though quite hardy in some soils they are best taken up yearly. They do not, however, require half the trouble bestowed upon them as is necessary with Pelargoniums and similar plants used for flower garden decoration. The foliage of the Cardinal Lobelia (L. cardinalis), which we now figure, is of a deep bronze colour, and therefore, even when not in flower, the plants are quite as attractive as many of the plants used in the garden for their foliage alone, Iresines for example. The roots should be lifted in the winter and potted, or may be grown in pots altogether, but should be treated as a hardy border plant during the summer, and have a deep, rich loam, well manured. The plants will keep well if planted up for the winter in a cold frame which has the protection of some covering in severe weather. The spring is the best time for propagation, when the plants have pushed a few inches of growth; the roots are then either divided, or the shoots are taken off at the base and struck in a gentle warmth. Lobelia fulgens, the leaves of which are deep green, tinted with bronze, is one of the most brilliant of flowering plants in September, October, and even November. It is hardier than the one just alluded to, but requires similar treatment. One rarely sees it in good condition, probably owing to the fact of its requirements not being sufficiently studied. It luxuriates, and will last in good condition for an indefinite period in a free, porous, well-drained soil; but where the soil is naturally of a cold, heavy description, the roots are liable to the attacks of a kind of canker. The plants succumb to the first period of inclement weather, and very often—much to the vexation and wonderment of the grower—altogether fail to show signs of growth the ensuing spring. The safest plan is, where any doubt exists upon the matter, to take the plants up as soon as they are done flowering, wash the roots, and lay them in a free soil in a frame. They then immediately make fresh rootlets, and are thus ensured against decay. The situation chosen for planting should also be sheltered. No better place can be found than amongst evergreen shrubs, where there is plenty of light, air, and space for their development. The cold nights and damp days of autumn do not appear in the least to dim the beauty of this Lobelia, the flowers being then produced as fresh, highly-coloured, and well developed as those which expand earlier in the season. Such plants as these which flower freely and brightly amongst the fogs and dark autumn days are very welcome, and are well deserving of some cultural care.

THE CARDINAL FLOWER (LOBELIA CARDINALIS)

Either or both kinds may be planted out in April or May either in groups or beds by themselves, or at intervals in beds of Pansies or other dwarf spring or summer-flowering plants. This is a good plan, as when the Pansies are out of bloom they form a green carpet, from which the tall spikes of brilliant crimson blossoms of the Lobelias will spring with excellent effect. When obtaining these plants from a nursery care should be taken o get them from a reliable source, as there are in cultivation some inferior kinds, which would disappoint the grower. The plants from which our illustration was prepared were grown in the garden of Leopold Rothschild, Esq., at Ascott, Bedfordshire, and were examples of culture rarely seen in the case of these Lobelias.

TOWN GARDENING.

Striking Cuttings.

Pots are better than boxes for striking cuttings in as a rule, except where a large quantity have to be raised ; then use a properly prepared frame, without pots or boxes, the soil being filled in to form a bed. 3-in. pots, or what are known as large 60's are the most useful size ; fill them nearly half full of drainage ; on that place a few Hops or a little Moss, and fill up to the rim with nice sandy soil, not sifted. When filled, stand nearly up to the rim in water till soaked through ; then set aside for an hour or two to drain. Make good large holes with a stick for the cuttings, pour a little dry silver sand into each hole for the base of the cutting to rest on, put in your cuttings, and fill up and around with silver sand, pressing them in pretty firmly. Then give a light sprinkle to settle the cuttings in the soil, stand aside till the leaves are dry, and then place in a frame or house, with or without heat as required. Keep them close, only admitting a little air for an hour in the morning or evening to dry the leaves and prevent damping until rooted, when gradually accustom to plenty of air, and when well rooted, pot off singly. Most cuttings, except Geraniums, must be shaded from hot sun until roots are formed, and in some cases after. Three or four Geranium cuttings in a 3-in. pot are enough ; these like a rather loamy soil to root in. For Fuchsias use only leaf-mould and sand, and put five or six or even eight cuttings in a pot. Petunias, Verbenas, &c., like equal parts of loam, leaf-mould, and sand. It is as well to let cuttings have a little sun morning and evening to raise the temperature of the frame, but shade as soon as the sun gets hot. They must also be kept moist, but not wet, and as close as possible, so that damping does not occur, till rooted. It is astonishing what numbers of things can be rooted in a simple box of any convenient size and 9 in. to 1 ft. in depth, half filled with drainage and soil, and covered over with a sheet or sheets of glass. During May, June, July and August, Fuchsias, Geraniums, Pelargoniums, Myrtles, and nearly all greenhouse plants will do well thus, and if the box can be kept in a greenhouse, will do better and strike sooner.

Many things root readily in Cocoa-nut fibre refuse mixed with sand. All cuttings should be growing when taken ; they should be cut clean off with a sharp knife, cutting just below a joint and in a sloping direction ; the lower leaves should be removed and the slip planted at once. As soon as the young roots are 1 in. long, or even less, pot off singly, and do not wait until the roots are a tangled mass, and have to be broken. After potting off, keep close for a few days again, until they are rooted out.

Plants for Outdoor Gardens.

For greater convenience we give three separate lists — the first containing those plants that will do well in any situation, however bad, with moderate care ; many of them indeed will grow almost anyhow and anywhere, though of course if carefully cultivated they will give better results. The second list contains the names of such as require more care and attention than the first, special soil, &c., to do well, or that would do well in suburbs or small towns. And the third list, such as cannot be made to grow at all in town air, or that will at best only drag out a miserable existence for a year or two, and give more pain than pleasure to their owners. After the lists we will take the most desirable kinds separately, and give instructions for their successful cultivation, with the soil most suitable for them, and so on. The lists are all arranged alphabetically for greater convenience. We do not strictly adhere to the botanical names, but give those by which the plants are generally known. The most suitable plants are marked thus (*), and those marked (†), though really perennials, are better treated as annuals.

FIRST LIST.

Trees.

Cherry, American double white
Elder
* Fig
* Lime
Maple (Acer). A. plantanoides and monspessulanum are best
* Plane

Shrubs.

Aucuba japonica
Cuba (variegated) Laurel
Cytisus cyprius (Gum Cistus)
* Euonymus
French Willow
Hawthorns will live and grow, but hardly ever flower
Lilac
* Ribes
* Sumach (Rhus)
,, Fern-leaved (R. glabra laciniata)

Climbing and Trailing Shrubs.

* Cratægus pyracantha
Ivy (Hedera) vars.
* Jasmine (summer flower, white)
Pyrus japonica
* The Vine
* Virginian Creeper (Ampelopsis hederacea and Veitchi)

Hardy Plants.

Aconite (Eranthus hyemalis) yellow
Asclepias tuberosa (Swallow-wort)
* Auricula
* Canterbury Bells
* Chrysanthemum (old early white and red are best)
Commelina cœlestis (Spider-wort)
Cowslip
* Creeping Jenny or Moneywort (Lysimachia nummularia)
Crocus
Daffodils
Delphinium (perennial Larkspur)
Dielytra spectabilis
* Evening Primrose (Œnothera Lamarckiana or grandiflora)
Everlasting Pea (Lathyrus latifolius)
* Hyacinth (wild)
* Iris (German and common yellow, also other varieties)
Lilies (white garden and Tiger)
* London Pride
* Michaelmas Daisies (perennial Asters)
Polyanthus
* Primroses
Rose Campion
†* Snapdragon (Antirrhinum)
Solomon's Seal
Sweet Williams (Dianthus)
Tritoma Uvaria (Flame flower)
* Thrift (Armeria)
Veronica (herbaceous, blue)—Speedwell

Half-hardy Plants Needing Protection in Winter.

* Calceolaria (shrubby)
* Carnations
* Chrysanthemum (show or exhibition varieties)
† Cineraria (maritima and candidissima)
* Dahlias
* Geraniums (zonal and Ivy-leaved, not tricolors)
†* Golden Feather (Pyrethrum)
†* Lobelias, both dwarf blue and herbaceous (cardinals)
†* Marvel of Peru (Mirabilis)
* Mimulus
†* Petunias
†* Pinks (Indian and Chinese)
†* Verbenas

Annuals.

* Amarantus (mel. ruber and varieties)
* Asters
Balsams
* Candytuft
Cannabis (Hemp plant)
Chrysanthemum (annual)
* Convolulus major and minor
* Corn flowers (Cyanus)
Eschscholtzia
* Helichrysum (Everlasting flowers)
Larkspur (annual)
Maize (striped Japanese)
* Marigolds (French and common garden)
* Mignonette
* Phlox Drummondi
Poppy
Silene pendula and varieties
* Stocks (German and Virginian)
* Sunflowers
Tropæolum (Nasturtium)
* Venus' Looking-glass
* Zinnia

SECOND LIST.

Trees and Shrubs, &c.

Amelanchier vulgaris
Barberry (Berberis Darwini, best)
Clematis (preferably montana)
Forsythia viridissima
Horse Chestnut
* Laburnum
Laurustinus
Lignum vitæ
Magnolia conspicua
Passiflora cœrulea
Persian lilac
Privet
* Poplar and Aspen
Sycamore
Syringa
* Wistaria

Hardy and Half-hardy Plants.

Campanula (pyramidalis and carpatica, &c.)
Ferns (hardy)
Foxglove (Digitalis)
* Fuchsias (some kinds)
* Gladiolus
Godetia (annual)
Heartsease (some vigorous varieties)
* Hollyhocks
* Hyacinths
Lily of the Valley (Convallaria
* Lupins
Pentstemons
Perilla nankinensis (annual)
* Phlox (perennial)
Pinks (garden)
Salpiglossis (annual)
Scabious
Stonecrops (Sedums, varieties of)
Tulips
Wallflowers

THIRD LIST

Includes nearly all Forest Trees, Oak, Ash, Elm, &c., in any smoky or thickly populated districts.

Shrubs.

Arbutus
Azalea
Broom
Guelder Rose
Heaths (Erica
Holly
Laurel

Plants.

Anemone
Coleus
Cuphæa
Daisies (Bellis)
Gentians
Hepaticas
Hibiscus
Jasminum nudiflorum
Linums
Pansies
Pelargoniums (zonal tricolors)
Portulacas
Primula acaulis fl.-pl., the spring flower
Ranunculus
Roses
Sweet Peas
Violets
Violas

(To be continued.)

Pansies in Towns.—The writer of the article on "Town Gardening" (p. 425) states that Pansies never do well in towns. Now, my experience is widely different ; in fact, I look upon the Pansy as one of the most valuable plants for the purpose ; it may be that they will not do quite as well as in the country, but just the same objection could be raised against any other hardy perennial. Let any one who wishes to test the matter for himself get a packet of good mixed seed and sow towards the end of March in boxes ; when sufficiently large to handle plant out the seedlings, and they will commence blooming in June ; from these select what are worth growing, and afterwards rely only upon cuttings, which may be taken almost at any time. My method, however, is to nearly fill a frame with light rich soil during September, and plant the cuttings in that ; the glass is only put on during foggy weather, and at night after November commences. I have thus plenty of strong healthy plants ready for planting out in the spring, when care is taken to disturb the roots as little as possible ; in other words, they are lifted with a good ball and planted out. The after treatment consists in keeping the plants from going to seed, and helping with a little manure water during the summer. Mulching is also of assistance to them, especially if planted in a sunny situation, and they require plenty of water. It is quite waste of money to buy what are sold in the London shops and streets as Pansy roots ; no plant with such delicate root fibre could be expected to do well after the treatment they get. Raise your own plants or buy them from where you can see them taken direct from the ground ; treated as I have described in London, at least they will pay for growing, and will bloom from April to September. I saw beds of light purple Pansies in Camberwell Green last summer which would have convinced anyone who required convincing that they can be grown in towns, and grown well, too.—W. D., *Peckham*.

VEGETABLES.

EARLY VEGETABLES.

Although hot-water involves much less trouble in forwarding early crops than fermenting material, yet there is no warmth so regular and congenial for the purpose as a good bed of leaves, such as those of Oak or Chestnut, which, got together before they lose their virtues, hold heat for a considerable period. To catch them at their best they should not only be collected as soon as possible after they are shed, but when they are in a moderately dry condition, for if wet, the fermentation is either excessively violent or so imperfect as to be of little or no service, unless mixed with an equal bulk of stable manure. The two combined, if turned over a few times and thoroughly sweetened by allowing the rank steam and gases to escape, form an admirable bed for forcing Asparagus. Next to forced Asparagus,

Potatoes are considered the greatest luxury in the vegetable way, and there is no plan of obtaining these so good as growing them on a gentle hotbed, as, although warmth is required for the roots, the cooler in reason the tops can be kept the better and more satisfactory will the crop be. Heat above only produces long, attenuated haulm, and more particularly is this the case if there is at any time a deficiency of air

or sun to thicken and consolidate the growth and foliage; the latter of which, when under confinement, always comes thin and flimsy in texture. One advantage in growing early Potatoes is that the frame may be made to do double duty, and thus economise space, as, between the rows, Cauliflower or Lettuce may be sown and raised, or a crop of Radishes obtained and cleared off long before they can be got in the open, however favoured a border or position they may have. In order to get these well in advance of the Potatoes it is always advisable to soak the seeds a few hours in warm water before sowing, which accelerates its germination considerably, but when this is done, it should be well timed, so as to have the bed all ready, with a proper degree of heat in the soil, otherwise the tender germs get a chill, and instead of having handsome-shaped Radishes they are all fangs and roots.

Where frames are now in use, and it may, on that account, be desirable to defer making up hotbeds for Potatoes, they may be forwarded very much by placing them on end in boxes, filled with sifted leaf-soil, so as to just cover the crowns of the tubers, and if then stood in any warm shed or house they will form strong shoots, round which a quantity of roots will be emitted, so that each Potato may be lifted and planted with a large ball without suffering the least check if the planting is done in a careful manner. A very good way of getting a few early is to get some large pots and place two or three tubers in each, according to their size, when they may be set in any light, airy house, where they can get a little heat, and afterwards plunged in a bed of fermenting material to finish them off. The pots at starting should only be about half filled with light soil, as they do better earthed up later on when the tops get advanced and require support to keep them erect.

Seakale may be forced to any extent with a few cartloads of leaves shot in any out-of-the-way corner by digging up the roots and plunging them therein, the bulk of ours being brought on in this manner before the leaves come into use for hotbed work, and while they would otherwise be lying idle. The plan we adopt is to pack the roots tightly in rich soil in large pots, over which others of the same dimensions are inverted and slightly covered to exclude the light, when the heads come slowly on, are of large size, and of most perfect whiteness and quality. Besides forcing well in a bed of leaves, as above named, Seakale may be brought on almost anywhere if there be heat available, as there is always near chimneys or furnaces in use, or where hot-water pipes run underground before reaching the houses they are intended to warm. Such places made the most of will yield a large supply and answer equally well for Rhubarb, but as the heat so obtained is of a dry nature, the soil immediately surrounding the roots should be kept well watered to prevent them from shrivelling.

French Beans a little later on do far better planted out on hotbeds than they ever do with their roots confined to the limited area of a pot however well they may be attended to, and if a pit can be made use of with a pipe for top heat, they succeed almost as satisfactorily as when planted out in the open. The steam arising from manure and leaves, impregnated as it is with ammonia, is very conducive to the health of the plants, as it not only wards off red spider, which are generally so troublesome to Beans grown under glass, but the leaves, no doubt, absorb some of its nutritive properties, on which the roots feed likewise, when it is passing through the soil. It is a well-known fact to those who have had much to do with raising Cucumbers and Melons, that there is no place where they do so well after the turn of the year as in a hotbed frame, and many who grow them on trellises in houses prefer sowing their seed and nursing the plants on in the genial atmosphere such a situation affords. A small frame will render much good service for all purposes of this kind, and the most useful way of making it up is to have a few rough faggots at the bottom, so as to admit of driving fresh heat under by means of linings instead of having so large a body of stuff at starting. The linings can then be added to or renewed at pleasure, and a tolerably regular temperature thus kept up.

S. W.

How to Grow Good Onions. — Manure and trench the land in autumn or winter; if heavy, throw it into ridges, but if light, leave it flat. In February spread over the surface of the beds about 3 in. of thoroughly decayed manure or rich compost, including the charred refuse from the rubbish-heap; fork it lightly in, so as to mix it with the surface-soil. In March, when the surface is dry, tread all firm, rake level, and draw drills 1 in. deep and 8 in. or 9 in. apart, or more if large bulbs of Onions be required. Sow the seeds evenly and thinly; tread them in, and draw the back of the rake over all, leaving a level surface. As soon as the young plants appear, choose a fine day to stir the soil amongst them, and follow this up as often as time can be spared during the growing season. When large enough thin out to 3 in. or 4 in. apart; this should be done in showery weather, as they come up better and without disturbing the roots of those intended for the main crop. Salt in small quantities is an excellent stimulant for Onions, especially for a dry soil; soot, also, is very beneficial when applied to the land in spring, or as a top-dressing to the crop during its early growth. The season of growth of the Onion, especially when sown in spring, is short; therefore, everything should be done to prevent the crop receiving a check when the plants are young. Sprinklings of artificial manure in the majority of seasons will well repay for the outlay and labour. It is when a check comes from sudden drought, or any other cause, that Onion maggots are usually so difficult to be dealt with. If by high culture continuous growth can be secured till the bulbs ripen off naturally, the maggots will not do much injury. In August or as soon as the tops die down—and it is a good plan to assist the maturing of the bulbs by bending the tops—pull them up and lay them on a hard surface to dry, turning them over occasionally; and when thoroughly harvested, tie them in ropes or bunches and hang them in some dry, cool, well-ventilated place, as frost does not injure them. In all inferior or difficult soils, sow in August, about the second or third week, on a dry open piece of ground; keep them free from weeds during autumn, and transplant early in February on to land prepared as recommended for spring-sown Onions. In this way very fine bulbs are invariably obtained. The truth is, that Onions require a longer season of growth than can usually be had in our climate. Drought too often checks growth and dwarfs the produce, hence the advantage of sowing in autumn to give an early start. The sorts commonly sown in autumn are the various forms of Tripoli; but it is by no means necessary to confine ourselves to these kinds alone, as the Spanish, Globe, and other better-keeping kinds will do equally well if sown in autumn; and if the main sowing be made at that time, it is important for a portion of the crop to be of the best-keeping kinds.

Javanese Screw Pine as a vase plant

Snowflake Potatoes.—In a recent issue of GARDENING a correspondent ("Burns") finds that Snowflake is rather a slow growing variety. Now this is very different from not only my own experience of it, but also, I believe, diametrically opposed to its generally recognised character, viz., that of "possessing very rapid growth and early development of the young tubers." I am afraid that the cause lies somewhat in the too early planting of them. I planted mine on April 13. These were dug up for table and exhibition purposes on July 23, and a finer or handsomer crop I never turned out. I would advise our friend for the future to defer planting them till the middle or even the end of April. They will then not only be less liable to get frosted down, but will have a warmer temperature, and consequently a quicker growth, which, I need scarcely add, conduces immensely to the formation of handsome tubers.—NORTHANTS.

GLASSHOUSES & FRAMES.

THE VARIEGATED JAVANESE SCREW PINE.

(PANDANUS JAVANICUS VARIEGATUS.)

WHERE room can be afforded this is well worth cultivation. A finely grown specimen of it well furnished with its prettily variegated pendent leaves is highly attractive; but it should never be too much crowded, for if it cannot stand quite clear of other plants half its beauty is lost, a remark which also holds good in reference to all plants of a similar habit. Their greatest charm lies in their finely-arched drooping leaves, which to be seen to advantage must stand clear of everything near them. This Pandanus is very attractive even in a small state, but it is only when it acquires a size of some 4 ft. high, and as much through, that it is seen in proper character. It is of easy culture; a small healthy plant of it in, say a 6-in. pot, if potted in February or March, into a 10-in. or 12-in. pot, well drained, using good turfy loam, with the addition of one-sixth of clean sand, making the soil quite firm in potting, will make a nice half-specimen in a year. It requires a night temperature of from 65° to 70° during the growing season, and a rise of 10° in the daytime. Keep the soil moderately moist, syringe the plant in the afternoons, and keep it well elevated near the glass, in order to induce a short, compact growth; shading very little, as when much shaded it does not come so finely variegated. It is not very liable to the attacks of insects, except scale or mealy bug, both of which must be kept down by a diligent use of the sponge and camel's-hair brush. In the winter keep the soil a little drier than in summer, and maintain a night temperature not lower than 60°. Small plants may be used for table decoration, or in a larger state for vases, but they must not be kept long out of heat, or they will suffer. Suckers taken off and inserted in small pots, using half sand and loam, and keeping them moderately close, soon root, after which they should be treated as recommended for larger plants.

Ageratums in Winter.—To have these in full bloom at this time of the year may be of little moment to some, but where house room is limited, any bits of bloom at this period are highly valued. Plants which are used in the flower garden during summer, if cut well back early in September, will start a second bloom. If these are lifted into 4½-in. pots they will bloom in a greenhouse far into the winter.

Ageratum Countess of Stair has a close, compact habit, and is well suited for pot culture; moreover, it furnishes a delicate pleasing hue of colour that is far from abundant at this time of the year. Those who have plenty of house room and a gentle warmth will have no difficulty in keeping it in bloom for some time.—D.

GREENHOUSE ACACIAS.

Acacias, though very showy, are but seldom met with in small gardens.

A. Drummondi, when covered with a mass of bright yellow flowers, is one of the most telling plants we have, and is valuable either as a small plant or large specimen, flowering equally well in either state. Bushy, well-grown plants in 4-in. and 6-in. pots are very useful for decorative purposes, the habit being neat and compact, and the colour striking. When associated with such plants as Cinerarias, Cyclamens, and Azaleas it is seen at its best. This species is easily propagated from half-ripened shoots inserted in silver sand and placed in a close frame or house, covering them with a bell-glass. In March they may be potted off into a compost of fibrous loam and peat, and kept growing along during the summer in a frame, stopping them occasionally to induce a bushy formation. In September they should be thoroughly hardened by full exposure to sun and air, housing them about the commencement of October. The following season shift into 4-in. pots, placing a neat stake to each, tying the stem firmly thereto at the base, and treat them as before. They will the next year flower profusely, and may then be shifted on as required. Where large specimens are necessary for conservatory decoration this Acacia will be found very suitable, as it is not at all of a miffy nature or liable to go off, as many New Holland plants are apt to do when they arrive at specimen size.

A. pulchella is a beautiful species, and not at all difficult to grow.

A. armata is an old and well-known kind, one that will bear a deal of rough usage, but it is very liable to be attacked by scale, which must be promptly exterminated if the plants are to be kept in a healthy state.

A. lophantha is a great favourite for window decoration, its light, feathery, gracefully-disposed foliage rendering it one of the most suitable plants which we possess for that purpose. It should be grown by every one, and as it comes freely from seed, which may be obtained very cheaply, there is no reason why anyone who has the smallest amount of convenience for plant growing should not possess it. The seed should be sown early in the spring, if possible in a little gentle bottom-heat, and kept growing on during the summer months, potting so that it does not become stunted; a free quick growth is essential to secure handsome foliage. Plants suitable for window decoration may be thus obtained the first year. Where convenience for raising the seeds does not easily exist, then they may be sown in April and placed in a cold frame, placing a piece of glass on the pan. When up pot the plants off into small pots, and keep them till the following April, when they may be shifted into 4-in. pots.

By no means allow them to suffer from want of water, as they will become naked at the base, thereby much impairing their decorative value. Good fibrous loam and leaf-mould suit them very well, but they are by no means fastidious as to soil. The best plants I ever grew were potted in some very old rotten manure, but if this be used it should have been thoroughly well sweetened, and should be at least three years old. This plant is most useful when from 1 ft. to 2 ft. in height, but if sufficient space can be accorded it, it will increase in beauty as it attains larger dimensions. It is not advisable, however, to retain them after they have filled the largest-sized pot; it is better to grow a few on every year, so that those that show signs of becoming bare or stunted may be made away with. Where there is sufficient space to plant it out, it naturally assumes more handsome proportions than are to be obtained by pot culture. It is well worthy of a place in a large cool house, as, by reason of the unique disposition of its foliage, it affords a fine contrast to most other plants. I once had it planted out amongst Camellias in a lofty house, and it presented at all times a charming appearance. This species does not flower in a small state; it is, consequently, to be regarded as being valuable only as an ornamental foliaged plant. The Acacias are essentially amateurs' plants, inasmuch as they are of easy culture, and do not require so much care in a general way as many greenhouse plants do; they grow rapidly, and are by no means fastidious with respect to winter quarters. Those who would wish to grow a few of this genus should procure their plants in the autumn, choosing young, thrifty plants, if possible, in 3-in. pots. Keep them in a cool, airy house during the winter, water only when dry, and they will be in good condition for growing on in the spring.—B.

Winter-flowering climbing Abutilon (A. igneum).

Chrysanthemums and Standard Pelargoniums.—A few years ago much was written in reference to the superiority of the zonal Pelargonium over the Chrysanthemum, and *vice versâ*, for late autumn and early winter displays in the conservatory. Each plant had its admirers, but I never recollect seeing a mixture of the two recommended, a circumstance which I have often wondered at, seeing what a pleasing effect a few standard Pelargoniums make at this season judiciously dotted about amongst the Chrysanthemums. The fine scarlet blossoms of the one are seen to good advantage surrounded by the delicate blooms of the other, and that monotony which is apt to pervade a collection of Chrysanthemums is thus obviated. Any one who will take the trouble to prepare a few of the best winter-flowering zonal Pelargoniums as standards, for the purpose just indicated, will, I am sure, be amply repaid by the result.—H. H.

Shaded Walls and their Ornamentation.—Where walls are very much shaded it is often difficult to find effective coverings for them. In a place where Creepers have been planted from time to time, but only to dwindle and die, we have tried the following with good results: We placed the trellis on which the Creepers were trained 6 in. from the wall, and filled up the intervening space with Moss and soil. We commenced at the bottom with a layer of Moss, then soil in which the plants were placed, and in this way we proceeded, placing Moss and soil alternately, until the whole was finished. Among the plants Begonias occupied a prominent place; these were mixed with Ferns and Lycopods. And now in place of unsightly and unhealthy Creepers we have a beautiful wall, on which the large leaves of the Begonias have a fine effect. Among Ferns, Platyceriums are well suited for the purpose if placed near the top, where their forked overhanging fronds make a good finish. Davallias also soon overrun a wall of this kind, and mix well with the Lycopods.—W. B.

A Climbing Abutilon (A. igneum).—This is one of the best winter flowering plants we have seen for a long time. It is now in full bloom in the Royal Horticultural Gardens, Chiswick. It is trained up one of the rafters of a lean-to greenhouse, from whence its bell-shaped flowers, which are of a rich red colour veined with velvety-maroon markings, depend in a graceful manner. Its blooms and buds stand out free from the foliage, a quality of which other species of Abutilon are deficient. It will grow in any good sandy soil, and a little manure water or clear soot water applied when the plant is in full bloom are of great assistance.

The Greenhouse Jasmine (Jasminum grandiflorum).—This is one of the most fragrant and acceptable of all indoor shrubs, and one which is largely grown in all good nurseries where cut flowers for bouquets are desired. It is generally cultivated as a stove plant, but such treatment is not essential, inasmuch as we have seen vigorous specimens of it growing and blooming freely in a cool house. In a warm temperature, however, the plant keeps on growing and flowering, and is almost invaluable where choice flowers are much in request during autumn and winter. It is a plant by no means so plentiful as it deserves to be, since its fragrance and pure white flowers are quite distinct from those of any other plant with which we are familiar. It is easily propagated by means of layering, and grows luxuriantly when planted out in any deep well-drained soil, or when grown in pots of sandy loam and rotten cow manure. After blooming it requires to be pruned into shape, and it will flower all the better the next year.

Wintering Garden Plants.—In a well-known London nursery Tritonia aurea, and Commelina cœlestis are successfully preserved by being lifted in autumn, and having their roots laid in dry soil, in cold frames or sheds. The different kinds of Oxalis, too, are treated in a similar manner; and if planted in March or April they will flower all through the summer. The bulbs of Arum cornutum and A. maculatum are laid in sand in a cool shed, a way in which they keep much sounder, and are more likely to grow satisfactorily than those left in the open ground, even if protected. Many more plants of similar character would be benefited by being treated in this way, and an advantage would be gained by having the ground vacant, so that it could be thoroughly dug and manured as might be required.—S.

House and Window Gardening.

Cyclamens for the Window.—The Cyclamen is really an excellent window plant, and if some are purchased now that they are just throwing up their first blooms, they will, if kept in an ordinary sitting-room window, bloom freely all through the winter. Even gas seems to injure them but slightly, the deep coloured flowers suffering most, but if the room is large and well ventilated the injury done is but small. The soil should be kept just moist, and to produce this it is well to have the plants taken where the leaves can be carefully sponged and then gently sprinkled, but permitted to dry before returning to the window. Such a cleansing once a week will prove of the utmost value. The plants may be turned round from day to day to keep them from having only one side. It is very well to show the world outside the window the beauties of our plants, but we also want to see something of them ourselves. It is rather a curious fact that Cyclamens are rarely well grown away from the locality of London, where they are produced yearly by the hundred thousand for market. Many large establishments turn out

10,000 plants annually, the majority about fifteen months old or from seed. Formerly, the bulbs or corms were dried off regularly in the summer. It was a rule-of-thumb practice, from which eventually some growers broke away, and thus created a revolution in the culture of the Cyclamen. It is now never dried off; the roots are rarely at rest even in the case of old ones, but seedlings are kept growing on as fast as possible. The fact that it blooms all through the winter renders the Cyclamen so valuable; it is, in fact, one of the best of winter flowers. In the market good plants in 4½-in. pots are sold at from 12s. to 18s. per dozen.—A. D.

FRUIT.

HOW TO MAKE AND PLANT A VINE BORDER.

Draining.—The first consideration in making a Vine border is the drainage, for however great the care afterwards may be, good results cannot be attained if the young roots made in summer are destroyed in winter by ineffective drainage. The character of the drainage must be arranged according to the position of the Vinery. But few situations occur in which Vines derive any benefit by being allowed to run into the subsoil, so that, as a rule, it is safest and cheapest in the end to concrete the bottom, which should have a slope of 1 in. in the foot from the Vinery to the extremity of the border. If the subsoil be damp and retentive, take out the surface soil to the depth of 18 in. or 2 ft., and fill in with refuse brick or stone, covering the whole floor with 4 in. or 5 in. of concrete, and allowing it to get thoroughly dry before introducing the drainage. Run a main drain parallel with the border 10 in. below the concrete; and, to make sure of perfect drainage in case of spouts running over, lay a row of 2-in. drain tiles, at distances of 6 ft. apart, at right angles with the main drain, filling in between with refuse brick or stone to the depth of 9 in., and finishing off with finer material; over the drainage place fresh turf with the Grass side downwards.

Soil.—In making borders for Vines care should be taken to have them of a permanent character, avoiding rank manures and a too retentive soil, which destroys the active roots in winter, producing long-jointed wood, and shanking the following season. Under good treatment, Vines will continue in a healthy bearing state for a good many years. The best material for borders is a good, strong, fibrous loam, of a calcareous character, with plenty of fibre in it, taken not more than 3 in. deep from an old pasture. First mow off the Grass and stack the thin turves for a month or two previous to using them; although, if the turf be in a dry state, it may be used at once. Fibrous turf, being often difficult to procure, is, however, fortunately, not the only material in which Vines can be grown, for fair Grapes may be obtained from Vines in any good ordinary soil, mixed with a few ½-in. bones, broken brick, or lime rubbish, with rich top-dressings of manure. In forming the border it is a mistake to make it the full width at first, as a great portion of it must be unoccupied with roots for some time, while the fibre is decomposing to no purpose. Make it piecemeal, as every addition throws fresh vigour into the Vines. Get a quantity of waste bricks, according to the size of the border, and break them up similar in size to stones used for road making. I prefer broken bricks to lime rubbish, particularly in the case of early forcing, where the borders have to be kept dry during the months of July and August. The roots, coming in contact with the pieces of brick, throw out rootlets that completely envelop them, and, even if the border be dust dry, I find these rootlets quite fresh, being preserved by the moisture contained in the brick. There is no necessity for going to a great expense for materials, inasmuch as broken bricks, a few ½-in. bones, and some good fibrous loam, with perfect drainage, are all that is required. Such a mixture is always sweet and lasting. Manures of any kind should always be applied on the surface, the water from rains and otherwise conveying it to the roots by degrees, as required by the Vines, thus keeping the border sweet and healthy. The drainage being complete, let the border extend 5 ft. from the front wall, both inside and out, making, together with the arch, about 11 ft. To every five or six barrowfuls of chopped turf, add one or so of broken bricks, according to the character of the loam; beat all well down, with the back of a four-pronged fork, to the depth of 3 ft., sloping to the front, where there should be a dry wall of single bricks, to keep the materials in their place, and to induce any roots that come in contact with them to throw out laterals or rootlets, and protect them from the weather. Additions of not less than 3 ft. should be made to the border every year until it is completed. If the soil surrounding the border be of an unfavourable character, it is best to cut the roots off from it by means of a wall.

Planting.—The following are the best Vines for forcing, to cut in March, April, or May, viz., Black Hamburgh, Foster's Seedling, Madresfield Court, and Muscat of Alexandria. Muscat of Alexandria should be planted at the hottest end, and given less air than the others. Late Grapes, for use in the winter months, should consist of Muscat of Alexandria, Alicante, Lady Downes, Gros Colmar, and many other varieties might be added. In selecting Vines for planting, those that are one year old are perhaps the best in the hands of the inexperienced; and, to make sure of being free from the Phylloxera, it is best for all growers to raise their own Vines. I prefer Vines raised from eyes in spring on pieces of turf, as they are easily transplanted without interrupting the growth. When your neighbour, who possesses healthy Vines, is pruning select the best ripened short-jointed prunings with plump eyes, tie them in a bundle, label them, and lay them in the soil by the heels in a cool greenhouse until say the beginning of February. In preparing the eyes cut the shoots with a sharp knife into lengths of 2 in., the eye being in the centre; cut away the wood on the upper side within a ¼ in. from the eye in a slanting direction. Cut rather more than the number required of fibrous turves, 6 in. square and 2 in. thick. Cut a niche in the centre, and place in it the eye, covering it over with fine soil, and packing the turves closely together on slates; then give a gentle watering with tepid water, and place them on a bottom heat of from 70° to 75°, with a moist atmospheric temperature of from 60° to 62° at night, and from 70° to 75° in the daytime, with plenty of light. When started in a low temperature, the buds lose vitality, which weakens the growth. As soon as the roots begin to show themselves through the sides of the turf prepare for a shift by cutting double the number of turves you require 12 in. square and 2 in. thick, placing one on the other on separate slates, and cutting the centre out of the uppermost 6 in. square. Select the most promising young Vines, and carefully place them in the turf, which should fit exactly, cutting off first, with a sharp knife, the points of the strong roots round the edges of the turf, an operation which causes them to throw out more lateral roots and strengthens the growth of the weaker rootlets, closing the union with a little fine soil; then give a gentle watering and replace them in bottom-heat, which must be maintained. Give ventilation only when the weather is favourable, and if all goes well, they will be ready for planting out in a month or six weeks. The border being ready, a hillock, 5 in. or 6 in. higher than the intended position at which the Vines should stand, should be made against the front wall of the house, to allow for subsiding. This keeps the collar of the roots well up, and allows plenty of room for top-dressing. Vines should never be allowed to root up the stem through earthing them up. Being on separate slates, the plants may be carried and placed in their positions on the slates, slipping them from under the Vines without the least check, and filling up with the compost. Give a gentle watering, and tie each plant to a small stake, until it has reached the wires. If it be intended to grow plants beneath the Vines, they should be planted 3 ft. 6 in. apart, but if for Vines only, 2 ft. 6 in.

Large-flowered Greenhouse Jasmine (Jasminum grandiflorum).

After Treatment.—After planting, cover the borders with half-rotten stable manure to the depth of 3 in. or 4 in.; this protects the surface, and water carries down the manurial properties into the border. The Vines being planted, the chief object is to obtain the largest possible amount of well-ripened wood and roots. On these depend future productions. Keep the day temperature at from 70° or 75°, or 5° more with sunheat, and from 60° to 65° at night, paying strict attention to ventilation, and shutting up early in the afternoon. Sprinkle every part of the floor and inside border with water. Tie the leading shoots to the wires, allowing the laterals to grow freely; and if any should take the lead, pinch out the centre, so as to keep them equally balanced, allowing them to cover every inch of the roof. In proportion to the foliage which the house contains will be the number of roots in the border. When they reach the top of the house, train them down the other side, *i.e.*, if the house be span-roofed; but if a lean-to, train them on the back wall. Watering with tepid water must be regularly attended to as the Vines get into rapid growth. When the house gets well filled with foliage and the wood begins to ripen, admit air freely, and to some extent withhold moisture. To prevent red spider, mix sulphur with milk, and paint it on the hot pipes; take care to keep the foliage healthy until the wood gets brown and solid, when the ventilators may be opened to their full extent. As soon as the leaves have fallen prune at once, heading the Vines back to a foot or so below the bottom wire, as the buds at the base rarely break if the shoot be left long. When the wounds are dried up, rub a little painter's

knotting over them, young Vines being liable to bleed. Cover the outside border with litter and wooden shutters to protect the roots from rain and frost, keeping the inside cool until the time to start again has returned.

The Second Year.—In the case of late Grapes, the Vines should be allowed to break into growth without fire-heat, which they generally do about the end of April; but, if for early fruit, close the Vinery the first week in February. Wash the glass and woodwork with soft soap and water; whitewash the walls with new slaked lime mixed with a handful of sulphur; paint the wires with white lead and turpentine, or as a substitute paraffin; in fact, it is the best plan to give a coat of paint inside every year at starting time, an operation which both destroys the eggs of insects and preserves the wood. All the spent manure on the surface of the borders, both inside and out, must be carefully taken off when the Vines are started into growth, removing all the loose bricks against the front of the borders, and any roots tending downwards must be reversed. Then add 3 ft. more to the border, replace the loose bricks, and over the whole spread 3 in. of half-rotten manure, with 8 in. or 10. in. of litter, covering with wooden shutters.

Temperature.—Commence with fire-heat the last week in February, syringing the Vines three times a day, and filling the evaporating pans. Maintain a night temperature of from 45° to 50°, and in the daytime from 55° to 60°, according to the state of the weather. As the growth begins to push, the temperature may be increased, and the same attention in every way paid, as directed for the first season. At the end of April remove the shutters and litter from the outside border, only leaving the manure. Pay every attention to watering the inside border, as the Vines will grow rapidly this season, and any check from over dryness should be prevented, it being almost impossible to give a young growing Vine too much water if the border be well drained. When the leading shoots get half up the rafter, pinch out the centre and also the top of the laterals, allowing the others to grow until the leading bud breaks again, when the laterals may be pinched to three leaves. This strengthens the buds at the lower part of the Vine, which are to bear fruit next season. Allow the leader to grow to the top, where it should be stopped, thus causing the rod to thicken and the buds to swell. Allow the laterals to grow freely, as they encourage root action; if the season should be very dry, see that the outside borders receive plenty of water.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 22.—Planting Golden Feather Pyrethrums, Hyacinths, Anemones, and double Narcissi in flower-beds; putting a few Hyacinths in Seakale pit and plunging them amongst leaves; covering Seakale crowns, so as to be able to get at them during severe frost; manuring hand-glass Cauliflowers, putting half a barrowful to a glass; giving Cucumbers some Standen's manure; pruning old Apple trees; thinning and stopping late Cinerarias; cleaning Violets in frames; plants in flower—Mignonette, Heliotropes, Narcissi, Roman Hyacinths, Scarlet, Pink, and Scented Pelargoniums, Heaths, Coleus, Epacrises, Primulas, Bouvardias, Chrysanthemums, Tree Carnations, Fuchsias, Schizostylis, Gardenias, Cytisus, and Violets.

Nov. 23.—Sowing more pots of Fulmer's Beans; also Cucumbers on bottom-heat; planting Peach trees; moving a good-sized Apricot tree; cleaning herb beds; digging flower borders.

Nov. 24.—Sowing Radishes in orchard house; still planting Cabbage; taking up some Jerusalem Artichokes and storing them in soil to be ready in case of frost; Broccoli coming in plentifully; stubbing up useless fruit trees; pruning, tying, and painting trees in orchard house; clearing Asparagus beds; weeding beds of Lily of the Valley; starting second early Vinery at 60° at night, 65° by day with fire-heat, and 75° with sun-heat and air.

Nov. 25.—Shifting some old plants of Calceolaria aurea floribunda into 8-in. pots for spring flowering; putting batches of Asparagus and Rhubarb into heat; covering stacked Strawberry plants from frost and snow; putting some litter over Parsnips, Seakale, and Artichokes; packing some Parsnips, Carrots, Salsafy, &c., in ashes in root house, so as to get at them easily during frosty weather; examining Orchids for thrips and fly; inspecting fruit room; filling up remaining space in Seakale-bin with manure for next crop; pruning pillar Roses; beginning to prune Vines generally, also espalier Pears.

Nov. 26.—Putting Roman Narcissi in flower in 3-in. pots for stand embellishment; taking up and re-planting over-luxuriant Plum trees in order to induce fruitfulness; putting in Roses and Pinks to force; strawing Endive under walls; covering young hand-glass Cauliflowers, frost being very severe; fumigating Orchid houses for fly and thrips; cutting tops off Gladioli and putting their roots under greenhouse stage.

Nov. 27.—Taking up, dressing, and re-planting Briers; putting some small Heliotropes into early Vinery to induce them to open their buds; washing Camellias; making up hotbed for Carrots and Radishes; securing the necessary quantity of Chrysanthemums for cuttings, and seeing that those to be saved are correctly labelled.

Glasshouses.

Chrysanthemums.—Everything should be done to keep the foliage fresh and healthy; air ought to be given when the weather is at all favourable, for if there is any mildew, anything approaching a stagnant atmosphere will cause it to spread. Where Roman Hyacinths are grown in considerable quantities, these will be very useful in assisting to keep up the display of flowers in positions that are unsuitable for large plants, and successional stock of them will be found much more satisfactory for bringing on into bloom than any attempt to force the larger kinds until later in the season.

Brugmansias.—These plants are only suitable for roomy houses, and for such there are few more commanding objects when in flower. A mistake which often occurs is letting them get too large both in the head and at the root, for which there is no necessity whatever. They look best as standards on straight clean stems from 4 ft. to 5 ft. high. In order to keep them within bounds as to size, nothing more is necessary than to cut the heads close in after blooming, and instead of increasing the root-room, remove a considerable portion of the soil once a year, and replace it with fresh material. If the plants are cut in now they will occupy very little room through the winter, as they can then be set in any house or pit out of the reach of frost, just keeping the soil in a slightly moist condition.

Myrtles.—Time was when large bushes of Myrtles might be seen in almost every greenhouse, for although they will live out-of-doors in some parts of the kingdom, their leaves are not so bright looking as when they are grown under glass, particularly in the winter season, when they are of most use. Not only are their flowers pretty, and the plants, when well managed, always fresh and green in appearance, but for mixing with arrangements of cut flowers they are most serviceable; a moderate number of their green sprays may with advantage be used even in the choicest bouquets, as, besides the perfume of their leaves being agreeable, employed round the outside there is no better material for giving support to the whole. Cuttings made from the young shoots now and inserted thickly in pots filled with a mixture of sand and peat, with a little sand on the surface, well moistened, and covered with propagating glasses, and kept in a greenhouse temperature during the winter, will by that time be callused over, and if then put in a little heat will root freely. If through the spring they are kept where a little warmth can be given them they will get a start such as will enable them to make good, small, bushy plants before the autumn. Old specimens that have become at all naked and bare may be freely cut back any time, and if affected with scale or other insects they should be frequently dipped in or syringed with insecticide before they break. If placed in a greenhouse and kept somewhat warmer than ordinary, they will start into growth in good time, and though it may not be the practice with many to reduce the heads of anything of this character until nearer the time when they would naturally begin to grow, by thus treating them in the winter, where means exist of keeping them slightly warmer than they would otherwise need to be, they not only get a start that enables them to make much more growth through the summer, but the weakening influence of bleeding, that generally results when they are cut back a little time before the spring growth commences, is avoided. It also affords an opportunity for a thorough cleansing of the plants when they are at all affected with insects.

Cinerarias and Herbaceous Calceolarias.—Cinerarias intended for the latest spring-flowering, if not already placed in their blooming pots, should be so before the roots get too much matted, as, when once they get into that condition, there is less chance of the additional root room which they receive when put in their flowering pots having its full effect in inducing strength and vigour. They will bear the soil being made very rich by the addition to good ordinary turfy loam of some well rotted manure and leaf-mould, and they should be potted firmly in all cases, leaving a little more space than usual for watering. Herbaceous Calceolarias should on no account be allowed to remain in the little pots which they have so far occupied until their roots get at all matted; they will bear larger shifts than most plants. For the ordinary purposes of decoration they will, in the majority of cases, he found most useful flowered in from 6-in. to 8-in. pots; but any one wishing to have them as strong and vigorous as possible may, by keeping them shifted on as often as is permissible, grow them so as to attain a large size, and be proportionately better flowered than smaller plants. Like the Cinerarias, they enjoy the soil being made very rich with rotten manure and leaf-mould. In order to grow the above plants with anything like success they must be kept perfectly clear from green fly, for if ever allowed to get much infected with that they are certain to injure the leaves in a way that so far weakens the plants as to prevent the possibility of their flowering well, and the foliage having such an objection to severe fumigations or strong applications of Tobacco water, as soon as any of the stock becomes the least affected means should at once be taken for the destruction of the insects, examining the plants at short intervals with a view to detect them directly they make their appearance. The first batch of Cinerarias that either are now or will shortly be pushing up their bloom-stems, as also those that are later, and whose roots have got fairly hold of the soil, should be regularly supplied with manure water. There is one thing in plant cultivation always apparent when the subjects are vigorous and strong, resulting from a continued course of attentive management from their first propagation upwards; they are generally much more seriously injured by any neglect than others whose growth is of a more stunted, less free description. This is particularly the case with plants whose leaves and stems are soft in texture like those of Cinerarias, which, where really well grown, and furnished with large, stout, healthy foliage, if only once allowed to get too dry at the roots are thereby so far affected as not only to lose much in appearance, but have their flowering capabilities proportionately diminished. These remarks are made with a view to impress upon those not experienced in their culture the greater need for carefully attending to the wants of strong early propagated plants that either at the present time, or shortly will be, throwing up their flower-stems, as it often happens at this season of the year, when plants need water so much seldomer, that they quite as frequently suffer from its non-application as in dry summer weather, when the whole require it possibly every day. Especially does this occur when such things, for want of room, have to be placed on shelves over the paths and other positions not very easy of access. The same remarks apply to herbaceous Calceolarias, though these, except those propagated from cuttings, will in few cases yet have attained sufficient size to be so much liable to injury through the soil getting dry.

Shrubby Calceolarias.—Not only are these very effective when in flower, but they are much more easily managed than the herbaceous kinds. Their woody nature and the proportionately tougher character of their leaves make them less susceptible to attacks of insects, and when affected they are better able to bear fumigation, or whatever means are taken for the destruction of the animal parasites. The plants will last for years, and with fair treatment will keep getting larger, with sufficient root room, forming bushes of considerable size, very suitable for conservatory decoration. For use in this way they are better adapted than the herbaceous kinds or many other soft-wooded subjects, as they will bear when in bloom placing in positions where there is less light, such as would make the softer growing kinds unsightly in a very short time. Plants that were cut back after flowering, part of the soil removed, and repotted, something in the way that large-flowered Pelargoniums are treated, but with less destruction of their roots, should now be moved to the pots wherein they are intended to bloom. The

yellow flowered kinds, particularly the old sort, aurea floribunda, are especially adapted for using in this way, as if kept a little warm through the winter, say from 40° to 46° in the night, they will flower early, and with sufficient root room and regular liquid feeding will keep producing flowers in succession for a great portion of the summer.

Lilies.—Those that flowered the latest should now receive whatever attention they require in repotting or renewal of the surface soil; where there are not more bulbs in the pots than will have sufficient room for another season, the latter will suffice. But with all it is well at the same time to see that the drainage is efficient, for, standing about as these plants usually are a good portion of the summer on the ground or other moist surfaces, worms are very apt to get into the pots, in which case the drainage is almost certain to get more or less clogged up. From this time until spring, when the young shoots have appeared above the surface, the soil should be kept in not more than a slightly moist condition, that is, just so as to permit of the root growth that with most kinds will after this time very shortly commence. There are few finer subjects for a large conservatory than L. giganteum, although the plant in favourable situations will live and thrive with a little protection through the winter; yet it is seldom so fine as when under pot culture. Plants of this species now in cold frames or pits should have plenty of air on all favourable occasions, and, if they are expected to bloom next year, should not be allowed to suffer for want of root room, though where there is not danger of their being thus affected, it is not advisable to place them in the flowering pots until later on.

Flower Garden.

Carnations and Picotees.—The plants that are well rooted will be quite safe in cold frames. When thaw comes look carefully over all choice sorts, remove any dead leaves, and just stirring the surface soil in the pots if it is caked. Those who have planted out their beds will now see the value of a surface dressing of dry rotten manure. After the frost is over examine all the plants carefully, and gently press them into the ground with the fingers of both hands.

Gladioli.—Those who have not yet stored their bulbs should lose no time in doing so; cut the stem over close to the top of the corm or bulbs. They must be dried in the same way as Dahlia tubers before storing them; each sort may be put separately in a bag, and the whole can be stored away in a box until February, when it will be necessary to overhaul them to see if any are injured by decay, and those that are starting into growth must either be potted or planted in a warm sheltered border in order to obtain an early bloom.

Phloxes and other herbaceous plants in pots will be quite safe in cold frames if the weather is severe; if previous instructions have been followed the soil in the pots will not be very moist, and no water should be applied during frost.

Vegetables.

The long evenings will now afford abundant leisure for devising plans for future cropping, and also for summing up the results of the past season's operations, such as noting the varieties of vegetables that have been most satisfactory, or, indeed, anything by which we are likely to profit in future. By thus mentally arranging our work in something like methodical style, we save ourselves a large amount of physical labour and embarrassment, to which haphazard cultivators must of necessity be subjected. If the hints given in former notes have been acted on, all root crops will now be securely stored, and when bad weather impedes labour in the open air such root stores can be overhauled. Potatoes will need frequent examination. Examine Cauliflowers and early Broccoli daily, for the purpose of either cutting or sheltering from frost all that are ready for use. Cauliflower plants under handlights will now be the better for having the lights put over them at night, for though they may not seem hurt for some time, a few degrees of frost cripples or stunts them, and this leads to "buttoning." Those plants that were pricked out at the foot of south walls will now require shelter in order to ensure their safety, and the same remark is applicable to Lettuces and Endive. Plants of these that are fully grown are best lifted with balls of earth and planted in orchard houses, cold pits, or frames. Besides affording protection and arranging details as regards forcing Asparagus, Seakale, and Rhubarb, there is little else of a routine character that now demands attention, and therefore the present will be a good time to undertake extra work, such as making new walks, opening or putting in new drains, planting Box edgings, levelling, grubbing, trenching, and, indeed, any work for which time cannot be afforded during the busy season.

Fruit.

Vines.—The present month is generally a most anxious one for those having Grapes still hanging on the Vines, for, unless they have been well ripened, the probability is that cracking and damping off will be prevalent, and though it may be impossible to entirely stop such occurrences, much may be done to check them by daily removing all bad berries, and by keeping the atmosphere dry and warm, and removing all surplus shoots that have hitherto been left as root producers. Good keeping can only be secured by thorough and early ripeness, and any who are troubled because their Grapes are keeping badly would do well to in future start their Vines earlier. Some are prevented from doing this under a belief that if ripe too early the Grapes would shrivel before they were required for use, but with late Grapes this is never the case; but in early houses with Grapes ripe in May or June it would be marvellous if they did not shrivel, considering both the varieties of Grapes that are grown for early use and the weather at that season. Prune Vines in mid-season houses as soon as the Grapes are cut, and where there are but few remaining, cut and bottle them, in order that the Vines may receive the treatment most conductive to rest, viz., plenty of ventilation.

Notes on Lilium auratum out-of-doors.—My bulbs of this Lily were planted singly in the open ground in the spring of 1867 in Rose beds, in a light sandy loam, the subsoil being gravelly. The Rose beds are from 2 ft. to 2 ft. 6 in. wide. At no time did they receive any liquid or artificial manure; the beds were simply mulched with well-rotted farmyard manure in the month of November, this being the only protection afforded them. Out of all the bulbs planted, only five have died up to the present time. The bulbs have increased remarkably, as this past season from six to ten stalks were common enough, and in quantity and quality the blooms were most remarkable. The greatest height attained was 7 ft.; only a very few reached that figure, one stem measuring 4 ft. 9 in. high and 6 in. across the top. The stem bore 242 blooms; this was a single stem resembling in shape a Cockscomb. The appearance of the head when in flower was like a huge Hyacinth; a clump of six stems bore 166 blooms, another with four stems 75 blooms; three stems 62 blooms; one stem 6 ft. high 59 blooms; one 7 ft. 50 blooms; one 4 ft. 46 blooms. Some heads of flower lasted in perfection up till the middle of October. Lilium auratum is the only variety at present under cultivation here, at least out-of-doors. The situation where grown is only moderately sheltered, being most exposed to the west. Admirers of this beautiful Lily should find encouragement in the fact that at this place the winter of '78 and '79 had not the least injurious effect on my bulbs.—S. M., *Fortbreda, Belfast, Co. Down, Ireland.*

French Marigolds in Autumn.—I do not think that the merits of these free-growing, profuse-flowering, and continuous-blooming annuals have received the appreciation which is their due at the hands of the owners of gardens generally. Were it better known how fresh and bright they remain throughout the autumn months, presenting quite a gay appearance when the generality of tender plants have had their beauty washed away, they would undoubtedly be held in much higher esteem. Many turn from the Marigold with something like contempt, holding it as a coarse and weed-like subject. This flower has, however, been so much improved of late years, that it now forms an elegant plant for any garden, and will not fail to charm by its finely-cut, rich green foliage and bright, exquisitely-formed flowers. I recommend these annual Marigolds to the attention of flower lovers generally, as, owing to the neat, compact habit which distinguishes the best strains, they are suitable for the smallest of gardens.—John Cornhill.

Polygonum fagopyrum.—I do not find the above plant "an annual" in any seedsman's catalogue, which has surprised me very much, nor do I ever remember to have seen it catalogued. In spring, a neighbour of mine, a French gentleman, brought over a few young plants and gave one to me, which I put in a 7-in. pot and placed in the greenhouse, where it grew rapidly, and flowered in September. He put his in the open ground, where they did pretty well, but did not form any seeds, whereas mine did. There was also a difference in the beauty of the leaves; in the greenhouse they were glossy and large, his were dull and yellow, probably from the weather. The plant forms a single very strong cane, exactly like a Bamboo, except at each joint there is a singular collar composed of a leaf, and from each joint comes one leaf. When it attains a height of about 5 ft. it throws out five or six stems, each with three or four tassels composed of small crimson flowers, and each tassel being about 3 in. in length. The whole plant is perfectly straight, and therefore occupies very little room; it requires no support, the cane being like a small walking cane. The plant turned out the most interesting one I had, and was greatly admired. Groups of three or four together would show admirably in Kensington Gardens or any public park. I cannot say anything as to its improvement, but should imagine that a simple affair; it was potted in the usual potting soil, and stood waterings with guano water, but on a future occasion I shall put it in a larger pot.—W. T., *Dorset.*

Polygonum fagopyrum.

Adam's-needles and Stonecrops.—Having on my lawn a bed of Yuccas which could not be planted very near together, I was anxious to fill up between with a suitable plant, but could not for some time decide what this should be. Ordinary bedding plants would be out of the question, and although the variegated Ivies have been recommended for this purpose, I objected to them, as taking too much out of the soil. I, therefore, at the end of April took off some shoots from my old plants of Sedum fabarium, which were then about 4 in. in length, and studded them all over the bed about 6 in. apart. The combination has been much admired all the season, and when the Sedum was in bloom it formed a most distinct and handsome bed.—Berks.

Gladioli Wintered Out-of-doors.—It has been my practice for some years past to leave our Gladioli in the ground all the winter, taking them up once in three or four years and transplanting them. When the tops are dead I cut them off near the ground and give a good

coating of half-decayed manure and leaves before frost sets in ; this, I find, to be sufficient protection, the soil here being a light, sharp loam. I have sometimes had the early kinds damaged by late spring frosts. It is, I think, incorrect to say that bulbs taken up and dried till spring do not produce as fine spikes as those left in the ground. I know a very extensive grower of Gladioli whose bulbs are taken up every year, dried, cleaned, and labelled, and yet at every exhibition at which they have been shown they have carried off most of the prizes for years past —W. D., *Maidstone.*

Propagating Wallflowers.—I have lately put in some cuttings of selected dark and yellow Wallflowers. If put into some good light sandy soil, as one would those of Pansies and such like, they strike quickly and make good plants for blooming in spring. Amongst Wallflowers it will always be found that some are finer than others—of a dwarf bushy growth, and with large, well-formed flowers of good quality. The best strain of seed may not ensure kinds so good as these, therefore the expediency of using cuttings. The pretty dwarf Belvoir Castle Yellow and the double kinds are best kept propagated in this way in order to preserve the correct type.—D.

Dahlias.—While the weather is still favourable the ground should be prepared for next year. Even if the soil is rich it will not do to trust to only digging it over. It will be necessary to trench it 2 ft. deep or more, working in to it plenty of good manure. The best for this purpose is to obtain, if possible, equal quantities from the cow-sheds and stables ; throw the two up into a heap, mixing them well ; turn them over twice at intervals of a week, and in a month it is ready for use. A word here on trenching : Workmen may frequently be seen trenching a piece of ground that has been trodden hard ; they throw the lumps of soil just as they move them into the bottom of the trench. Where the soil is heavy this is very bad management, and such a loose style of trenching is to be depreciated under any circumstances. Choose a fine day, when the soil is rather dry, to fork the surface over, breaking up the lumps well. In a week or ten days after this has been done the ground may be trenched. Thus treated, a loose dry soil will be placed in the bottom instead of hard lumps, which, even if they are broken up as thrown in, have not been submitted to the meliorating effects of the atmosphere.

Felicia capensis.—This plant does not seem to be much known, or if known, is not appreciated, for out of some eight or ten lists of plants, I only find a Felicia in one, and this variety is called angustifolia, and described as a charming Aster from Australia. Now, my experience of capensis, entitles it to a similar commendation, for, having bought a small plant for 2d. in the summer of 1879, it continued to give its pretty blue and yellow flowers in a cool and shady greenhouse nearly up to Christmas ; it then gave a good quantity of bloom in the spring, and, having enjoyed the summer out-of-doors, is now full of bloom and bud again.—Bath.

Virginian Poke (Phytolacca decandra).—This is an exceedingly ornamental plant, and very suitable for the back of the herbaceous border, or for growing in spare open spaces amongst shrubs. It has been a striking object with us in the latter position for several years past, and has stood the severity of the winters with only slight protection in the form of a little mulching thrown over the roots. The plant is herbaceous, and has immense fleshy roots that penetrate deeply into the earth in search of food, thus rendering it independent of the weather, as regards moisture, and of easy cultivation. Early in spring it sends up from its crown several stout shoots that soon run to the height of 4 ft. or 5 ft., when they divide into numerous branches. These send forth numerous bunches of flower, greatly resembling those of the Currant, and when these are set and ripe the plant has a very striking appearance, on account of their great profusion and rich colour. The berries, which are of a bluish-black colour, are about the size of a Pea, but are rugged and furrowed, and generally contain ten or twelve seeds. These should be sown early in the spring in light soil, and when up and large enough to handle may be at once transferred to the positions intended for them. Should the soil be at all rich, they must be allowed plenty of room, or they will soon overgrow anything that may be standing near. Although the plant will not attain so large a size in poor soil, it will be found to fruit more freely. Grown as a pot plant, it is valuable for winter decoration in large conservatories. The juice of the berries is of a rich purple colour, and the Portuguese have the credit of using it to give a high colour to their port wine.—J. S.

The Catalpa one of the best trees for towns. (See next page)

Trailing Varieties of Tropæolum Lobbianum. — Trailing Tropæolums until lately have been in beautiful bloom, and the plants are in luxuriant growth. This glorious autumn has prolonged many tender plants beyond their usual term of existence, for it is seldom that such as Tropæolums, Balsams, &c., are in bloom at the end of October. The trailing Tropæolums, from the luxuriant growth they make, are admirably adapted for covering up bare spots that are not uncommon in gardens. In large shrubberies, where the shrubs have during the summer and autumn a bald, flowerless appearance, these trailing Tropæolums answer admirably to light them up here and there, thrusting up their gay blossoms of scarlet, yellow, or maroon amongst the leaves. As soon as touched by frost they should be speedily cleared away, and any unsightliness occasioned by their decay at once removed. Seeds scattered in the spring give stronger plants than those turned out from pots, and produce better results.—M.

Indian Shot Plants (Cannas) **Out-of-doors.**—No person visiting the parks and gardens of Paris can help being struck with the prominent part these fine plants occupy in the laying-out of the flower-beds and borders in summer. They are most frequently grown in masses in round or oval beds, the taller specimens being put in the centre and the smaller near the edge. The leaves of the Canna are generally crimson or green, the former bearing bright scarlet flowers somewhat like a small Lily, and the latter handsome spikes of yellow blossoms. They look extremely well planted alternately in rows of red and green, and then when not in bloom they always appear gay and attractive. For a background in a ribbon border nothing can be better, but the foliage of some of the species grows very erect, and therefore the drooping kinds are preferable, being much more graceful. The Canna is valuable both as an indoor and outdoor plant, and should be more extensively grown for this reason than we generally see it. It is easily raised from seed in the spring, and can be wintered with so little trouble when left in the ground and covered with ashes, that it ranks amongst the best of our garden foliaged plants.—W. A. G.

The Large-leaved Saxifrages as Carpet Plants.—These with their fine glossy leaves form an admirable carpet of the larger sorts under thin trees and on banks ; even tall hardy flowers might be allowed at times to spring from them. The effect of the foliage when seen in broad sheets in autumn is very fine ; and where the plants flower well on warm soils, the rosy blooms in spring are charming. —V.

Wood Sorrels.—Where autumn-flowering plants are needed the three pretty Wood Sorrels, Oxalis Deppei, Bowiei, and elegans, ought to be planted. They are all still in full bloom, and would go on till Christmas if the frost would let them.—H. H.

THE SHRUBBERY.

WHERE AND HOW TO PLANT TREES.

This is a large subject, but as we are now at that season of the year when planting is done, some suggestions may not be out of place.

There is a general error in planting, and especially in the case of suburban villa residences, namely, that of placing the subjects too close to the dwelling-house. Many suburban residences are literally hidden by trees, render the interior gloomy in the extreme in dull, dark weather, besides keeping the houses damp. In an infant state the trees have a pleasing appearance, but a few years' growth will cause them to cast a gloom over the apartments and keep off a free circulation of air. A few years ago it was the prevailing fashion to plant Conifers, and they were placed in quite small forecourt gardens, and soon filled up the space and darkened the house.

The plants which stand nearest to the dwelling should be of a dwarf kind, and as far as possible of an ornamental character. There is a large collection to select from, and planters cannot plead excuse for planting incongruous subjects. The trees should be selected as far as possible to correspond with the style of building. The villa shows best when surrounded by light, ornamental trees, such as the Birch, Acacia, Sumach, Laburnum, Thorn, &c., and a clump of Poplars may sometimes be introduced, so as to break the line with good effect. The cottage may have more rustic trees, while to the castle belong the Oak, Elm, Beech, Pine, &c. The mansion admits of all at their proper distance and in suitable situations.

One of the most important things in planting is to attend particularly to the shades of green, especially where the trees lie in the line of sight from the house or lawn. Flowers, which Pliny calls the joys of the trees, continue but for

a short period in comparison to the duration of foliage, therefore, charming and entrancing natural pictures should be formed by judiciously contrasting the shades of green. Even the effect of perspective may be considerably increased by the proper arrangement of lines. Trees whose leaves are of a gray or bluish tint, when seen over or between shrubs of a yellow or bright green, seem to be thrown into the distance. Trees with small and tremulous leaves should wave over or before those of broad or fixed foliage. The light and elegant Acacia has a more beautiful effect when its branches float over the firm and dark Holly or Bay tree. In some situations the bare trunks of trees may be shown; in some they should be concealed by evergreens and creepers. Vine-like creepers can be utilised to furnish these, and form natural festoons where the extent of ground will allow of wilderness scenery. In all situations Nature should be assisted, but never deformed by clipping, for ingenuity ought to be employed to disguise art, not to expose it.

The individual beauty and graceful outline of plants cannot be displayed when they are too much crowded, as they are then in danger of being drawn up into unnatural shapes; indeed, this is a common fault in arboreal gardening; therefore the oftener open spaces can be admitted, the more fully will the shrubs exhibit themselves to advantage, and the more cheerful will be the walks winding among plantations of this character, for walks become insipid and gloomy when confined for any distance. When the wind and its possible effect on trees or on the plain need to be considered by the planter, it is necessary to take care so to arrange the position of the trees that only those gales which are most congenial to the growth of particular plants should be allowed access to them.

The undulating appearance of a plantation or piece of landscape will be considerably attested by a gradual progression from the lowest shrub to the highest tree, and, again, from the highest to the lowest. But as many shrubs will not flourish under certain trees, their respective situations demand consideration. These shrubs may, indeed, exist under such favourable circumstances, but their unhealthy appearance will never be pleasing. Where the shade of any tree is too powerful for Laurel to thrive, Ivy may be planted with advantage if it is desirable to cover the ground with evergreen. Indeed, we can scarcely overrate the value of Ivy as a subject for carpeting spaces under large trees, like the Cedar of Lebanon, where Grass will not grow. In proportion as the shrubbery or plantation recedes from the dwelling it should become more rural in its character, more especially if the residence be in the cottage style. Here climbers and such plants as require support from others can be introduced with advantage. The most delightful groups which charm the eye in a pleasure ground are generally those where Nature, freeing herself from the shackles of art, depends only on her own assistance for support. Her most delightful beauty is chiefly to be seen there where her various creations combine spontaneously and without restraint.

The means by which climbers and such plants raise themselves up, so to speak, so as to offer their flowers to the sun, are as various as they are curious, and they seldom blossom whilst trailing on the ground. The Ivy, Bignonia, Ampelopsis, &c., ascend by the help of little fibres, which fix themselves to the bark of trees or crevices in walls so tightly, as to render their disengagement a difficult thing to be accomplished without injury to the trunk or building they are attached to. The Honeysuckle, like the Hop, twines itself spirally around the trunks or branches of trees, and often clasps them so closely and tightly as to make an impression on the hardest timber. Others, as the Vine, Passion-flower, &c., rear themselves by means of corkscrew tendrils, which holds so fast, that the strongest winds seldom disunite them from their support. Some plants climb by means of a hook on their leaf-stalks, or have a kind of vegetable hand given them, by which they are assisted in mounting, as the Pea and several others. But this is something of a digression, though related to the subject. The sombre, gloomy walks formed by lines or hedges of Yew, Cypress, Holly, &c., should lead to the spot from which there is the most beautiful prospect, and to the gay parterre where Flora has diffused her flowery beauties, as a contrast of this character, particularly when it breaks suddenly upon the view, adds greatly to the cheerfulness of the terminating view.

Bad taste is seldom more conspicuous than when we see trees or plants marshalled in regular order, and at equal distances, like beaux and belles standing up for a quadrille or country dance. Where the situation will permit, and it is desirable to introduce patches of colour, four or six Lilacs, or Guelder Roses, or Thorns, or Laburnums, &c., should be grouped in one place, so as to give effect in various parts by means of such masses of colour. The Guelder Rose should appear as if escaping from the dark bosom of Evergreens, and not a plant should be set in the ground without the design of adding harmony to the whole. A shrubbery should be planted as a court dress or a stage costume is ornamented—for general effect, and not merely for particular and partial inspection. Boldness of design, which seems to be more the offspring of Nature and chance than of art and study, should be attempted, but though boldness is what the planter should aspire to, all harshness or too great abruptness must be avoided by a judicious mixture of plants whose colours will blend easily into one another.

The most beautiful shrubs should occupy the most conspicuous and prominent places. For instance, a projecting part of the plantation should be reserved for the fine, high-coloured Rhododendrons, or clumps of R. ponticum, American Azaleas, Kalmia latifolia, and other bog plants. Here, it should be observed, that there is a necessity for proper soil being prepared for these American plants, as they are likely to decay if not placed in earth congenial to their nature. With these can be associated some of the fine hardy kinds of Heath, as the same soil suits both. With respect to evergreens, considerable judgment is required, in order to relieve their uniform appearance during winter. This may be done by a skilful arrangement of different kinds and those with variegated leaves and ornamental growth, or such as retain their brilliant berries during the winter months. However, a well planted shrubbery depends not so much for the beauty, on the expense, or rarity of the plants it contains, as on the selection of trees and shrubs which succeed each other in blooming throughout the year, or whose various coloured fruits grace them for the longest duration of time.

R. D.

Old Judas Tree in a French garden

The Catalpa.—This is one of the best of ornamental trees, so far as foliage is concerned, and one that not unfrequently produces conspicuous panicles of white lilac-dotted flowers after seasons sufficiently warm and dry to ripen its somewhat luxuriant and succulent growth. It is a a native of China and Japan, and grows rapidly on warm soils in sheltered situations. It is one of the best of all trees for town gardens, growing well and flowering like a tree Gloxinia in the heart of London. The Japanese employ the wood in cabinet work and in the manufacture of fancy articles, but it is only as an ornamental tree that it is of value in English gardens. In the Middle Temple Gardens there is a singular old specimen of it, which has evidently at one time been of large size, but it is now much reduced and time worn. Another example of it, fully 30 ft. in height, used to grow in the arboretum of the Royal Horticultural Society at Chiswick, where it bloomed well every year. It is rather a curious fact that the honey or nectar secreted by the flowers of this tree is poisonous. A golden-leaved variety of it, called aurea, has been often used in Battersea Park as a sub-tropical plant, and when contrasted with the purple-flowered Clematis Jackmani in one of the beds near the rockery, it had a fine appearance. For flower garden purposes it should be cut back every spring, so as to induce it to throw up vigorous shoots and produce large leaves.

The Judas Tree.—This, which is supposed to be the kind of tree on which Judas hanged himself, ranks amongst the best of flowering trees, but when old it is not much valued for beauty of form. The annexed engraving shows an old specimen of it that has always seemed to us remarkable from the point of view of form alone. It is, of course, when in full flower, an object of great beauty. The Judas Tree is one of the most neglected in modern planting, though there are good specimens of it to be seen here and there in old gardens. The one which we figure grows in front of one of the buildings in the Garden of Plants. The botanical name of the Judas Tree is Cercis Siliquastrum. Its flowers, which are purple, are produced in May, both from the young twigs and the old wood, before the leaves appear. The flowers are succeeded by thin seed-pods 6 in. long, which remain on the tree throughout the year. Seed seldom ripens in this country, and propagation is effected by seed procured from foreign sources or from layers and cuttings of the young branches.

Weeping Trees.—The association of the common Weeping Willow with water leads people to think that it will not succeed elsewhere; but there are few spots, even away from water, in which it will not thrive if the soil be deep. I have seen really grand specimens of it

growing on lawns. Scarcely less beautiful is the Weeping Birch; for, although its spray is not so long as that of the Willow, yet, owing to the tree being more lofty, it is nearly equally effective. Not so graceful, perhaps, as either of these, but a better arbour tree, is the Weeping Ash. Owing to its extreme pendulous habit, it is necessary that it should be worked on very tall stocks, as if height is not secured at first, it cannot be obtained afterwards. The Weeping Ash should be planted in quiet, secluded spots, where, when fully grown, it may form a pleasant retreat during sunny days. It will be found that a tree, with a stem considerably bent or inclined at the top, will form the most convenient arbour tree, as the position of the stem will then be at one side, instead of in the centre.—A.

ROSES.

Tea-scented Roses.—Tea Roses may be budded on the Brier as successfully as Perpetuals. Some are, however, too tender for outdoor culture, but we have many varieties raised from seed of Gloire de Dijon which are quite as hardy as the Hybrid Perpetuals. Strong-growing sorts must be selected for standards, but the more moderate growers may be worked on Briers from 6 in. to 2 ft. above the ground. These may be potted and placed in a pit or cold frame during the winter. Tea Roses generally grow and bloom so freely that the sap is nearly always in motion, and it is partly on this account that they get injured by frost; they grow so freely, particularly in the autumn, that much of the wood that is made does not get ripened. Various plans have therefore been tried to stop their growth in autumn and winter. One consists in cutting the roots and lifting the plants with a strong garden fork as much as will be sufficient to stop the root action; but undoubtedly the best plan is to nip out the tops of all growing shoots in November, and at the same time to cut off every Rose and bud found upon the tree—operations which induce it to rest, and which cause much of the wood to ripen, and in that way withstand the effects of frost. It is even good practice to nip out the tops of Hybrid Perpetuals which are found to be growing vigorously in November. All dwarf Tea Roses are best taken up this month, potted, and placed under glass in a pit or cold frame. In May they may be planted out again. The following make good standards, and need no protection, being quite as hardy as most of the Perpetuals, viz.: Cheshunt Hybrid, Belle Lyonnaise, Adrienne Christophle, Gloire de Dijon, Comtesse Ouvaroff, Madame Emile Dupuy, Madame Levet, Madame Ducher, La Tour Bertrand, Triomphe de Guillot Fils. The following Noisettes have been proved to be perfectly hardy, viz.: Reine des Massiffs, Bouquet d'Or, Madame Caroline Kuster. As half-standards the following can be recommended, but they will want a little protection, viz.: Comte de Paris, Safrano, Abricoté, Madame Villermoz, Madame Berard, Souvenir d'un Ami, Devoniensis, Madame Falcot, and the fine new yellow Rose, Perle des Jardins.—H. T.

Pruning Roses.—The usual season for pruning Roses being near at hand, it is well to form some definite plan as to the system which shall be adopted. Where the object aimed at is a large display of bloom, I find that long shoots "pegged down" are preferable to close spur pruning. Raised banks for shutting out unsightly objects look remarkably well clothed with Roses in this way; and for a background, standards pruned a similar manner, with t eir long shoots brought down in the form of an umbrella, thereby concealing the bare stems, have a fine effect. Such varieties as Maréchal Niel, Gloire de Dijon, and Souvenir de la Malmaison, treated in this way, answer admirably, and are, indeed, more continuous bloomers than many of the so-called Perpetuals. That beautiful summer Rose, Charles Lawson, is, in its season, a really splendid object. After the beds are pruned and manured, we usually peg down the shoots with a quantity of stout pegs, varying from 18 in. to 24 in. in length, selected when preparing Pea sticks, and if good Ash or Hazel, they will last two or three seasons, and have a neat appearance.—G., *Henham.*

Correction.—"Note on Planting Fruit Trees," p. 424.—Wall trees should be so placed that the base of the stem may be about 6 in. from the wall (not 16 in.).—Ombu.

To the Trade.—Nurserymen and seedsmen are requested to forward copies of their catalogues to the editor of Gardening as soon as they are published. Office: 37, Southampton Street, Covent Garden, London, W.C.

ANSWERS TO QUERIES.

3576.—**Pentstemons, Auriculas, and Polyanthus.**—Six good Pentstemons are—A. Laing, deep rose, white throat; Meteor, bright rose; Atro-cœrulea, purplish-violet; Helvetia, white, shaded lilac; Louis Kien, crimson-scarlet; and Stanstead Rival, bright crimson. This will be found to be a fine selection, probably as good as can be had. It must, however, be understood that the Pentstemon reproduces itself freely from seed, and seed saved from a first-class strain will probably give plants that will produce as fine blooms as any good named kinds. Six good Alpine Auriculas are—King of the Belgians, Selina, Diadem, John Ball, Evening Star, and Prima Donna. With the exception of Diadem, raised by Mr. Gorton, of Manchester, all the rest are raised by Mr. Turner, of Slough, and all may be got from him. Six good Polyanthus, of the Gold-laced section, which is the old florists' section, are—Buck's George IV., Lancer, Exile, Cheshire Favourite, President, and Early Lincoln. These are as good as can be found, and are always placed in the front ranks at exhibitions. Pentstemons are about 12s. per doz. for good kinds. Auriculas are more costly; the selected six would perhaps be priced at from 2s. 6d. to 3s. 6d. each, whilst the Polyanthus could hardly be obtained for less. These latter are very slow propagators, and strong plants are not freely parted with. It is necessary that they should be obtained from some bonâfide grower, as there are not a few wretched sorts in commerce under these names that are in no way equal in refinement and beauty. Few classes of florists' flowers give such indifferent results from seed as does the Gold-laced Polyanthus. It is just possible that 10,000 seedlings of a first-rate strain would not give one really good flower. Many of the best kinds were raised twenty, thirty, or forty years ago, and cannot be beaten. There is a fine field open to the amateur florist here.—A. D.

3569.—**Woolly Aphis on Auriculas.**—There are various methods of getting rid of the woolly aphis on the roots of the Auricula, and the one we found most effective when suffering from a similar difficulty was to put a wineglass of paraffin into a gallon of water, stir it well to mix the oil with the water, and then to knock the plants with balls of soil entire from the pots, dipping them into the solution, giving them a little motion to get all the insects and the outer surface of the ball in contact with it, and then setting them close together in shallow boxes to allow the balls to dry off a little before repotting. The old pots should be well washed in strong soda-water, or new ones be used in their places. If this does not answer the plants must be shaken out and the roots washed clean. We think with you, as with us, the dipping will prove quite effectual.

3575.—**Violets not Flowering.**—There can be little doubt but that sometimes Violets will become blind, as Strawberries will, and fail to produce bloom. The only remedy in both cases is to get rid of the old stocks and obtain other plants from stocks that are true. The Violet naturally produces seed pods or female flowers in the summer, but these are entirely dissimilar from the blossoms that yield such delicious perfume in the spring. Charred garden refuse is strongly recommended for Violets, and it may prove useful in the present case if either applied to old plants as a top dressing, or applied to other soil where a new bed is made. This bloom blindness is an unusual feature, and must be the result either of the stock or of the soil. All through the Middlesex market gardens Violets are blooming freely now.—A. D.

3583.—**Trees and Plants for Boggy Soil.**—The Liquidambar or Sweet Gum tree would probably thrive on the highest, most distant spot from the river, as would also many other trees and shrubs, including the Bird Cherry, Dogwoods, Taxodium distichum or Deciduous Cypress, and Rhododendrons. There are also many beautiful things among the Maples and Poplars which will thrive in moist situations—notably the Eagle's-claw, Maple and the variegated Acer Negundo, the scarlet Maple, the white Poplar, and Canadensis Nova. Among flowering plants a very extensive list might be made out. Round the margins of the water good situations would be found for the strong growing Grasses, such as the Carex family, the Pampas Grass, and some of the Bamboos, including the common one, Arundo donax. The New Zealand Flax (Phormium tenax) would be quite at home, as would also many of the Spiræas or Meadow Sweets, and Lythrum roseum superbum and Salicaria. The hardy Lobelias, such as syphilitica, delight in moisture; and then there are the Epilobiums or Willow Weeds, the Trilliums or Wood Lilies; and as select choice plants, the hardy Cypripediums should have a place, and a few of the Japan Iris might be tried.

3581.—**Soil for Plants.**—The best substitute for peat is leaf-mould thoroughly decomposed, with crushed charcoal to keep it open. Sand is of use only for its mechanical effect, and because it blends more perfectly with the soil than any other agent will do. River or pit sand or road drift may be obtained nearly everywhere; sea sand, by reason of its containing salt, should not be used for delicate rooted plants till the salt has been removed by frequent washings. Loam and leaf-mould of good quality may be worked in, varying proportions to suit nearly all plants.

3566.—**Brussels Sprouts Seed.**—Instead of digging up the stems, as would be requisite when the produce was gathered in the ordinary course, leave them to flower, and in due course seeds will be produced. Take care no other member of the Brassica family are in flower at the same time very near, or a cross may be effected, and the goodness of the strain be injured.

3586.—**Insects in Mushroom Bed.**—Visit the Mushroom house at night with a candle; you will soon ascertain what eats the Mushrooms, and may take your measures accordingly. If woodlice are present, trap them by placing wisps of hay in empty 6-in. pots inverted or laid on their sides. Occasionally empty the insects out into boiling water. Pour boiling water round the outsides of the bed close to the wall; both the woodlice and the snails will retire there when not feeding and may be destroyed. To trap the snails lay down small heaps of brewers' grains or bran, or bits of orange peel laid hollow side downwards will attract them.—E. H.

3648.—**Treatment of Deutzias.**—It is not stated whether the Deutzia is in a pot or in the ground. In either case the roots are probably earth-bound; 3 in. or 4 in. of the top soil may be carefully removed, and replaced by any suitable compost. The lower depth of soil may previously have been stirred and loosened, and the drainage attended to.

3649.—**Water Melons.**—In India Water Melons are grown to a large size in the sandy beds of certain rivers in the hot weather when no freshets are expected. A hole is scooped out and filled with manure and loam; in it the young plants are set. The water is close to the surface, and the hot sun draws it up to the roots. The plant in this way revels in the sun, and the Melons seem to be growing, as if by magic, in a dry sandy waste. Acres are grown in this way about Seringapatam.

3653.—**Dried Lavender.**—Mitcham and thereaway is the home of Lavender. J. Field, Medical Hall, Marine Parade, Brighton, supplied me with excellent dried Lavender at a moderate price.—M. P.

3660.—**Plants for Aquarium.**—An aquarium, 3 ft. long and say 1½ ft. wide, is best made of slate frame, with one part dark where the fish can go into retirement. They should have rockwork studded about, among which they can amuse themselves by playing at hide and seek. Vallisneria is one of the best plants to grow. The bottom should be covered with clean gravelly pebbles. A tin tray containing damp sand to grow small Ferns, or to keep filled with cut flowers, &c., looks well, and the top of the open gauze cover may be similarly decorated.

3571.—**Grass under Trees.**—The best thing "G. J." can do is to write to Messrs. Sutton or Messrs. Carter. State the nature of the soil and some approximation to the density of the shade, and ask them to make a selection of the best Grasses for the purpose. And if it is possible for Grass to grow at all, he will in the course of time have a good turf. This is the plan I have tried, and I am satisfied with it.—E. H.

3572.—**Jasmines not Flowering.**—Perhaps the cutting back has been at fault. Lay in some of the best young wood at nearly full length and you will obtain flowers.

Uses of Lawn Mowings.—It is a waste of good Grass to make it directly into manure if there are any animals kept on the place; horses, cows, pigs, asses, and goats eat Grass cut with the machine readily.

Hollow Celery.—The early white Celery is apt to become hollow at this season, especially when sown early and checked in its growth.—E. H.

3570.—**Fir Trees for Screens.**—The common Spruce Fir will answer the purpose, and so will the common Yew and the American Arbor-vitæ, and the Cupressus Lawsoniana makes a quick-growing elegant hedge plant.

3577.—**Figs under Glass.**—Have the house 16 ft. wide. Grow the plants in large pots, and plunge the pots in a pit or border, lifting them annually, top-dressing frequently, and support with liquid manure when necessary. The Brown Turkey and White Marseilles are the best and surest bearers.

3574.—**Keeping Roots of Scarlet Runners.**—Dig up the roots and preserve them in dry sand. Examine them occasionally during winter, removing any dead or decaying matter. Plant again towards the end of April.—E. H.

3584.—**Scale on Peach Trees.**—Dissolve 6 oz. of Gishurst Compound in a gallon of soft water. Add one quart of Tobacco liquor and sufficient clay to make it as thick as paint. Apply it carefully with a soft brush when the leaves are down.—E. H.

3582.—**Sea-sand for Plants.**—I use sea-sand for all purposes, and with the best results. For years I have used it for bulbs of all sorts. I first wash it in plenty of fresh water, and then dry it for use.—G. R. BARRETT.

—— The salt in sea-sand is of no use to the plant which is being struck in it; the sand acts as a mechanical agent in keeping open the soil; it is to facilitate the passage of water and the retention of air; any coarse, gritty material is of equal utility.

3533.—**Fungus in Vine Border.**—Take out the soil from your Vine border, and replace it with good coarse loam, with a fair proportion of coarse bones added. If the fungus is only on the top of the border a mixture of soot and salt diluted with water would destroy it, but I would advise you to engage the services of a practical man to perform the operation.—T. LOWE, *Penketh.*

3584.—**Scale on Peach Trees.**—Wash the trees infested with a solution of Gishurst Compound, about 8 oz., to the gallon, then mix up into a paint a small quantity of soot, soft soap, and clay, and paint the trees carefully over. I have found the above the best remedy to exterminate this pest.—THOS. LOWE, *Penketh.*

3579.—**Acorns for Picture Frames.**—1. Shellac put in a bottle, and methylated spirit just sufficient to reach the top of the shellac; shake and get it dissolved. 2, Judson's Brown Dye

—— "Nil Desperandum" should buy about ½ an oz. of shellac and put it into about a tablespoonful of methylated spirit of wine. Keep it in a well-corked bottle until dissolved. Then apply it in the same way as glue to stick the Acorns in the cups; but use a common brush, as a good one will be spoilt.

3578.—**Passion Flowers from Suckers.**—My Passion flowers were four or five suckers pulled up and stuck round the edge of a pot in the spring of 1879; the same autumn I turned the potful out into a bed made with walls of turf, and filled with drainage and rich soil, plenty of manure, prepared for a Maréchal Niel. This year they made nearly a dozen shoots from 6 ft. to 13 ft. long, and bloomed very fairly during the past summer.—PAT.

3553.—**Palm Losing its Leaves.**—I know of a Palm, which having lost its leaves, was restored by being shook out and re-potted in good soil with plenty of leaf-mould. It was kept in a dwelling-house. The re-potting and nursing were done by an inexperienced lady.—PAT.

Although the following questions are answered by the Editor, he will be obliged to any of our readers who may think well to answer them according to their experience.

3668.—**Plants for Boxes on Greenhouse Shelves.**—*H.N.*—Hyacinths, Tulips, Squills, Lily of the Valley, Anemones, and other bulbs would do well in boxes on greenhouse shelves. They must have good drainage and good sandy soil.

3669.—**Pear Trees Not Growing.**—A twelvemonth ago I planted some pyramid fruit trees, two of which (Pears) did not "break" in the spring, and have remained as if dead. On examining them now, however, prior to replacing them, I find the wood plump and quite green when the skin is raised with the nail; the branches also break green and fresh, even at the tips. Is it possible for trees to remain dormant so long? and is there any chance of their recovering next spring? or must I consider them dead?—MAS ELOH. [It is not unusual for transplanted trees to remain, as it were, dormant during the summer after they are moved, and to break into growth the following spring. We would leave them till spring and see the result.]

3670.—**Azaleas Losing their Leaves.**—I have some sweet-scented and other Azaleas which are losing their leaves. Should they do so? They have been out-of-doors during the summer months, and are now in a cool greenhouse.—META. [The Ghent or hardy Azaleas are deciduous, and lose their leaves at this season, but Indian or greenhouse Azaleas are evergreen.]

3671.—**Crassulas Bare at the Bottom.**—*F. M. S.*—Cut the plants down to within 4 in. or 5 in. of the soil and put in the young tops as cuttings, using sandy soil or the purpose.

3672.—**Euphorbia jacquiniæflora.**—*H. E.*—This plant wants a temperature of at least 60° at this time of the year to keep it in good health. If 10° higher can be given all the better, provided the plants are not kept too far away from the glass.

3673.—**Planting Forget-me-nots.**—Is is right to plant out Forget-me-nots and Pansies for spring blooming into the beds at once? They have been raised in a frame, and I thought of planting Crocus bulbs, &c., at the same time, so as to keep up a succession of bloom in the flower-beds near the house.—E. P. [Plant at once if the weather continues open.]

3674.—**Flowering Almond.**—*John Williams.*—The flowering Almond succeeds well in some of the forecourts near London. It resembles a Peach tree.

3675.—**Adiantum farleyense.**—I have one of these Ferns, which has flourished until lately, but the fronds have turned yellow. It is kept in a moderately heated greenhouse.—EINNA. [Probably the heat is not sufficient to keep it growing through the winter. Keep the soil moist, and put the plant into the warmest end of the house. Do not wet the foliage. A moist heat is necessary for the well-being of this plant. It will no doubt throw up new fronds in spring.]

3676.—**Spent Hops in the Garden.**—Are spent Hops of any use as a top-dressing for Raspberries, Rhubarb, and Black Currants?—J. H. L. [They would serve as a mulch in dry weather, but their manurial properties are very small.]

3677.—**Cordon Peach Trees.**—*Rev. R. M.*—You would certainly succeed better with cordon Peach trees planted out in an orchard house than with trees in pots, provided the roots can be got at for pruning when needed.

3678.—**Wintering Tuberous-rooted Begonias.**—*M. C.*—Keep them in a greenhouse temperature, and gradually put them to rest by keeping the soil drier. Store them in a shelf or turn the bulbs out of the pots, and put them in a box of Cocoa-nut fibre.

3679.—**Arum Lilies.**—*M. C.*—At this time of the year these require a temperature of 40° to 50°, keeping them well supplied with water. If in small pots, liquid manure will be beneficial to them. When they have done flowering in spring re-pot them or plant them out-of-doors in rich soil, and lift them and pot them in September. Any good soil will do for them, but turfy loam and rotten manure or leaf-mould make the best compost.

3680.—**Heat for Conservatory.**—What degree of heat should a conservatory be kept at containing Azaleas, Geraniums, Camellias?—M. L. [40° at night. During cold weather a few degrees lower will not hurt, and during very mild weather a few degrees higher may be allowed. By day 45° to 50° will be plenty high enough.]

3681.—**Wintering Coleuses.**—*S. H. L.*—If you have not a warm greenhouse you will do little good with Coleuses. Your best plan would be to throw them away and get a few young plants in spring.

3682.—**Tropæolum Leaves Turning Yellow.**—*E. T.*—They generally do when winter approaches. Your flower is of the Lobbianum section.

3683.—**Pigeon Manure for Plants.**—*Wordsley.*—This is quite equal to fowls' manure. It is very strong, and should be used with care.

3684.—**Begonia Leaves and Pelargonium Blooms Falling.**—*F. J. L.*—We might tell the reason of this if we knew under what circumstances the plants are being grown.

3685.—**Heat for Hyacinths.**—*H. C.*—Hyacinths which have been potted and covered up in a frame for six weeks should be ready for placing in heat. Examine them, and if the pots are full of roots, place them in a temperature of 50° or 60° if convenient. If you can plunge the pots in a gentle bottom-heat, so much the better. Keep them slightly shaded from the light for a few days, and afterwards give them all the light and sun possible. It is not imperative that they should be very close to the glass if they are in a light situation.

3686.—**Removing Leaves from Christmas Roses.**—*F. L. L.*—Dead or decaying leaves may be removed, but it is not wise to cut off those which are green and healthy.

3687.—**Achimenes for Window Culture.**—*A. A., Stafford.*—Having shaken the bulbs out of the soil and put them into a pot of sand, you may keep them on a warm (but not hot) shelf till spring, when you may pot them in good soil, and place them in the window of a warm room. Do not water till you have potted them and they show signs of growth.

3688.—**Washing the Leaves of Geraniums.**—*A. A., Stafford.*—You are quite right in removing the dust from the leaves of your window plants, but you must be careful not to deluge the roots with water at this time of the year. A damp sponge is all that is needed.

3689.—**Chrysanthemums with Different Coloured Flowers.**—*P. H. S.*—It is not unusual for the Chrysanthemum to bear differently coloured flowers on the same plant.

3690.—**Mushroom Growing.**—I have a Mushroom house with all the appliances of hot water and shelves, but the results are not satisfactory. I have been now two winters without anything like a crop. I am told that the failure arises from the want of a shed to dry the horse droppings, and that this kind of manure only is of any use in Mushroom growing, and that the droppings from cows are useless. Is this so?—INDOCTUS. [Cow manure alone is useless for Mushrooms; horse manure only can be depended upon. The long straw should be shaken out of it, and it should be placed under cover and be frequently turned to let the rank steam out of it. Mix a few barrow-loads of good garden soil with it, and make the beds 12 in. or 18 in. thick. It must be well trodden or beaten down, and when the temperature of the beds is found to be on the decline spawn at once, and cover with a little sifted soil.]

3691.—**Planting Figs for Covering House.**—*J. E. T.*—Plant now or in spring. Virginian Creepers may also be planted now or in spring. We do not know what Flax you mean.

3692.—**Pear Tree for Front of House.**—What kind of Pear tree would be best to plant against a wall of house with a south-west aspect to cover a large space?—PAT. [Marie Louise.]

3693.—**Bulbs Out-of-doors.**—I wish to plant out-of-doors Hyacinths and Polyanthus Narcissus, purchased for pot culture, but fear they are too tender. How can I plant and protect them so as to be safe from frost? Will they flower freely outside?—VIX. [They will be all right if you protect the blossoms by means of canvas, or some similar material.]

3694.—**Covering Bare Walls.**—Having an ugly wall 8 ft. high which I want to cover, would you advise my making a box to place at the top, planting it with variegated Periwinkle to hang down?—G. EUSTACE. [We should rather advise making a good border at the foot of the wall, and planting in it quick-growing Ivy.]

3695.—**Washing Fruit Walls.**—When walls are washed with a mixture of Portland cement, grey lime, and copperas, ought the fruit trees to be untied? and will the mixture hurt them or may they with safety be washed over?—ELEANOR. [The trees must not be washed with such a mixture as you mention.]

3696.—**Strawberries for Forcing.**—*H. C.*—Put them in cold frames at once if you can do so.

3697.—**Loam.**—*Novice.*—The top spit of a pasture laid by and rotted is the soil known as loam. Clayey loam well when pulverised by the weather is well suited for plants if plenty of sand be added to it, and its heaviness is counteracted by a mixture of light leaf-mould or peat. Bog soil is of no use for pot plants; it goes sour.

3698.—**Camellia Buds Falling off.**—*J. H.*—See article in last issue of GARDENING.

Red Musk.—*R. J. Thompson.*—Mimulus cardinalis.

Books.—*Constant Subscriber.*—1 and 2, "Hobday's Cottage Gardening," price 1s. 9d., post free from our office; 4 and 5 we cannot answer.

Names of Plants.—*F. M. S.*—Hedychium Gardnerianum. It is not hardy, but may be planted out during summer.——*Saxon.*—1, Selaginella formosa; 2, S. denticulata; 3, Pteris serrulata.——*Moss Side.*—Selaginella denticulata. If the air of the room is very dry, you must keep the plant under a bell-glass.——*J. B.*—Kniphofia Uvaria.——*Mrs. R. P.*—Tradescantia discolor.——*R. A G.*—Asplenium Fabianum, Tradescantia zebrina, Platyloma falcata, Curculigo recurvata.——*M. R.*—Nerine crispa.——*M. J. M. B.*—Lycium barbarum.——*J. Stark.*—Begonia Weltoniensis. It is tuberous rooted and dies down in winter.——*A. B., Esher.*—3, Marie Louise d'Uccle; 4, Buerré Bosc; 5, Marie Louise; 6, Beurré Capiaumont; 8, Marie Louise d'Uccle.——*Dalton.*—1, not known; send when ripe; 2, Emile D'Heyst; 3, Althorpe Crassane.——*Leeds Subscriber.*—1, Pilea muscosa; 2, Cineraria; 11, Trachelium cœruleum; 13, Gasteria (species); 14, Phyllocactus (species). All the Begonias are varieties of B. Rex, except No. 8, which is B. argyrospila.——*Joseph Eustace.*—Cox's Orange Pippin, probably. We cannot be certain when only one specimen is sent.——*H. Mason.*—The Apples were crushed to pieces.

QUERIES.

To Querists.—*All questions are inserted or answered in these columns free of charge, provided the following rules are observed: 1.—Write clearly and concisely on one side of the paper only. 2.—Use a separate sheet of paper for each query. 3.—Give full name and address, with any nom de plume or initials you may wish used in the paper. Questions only of interest to the persons asking them should be accompanied with a post card or stamped addressed envelope for reply.*

3699.—**Material for Rockwork.**—I am about building a small house for the growth of exotic Ferns, and wish to form an artificial rockwork in which to plant them out instead of growing them in pots. Could any one inform me if there is any composition better adapted for the formation of the rockery than Portland cement, the colour of which I do not like? I have seen rockeries constructed with a material which had a very natural appearance and was of a nice brown tint, altogether far superior to Portland yet seeming to be cement of some kind. I want something more durable than cork?—R. W. J.

3700.—**Cost of a Greenhouse.**—In GARDENING for June 21, 1879, there are directions how to build a small greenhouse. Can any one give me an idea of the cost?—WORDSLEY.

3701.—**Creepers in Chalky Soil.**—What are the best Creepers for front of red-brick house with E.N.E. aspect? Soil chalky.—G. T. P.

3702.—**Hydrangeas in Pots.**—At a flower show held about two months ago I saw some pretty exhibits of Hydrangeas in small flower-pots. I should be very glad of some information how to grow them in this way. Perhaps some of your correspondents would kindly enlighten me.—TREMADOC.

3703.—**Slugs and Snails.**—My garden is terribly infested with slugs, which I have tried in vain to exterminate. I have just heard that a weak solution of corrosive sublimate in water is a thorough cure, used by means of a watering-can. Has any one tried this? and if so, in what proportion should the sublimate be used, so as not to injure the plants?—W. S. S.

3704.—**Clubbing in Cabbages.**—Will "W. S." (see GARDENING, October 16) be so good as to say what quantity of redlead he puts to his mixture? Say for a barrowful of loam and manure.—J. F.

3705.—**Building a Forcing Pit.**—Will some reader of GARDENING kindly give me practical instructions how to build and heat a forcing pit? I require a place to protect Geraniums, &c., through the winter, to force Celery, Cauliflowers, &c., and strike cuttings in spring, and to grow Cucumbers or Melons in summer. My garden wall (of stone) is 4 ft. high, and from there to the path in the middle of the garden is 6 ft. I would like to make the pit 18 ft. long, but do not know how to proceed. I, of course, want a maximum of utility at a minimum of cost. Will some reader kindly give me advice?—TREMADOC.

3706.—**Soil for Plants.**—Will some one kindly tell me when I should re-pot or basket a Stanhopea insignis? and what soil, &c., suits it best? It seems perfectly matted in roots and leaf-bulbs, the latter growing outside the basket. Also, what compost suits the Sanchezia nobilis best? I have a Pancratium fragrans in bloom now; when must I divide the bulbs? and what is the best soil for it?—C. B. Z.

3707.—**Chrysanthemum Bearing Differently-coloured Flowers.**—I have a Chrysanthemum which I have grown for some years. I have several of the same sort blooming this year; one is producing on one branch yellow flowers, another branch producing white flowers, another branch produces yellow and white flowers, one flower half white, the other half yellow. I may state that till this year all the flowers have been yellow. Can any one give an explanation?—G. P.

3708.—**Wintering Beetroots.**—One way recommended by "W. W." (GARDENING, Oct. 16) to winter Beetroots is to take them up and clamp them like Potatoes. I have succeeded in keeping Potatoes in first-rate condition through hard winters by taking up every alternate row for use and earthing up the other rows. Would a similar treatment not do to preserve Beetroots? Of course this season is now passing away, but a hint on the subject might be of service in future.—J. D.

3709.—**Plants in Glass Porch.**—I have a porch 6 ft. by 6 ft. attached to my house facing west, the entrance to which porch is north. The lower portion is of

wood to about 3½ ft. in height, with 6 ft. of glass to roof, which is also covered with the same material. I have one ventilator over door 2 ft. long by 1 ft. in depth; three shelves, one level with the top of woodwork, another 3 ft. above, and the other under roof. I cannot, however, make plants flower. They partly open, and then dry or wither off, and other plants grow scraggy and never flower. The glass on south side of porch is opaque, and the other sides (west and north) coloured and posted, the only transparent glass being that on the roof. What effect would this description of glass have on the flowers and plants, or is their failure attributable to improper ventilation? I am inclined to think both are to blame, but shall be glad to receive the advice of more experienced hands.—CORNUBIA.

3710.—**Diseased Pansies.**—Will any reader kindly inform me how I am to save Pansies from a kind of decay at the roots, caused, I believe, by some small grub or worm? The finer sorts only are attacked.—J. PRATT, *Durras*.

3711.—**Moving Large Apple Trees.**—Can large-sized standard Apple trees be removed without danger? and what is the best time and manner of doing so? I have some which were planted in a kitchen garden near to walls some eight or ten years since, and they begin to shade the walls and injure other fruit trees.—H. S.

3712.—**Fountain for a Fernery.**—I have a small greenhouse, which I purpose using as a Fernery; in the centre of my rockery I wish to have a small fountain; will some reader kindly inform me how it should be constructed? I wish it to throw the water about 3 ft. or 4 ft. from the jet; what kind of jet will be best? What size piping, and how high above the jet should the tank be fixed to get the necessary force of water? Any information will greatly oblige.—T. F. W.

3713.—**Tuberoses.**—I wish to grow a few Tuberoses. I have got four dozen from Holland. They have had their tops cut off about 2 in. above the bulb, and have no fibrous root. Will some good grower advise me as to their treatment, *i.e.*, size of pots, soil, where to keep them in winter after potting, and the best summer treatment, and what season of the year I can get the best flowers? I am not particular about having them early; next July or August will do.—TAFFY.

POULTRY.

Poultry Houses and Manure.—Allow me to offer a few remarks as well as to correct some statements made in GARDENING on this subject treated under the head of "On fowl keeping in small spaces." First, then let me assure the writer I most widely differ from his views as to the capacity for housing a small number of birds. I base my knowledge on experience, not mere theory. In speaking of this subject, he says (in allusion to Mr. Wright), "I should prefer a house at least twice that size for myself, *i.e.*, 10 ft. to 12 ft. square for accommodating five hens and one cock." Now, as we know that the primary cause of prolific egg production is warm housing, and as the heat derived from the bodies of the birds (generated within them, and supplied to the atmosphere around them) goes to produce such warmth, it very naturally follows that a greater supply of heat can be obtained in a small house, and consequently six birds housed in a space 5 ft. or 6 ft. square would be more profitable than if housed in double that space, because the heat generated would be greater, and if the sanitary precautions be fully and properly carried out this will prove the most profitable as well as economical means of housing. One word as to the manure. The writer in a recent number of GARDENING is of opinion that fowls' manure, unless exposed to the air for months and afterwards diluted, will kill whatever is treated with it. Now the utter fallacy of this to my idea is most obvious. Fowl manure is rich in fertilising salts, and consequently most valuable to enrich the soil. Submit such manure to the absorbent action of the atmosphere for a length of time, and you destroy that property which you should endeavour to protect (the fertilising salts); dilute it as soon as possible after obtaining it from your fowl houses, and you have a rich, safe, and valuable manure of incalculable value and service to the ground.—GEORGE R. BROWNE.

Poultry in Confined Spaces.—I have seen much written about poultry in confined spaces, but have never yet seen advice given as to the number of fowls that may be kept in certain sized plots of ground. I have a corrugated iron hen house made in the best manner, 10 ft. by 6 ft. by 7 ft. 6 in. high, with a run fenced in of 288 square ft., well protected from north and east, at the bottom of my garden, which is 150 ft. run. I keep a few good Silver Spangle Hamburghs, also a few good Minorcas, but should like to know about what number I could keep in above space not to be overcrowded. I believe many would be as pleased as myself to know how many fowls to keep in small spaces. Of course there are many who keep poultry in a much smaller space than mine and more closely confined with surrounding buildings, yet I have seen some very good fowls kept, and some the reverse.—E. W. H. H.

Can Fowls be Made to Pay?—A year ago we commenced poultry keeping with five pullets (Black Hamburghs) and a cock. They began to lay on October 19, and have continued to lay uninterruptedly till the end of September, after they had begun to moult, never having shown any disposition to sit. They have laid during the year 917 eggs. During the summer we added at different times to our stock two hens and a brood of chickens. Our poultry altogether have cost us for food during the year £2 9s., and we have sold or used 960 eggs. The value of these at a penny each (which is below the market price during a great part of the year) is £4, leaving a profit of £1 11s. Besides this we estimate our stock to be now worth at least 11s. more than they cost us, making a total profit on eggs and stock of £2 2s. Our fowls are exclusively confined to a grass run of 16 yards square. They have two meals a day—warm, soft food in the morning, and corn (often varied in kind) in the afternoon. They have in addition a few scraps from the kitchen, and occasionally refuse from the kitchen garden and mowings from the lawn. We think we have satisfactorily answered the question whether fowls can be made to pay even in a somewhat confined space.—ALPHA.

Cochin Fowls.—I have two Cochin cocks, one six months and the other four month old, and six hens. Are the cocks old enough to be of any use for breeding purposes?—META.

Black Hamburgh Fowls.—Will "T. F." tell us where we can obtain some of his wonderful Hamburgh fowls?—G. H. G. M. and BONUS.

Vermin in Fowls' House.—I beg to state my experience in ridding fowls' houses of vermin. I first washed the houses with a solution of Calvert's carbolic acid (1 oz. of acid to every two quarts of water), taking the houses to pieces as much as possible. As I found that the insects, which were chiefly of a red colour, mostly congregated in the cracks and crevices, I next limewashed the house, using the wash hot, and since then I have not seen or heard of any insects in the houses.—W. KIDDLE.

Preserving Eggs.—I have a great many eggs during the summer, but fail to get many during winter. I shall be glad if any reader will kindly tell me how to preserve eggs laid in summer so that they will be good for use during winter.—D. H.

Eggs for Setting and Perches for Fowls.—What length of time will eggs keep for setting? and what is the best way of keeping them? and what is the proper shape of perch for fowls to roost on, round or square? also what thickness if round and what size if square?—J. D.

Roup in Poultry.—I shall be obliged to any reader who will tell me what to do with my fowls. They commence as if they had got the roup, and continue that way for two or three weeks, and then swell about the throat and tongue and die. I have given them all kinds of pills, but they do no good. I give them fine sharps in the morning and Wheat and Barley mixed at noon and night, and they have a clean dry place to roost in.—LEARNER.

AQUARIA.

Fish Dying in Aquariums.—I have an aquarium which I purchased about six months ago containing one small gold, two very small, four larger fish, and several snails; since then it has stood in my shop (a chemist) about 7 ft. from the door. It has been supplied daily with fresh water brought from a leaden cistern by means of a leaden pipe, and from a little jet in the centre. When it came there was a greenish concretion nearly all over the inside of the glass which I had some difficulty in removing. I thoroughly cleaned the rockwork and the sand, and when the glass has become furred with a deposit from the water, I have sponged it off; have also drawn off the deposit from the bottom with an india-rubber pipe. I have since added three larger fish, taken from a pond, and two small gold fish recently brought from London. All the fish seemed well and lively, until one of the new gold fish began to show sign of a fungus growing over it. I removed it from the aquarium, painted it with a solution of bichloride of mercury, which removed all the fungus. The fish remained in a dormant state nearly a fortnight in a vessel by itself. I then put it back with the other fish; it seemed to recover rapidly, and was as lively as the others for nearly a fortnight. It has again gone wrong; so have several of the larger ones. I have taken out two dead, and have doubts about the others. I have fed them irregularly with a little biscuit, vermicelli, bread crumbs, and latterly with a few bits of raw meat cut small. At first I threw in a handful of Canadian weed, which gradually perished; recently a little Duckweed, and now a little Watercress. Can any reader kindly advise me how to preserve the fish I have left?—A NEW READER.

BEES.

Keeping Bees through the Winter.—"A Berkshire Bee-keeper" (see page 410) has in the main given very good advice, but if he is an old hand at the trade he will be thankful for a little friendly criticism. He recommends "A Weaver" to feed in October, which in the present case is wrong, as also agrees "One Taught by Experience." He also recommends a hole to be made with a gimlet in the top of the hive, but the gimlet would be much more likely to find its way into the combs than between them; a hole from 2 in. to 3 in. wide should be cut in the top of the hive, a piece of perforated zinc fastened to a hollow piece of wood sufficiently large for a pickle bottle to be inserted in it mouth downward, filled with syrup, and a piece of muslin tied over the top; the piece of zinc is very needful in many ways, which all who feed bees will prove. "One Taught by Experience" also errs in giving 1 pint of water to 1 lb. of sugar, as proper to feed them with. I need not tell old bee-keepers that such syrup would greatly injure, if not destroy, any hive of bees. A little salt should also be added to all feeding mixtures, a teaspoonful to about 4 lb. of sugar. In conclusion, I ask your correspondents to take my criticisms kindly, for I feel sure that they, equally with myself, are desirous of giving to our young bee-keeping friends sound and good advice.—APIARY.

Commencing Bee-keeping.—I should advise "Kensington" to commence bee-keeping at the beginning of next March in preference to buying a hive at the present time, for he will not then run the risk of losing them in the winter, and he must see that he procures one with a young queen. The price of a good 18-in. Pettigrew Straw Hive and bees in March is £2.

HOME PETS.

Birds for Outdoor Aviary.—I intend building an outdoor aviary for British birds, and shall be obliged to learn which, if any, should be excluded from the aviary. For instance, will blackbirds agree with linnets or wagtails?—H. A. M.

Goldfinches in Aviaries.—Having kept goldfinches for some years past, and all my pets having attained a green old age, I am in a position to inform "W. H. B." that his feeding is in fault. Hemp should be withheld except during moulting, and then it should be sparingly given. Linseed should form the staple food, with Maw seed for a change, or as a means of teaching the birds. The intelligence of the goldfinch is beyond that of almost any cage bird.—V. C.

—— I have had a goldfinch for many years subject to no ailments. The food given is canary and flax seeds, sometimes a small portion of Hemp seed, but the latter, although the birds are very fond of it, is by no means good for them used too freely, and may, in all probability, be the primary cause of premature death.—M. L. V.

Siskin.—*E. P.*—This is a name given to the Aberdevine, a bird closely allied to the goldfinch.

THE HOUSEHOLD.

Devonshire Clotted Cream.—The milk of cows milked either morning or afternoon is first strained and then put into pans to cool, and left for the head or cream to rise till next morning. The pans are then put on to a clear fire, or, better still, a hot plate on a close range, and there kept until sufficiently heated, which may be known if the cream is carefully pushed aside from time to time to see when the small air bubbles begin to rise. Directly bubbles are seen to be rising the pan must be at once removed and put aside to cool. Next morning, not before, it may be skimmed, and then the result will be clotted cream.—G. N. BARRETT, *Drakesleigh, Devon*.

Preserving Gourd.—Will any one kindly inform me the best way of preserving Gourds?—J. M.

Preserving Tomatoes Whole.—Let the Tomatoes become thoroughly matured, clean, and quite dry. Secure some wide-mouthed bottles, in which place the fruit whole, and fill up with best brown vinegar; when thus done, Tomatoes may be kept for any length of time. The small kinds look very pretty in the bottles done this way.—L. V., *Lewisham*.

—— Simply bottle and cover with cold vinegar; you may put what spice you please, or none; I prefer the simple vinegar.—C. J. PHILLIPS.

Pickling Tomatoes.—How are green Tomatoes pickled?—J. S.

GARDENING ILLUSTRATED.

VOL. II.—No. 90. *SATURDAY, NOVEMBER* 27, 1880. **PRICE ONE PENNY.** REGISTERED FOR TRANSMISSION ABROAD.

PALMS.

THE Palm family is one of the most important of cultivated plants. For room, conservatory, or stove decoration Palms are always valued, and some of the kinds will even succeed in the open air in warm southern countries. Latania borbonica, the subject of our illustration, is one of the most useful Palms, either in a large or small state. When planted in a tub or border of good soil this Palm attains large dimensions, and its fan-shaped fronds are both graceful and effective when associated with Tree Ferns and similar plants in large conservatories. If confined to a small pot it will thrive for several years without repotting, and when it gets too large a portion of its roots may be cut off without fear of serious injury to the plant. As regards general culture of Palms perhaps a few notes describing the way they are grown for market may be most useful. There is always a large demand for Palms in the market, and at all seasons of the year we find them liberally associated with flowering plants in the florists' shops. They are principally raised from imported seeds, sown in pots and pans, and placed in bottom-heat. When the young plants are up, they are pricked out in other pans or boxes, until they get again established, when they are potted off singly into 3-in. and 4-in. pots in good rich loam and peat. Plenty of heat and moisture are given them; as they progress, they are potted into 5-in. and 6-in. pots, and, before being sent to market, they are exposed to a cooler temperature, in order to harden them a little. Some are potted in large pots, but the pots generally used are 6-in. ones, and in these large and healthy plants are grown. Among the best and most appreciated market Palms is Latania borbonica, which is easily raised from seed, and grows rapidly, good saleable plants of it being obtained in three or four years from the time when the seeds are sown. Corypha australis is a common kind, also largely grown; it is hardy in character, and, being neat in appearance, is largely in demand for room decoration—a situation in which it lasts in a healthy state for a longer period than perhaps any other Palm. Latania altissima is likewise largely in demand, but as seeds of it cannot be obtained in very great quantities, it is seldom found in the market in large numbers. Another good Palm, equally difficult to procure, is Rhapis flabelliformis; it has a graceful habit, and when grown to a height of 2 ft. or 3 ft., is very handsome. Another excellent Palm is Cocos Weddelliana, a light and elegant kind which has not been very long in commerce, but seeds of it having been obtained in large quantities, it will, no doubt, be largely grown for market in years to come, as it appears to stand the rough usage to which such plants as are taken there are subjected, and also to thrive with proper attention for a long time in a sitting room. Areca crenata and A. Herbsti are both dwarf, compact growing Palms of great value for market purposes; their stems are furnished with sharp black spines, their stalks are of a reddish-bronze, and the under sides of the leaves are beautifully glaucous. Some of the Kentias (one of which we lately figured), too, are much thought of, but they are rather scarce.

THE AFRICAN FAN PALM (LATANIA BORBONICA).

Christmas Roses.—I have frequently wondered why these are not oftener made subjects of special culture in gardens than is the case considering their value as a winter flower and their easy management. I have a pretty extensive and well-selected stock of herbaceous plants, but amongst them nothing is thought more of than the Christmas Rose, which produces its pure white flowers in the depth of winter, and without forcing or attention. A good deal has been said about the white Abutilon Boule de Neige, as a handsome white flowering plant, but we have had both it and the Christmas Rose in flower at the same time, and we certainly give the preference to the latter. Though they resemble each other a good deal, the Abutilon is poor and frail compared with the Rose, the waxy and pure white flowers of which are far better adapted for decorative purposes than those of the Abutilon. Indeed, the flower-buds, just before they fully expand, are quite equal to those of the white Rose, as far as appearance goes, or a Camellia bud, and they are often used instead of them for button-holes, set up in a Fern frond or green leaf. I notice that they are extensively used for such purposes in towns about Christmas time; but the supply is by no means abundant seemingly. I would strongly recommend every possessor of a garden to plant Christmas Roses extensively, but they must be careful to get the pure white kind, for there are numbers of species and varieties. Helleborus niger is the best kind, and the Scotch variety of this, which is semi-double, is said to be much the finest; but I doubt if it surpasses the single one, which is so particularly attractive in the bud state. Helleborus atro-rubens, which has red flowers, is also described as a handsome kind, but I do not think it is worth growing; and the same applies to H. orientalis, which has flower of a dirty greenish hue, altogether inferior to those of the pure white kind. The latter is extremely hardy, and will grow in almost any soil and in any situation, but it deserves a good position in order to have it in flower early, for its blooming about Christmas depends a good deal upon the weather. In some winters, after a long continuance of soft, mild weather, the flowers are all up by the new year, but in some seasons they do not expand till the month of March. A good sunny position on a south border, however, hastens their progress; a handlight placed over each plant helps also to push them on, and at the same time keeps the flowers clean—an important matter, for they get so bespattered with mud when exposed to heavy showers as to be almost unfit for use, and attempting to clean them only makes matters worse. For this reason it is best to grow the plants in isolated patches, about 2 ft. across or less, for the sake of protecting them conveniently, and the lights or cloches should be put on them in November. The Christmas

Rose is propagated by means of seed and by division, but the latter plan is the best and most expeditious. Single crowns detached and planted in good soil will make large plants in a short time, It is an excellent plant for shrubberies, and should be planted freely in all warm and sheltered corners. In such situations it should be planted as extensively as Daffodils, Crocuses, Snowdrops, &c., which it just precedes in flowering, and, being an evergreen with handsome foliage, it is interesting at all seasons of the year. C.

HARDY FLOWERS FOR SMALL GARDENS.

Those who have a free, well-drained soil to deal with may include in their collection of hardy flowers a few of the many beautiful varieties of—

Clove Carnations and Border Picotees.—The most suitable soil for them is a sandy loam, which does not clog and get sour in the winter, but in which the plants do not easily suffer from drought in dry weather. Both Carnations and Picotees like to have the soil made firm about their roots, as in that case they do not suffer so much from alternations of temperature or excess of humidity, caused by heavy rains. I should caution your readers who may be inclined to attempt the culture of these much admired flowers that they must not expect to attain anything like satisfactory results with them unless their wants in the way of a proper rooting medium be attended to; but, providing that this is done, there is no reason why even the choice kinds should not thrive, even in gardens which are not so favourably circumstanced with respect to light and air as might be desired. It is a fact that some of our most successful growers of this fine family of hardy flowers have exceptional difficulties to contend with, being situated in the immediate neighbourhood of large towns and subjected to showers of blacks and even of metallic dust. It will thus be seen that no one who has sufficient space at command need shrink from undertaking the culture of the choice varieties of Carnation and Picotee, and it is to be noted that the greater the difficulties to be overcome the greater demand is there upon the skill, resources, and ingenuity of the grower, the effect of which is to sharpen his wits, and oftentimes give him a better insight into the details of culture and a more intimate acquaintance with the plant itself than would be the case where conditions of growth are naturally of a very favourable nature. There is also the legitimate pride arising from the knowledge that success has been achieved in the face of great natural obstacles, as well as the honour which must accrue to the successful Carnation grower to be taken into account, and I am sure that the small grower who may take this plant in hand, with a firm resolve to conquer the difficulties of culture, will find a rich reward in so doing, and will acknowledge that the result justifies time and labour expended. An impression exists that the Carnation is a tender subject, but the fact that some of the best growers reside in the north of England is a sufficient proof that there is no real foundation for this idea. The Carnation does not fear the cold when conditions generally are right, but it succumbs to extremes of wet and cold, alternate thawings and freezings when the roots are in sour or retentive soil, so sapping the vitality of the plants that they at the least fail to exhibit the luxuriance of growth indispensable to the production of good bloom, and oftentimes entirely disappear. Thus it will be seen that a good depth of free soil must be secured, and that where the natural staple is too retentive or tenacious, it must either be drained, or the beds must be thrown up somewhat above the ordinary level. Supposing that a collection of Carnations is desired, the proper way will be to throw up the soil into a rough ridge and let it remain thus until the beginning of March. Those purifying agents, frost and wind, will by that time have done good service, and will have sweetened every particle, and brought it into that free, friable, mellow state so indispensable to the continued welfare and activity of the slender, fibrous, hair-like roots of the Carnation and Picotee. The first step being well accomplished, the next will be to ensure porosity by adding some river sand, leaf-mould, road scrapings, or anything of a like nature in sufficient quantity to effect the desired end. This, of course, is only needful where the natural soil is clayey and retentive. Light, sandy, and alluvial soils are, on the contrary, benefited by the addition of a more holding and nourishing compost. The best time to plant is either early in October or in March; if planted anywhere during the last-named month, they will form fine specimens by the end of the summer. In the case of named kinds, the chances of success are increased by planting in a bed where each plant stands free from its neighbour, and where it is not liable to be crowded on by fast-growing subjects, such as is often the case when they are situated in a mixed border. There, too, every necessary and special attention can be given; and should a slight protection be deemed advisable it may be given, a few Hazel rods bent over, and a mat or two placed on them, being all that would be needful.

Violets.—These unassuming and fragrant flowers must be considered almost indispensable in every garden, and there are few places where a suitable situation could not be found for them. There are various ways of growing Violets, varying in their simplicity, for even where anything like high culture is attempted the cultural details are extremely easy to carry out. The easiest way is, of course, to well prepare a piece of soil in a sheltered and somewhat shady situation, and leave the plants to themselves for several years. In this manner and with just an occasional top-dressing of some light, free soil, a fair amount of flowers will be produced. If, however, high quality as well as abundance is desired, then an annual supply of young free plants with well developed and matured crowns must be provided. The young runner-like growths made early in the year must be taken off and dibbled into a free piece of soil in a shady situation. Keep them well watered until they have become furnished with roots, and then transplant them into a piece of soil which has been previously well worked and manured. Set them out in rows some 6 in. apart, keep them clean, water copiously in hot weather, and the result will be fine strong plants suitable for any purpose. This is the proper, and I might say the only, way to get good plants for pot culture, as plants taken up indiscriminately from a thick bed are seldom satisfactory. The Violet loves a certain amount of shade, and that protection which a stronger vegetation affords it when growing naturally, and consequently is found to thrive best in a garden where a cool and partially shaded situation can be accorded it. At the same time it will grow freely enough in the open where the soil is rich and deep, but should be kept well watered and sprinkled overhead at least twice a day in hot weather, in order to refresh and invigorate the foliage, and to keep at bay that destructive insect red spider, which is apt to infest the plants to an alarming extent where the atmospherical conditions are favourable to its increase.

Pyrethrums.—This is a family of hardy flowers the merits of which can scarcely be over-estimated. Thoroughly hardy, of free, quick growth, flourishing in almost any soil, but attaining a high degree of vigour in well-stirred ground, and bearing a large amount of fine showy flowers, embracing shades of carmine, red, white, and lilac in many varieties, of perfect form, charmingly quilled, and perfectly double, what more need I say to recommend this fine family of hardy perennials? Few hardy flowers can boast of such a combination of high qualities as the Pyrethrum, and I feel convinced that when better known it will take a foremost position in gardens generally. For cutting purposes the flowers are invaluable, as they last a long time in perfection, and wherever a few plants are grown there are sure to be at all times during the summer some good flowers to cut. The plant is so easy to grow that I need scarcely give any directions upon that point, but I may observe that deep culture, with plenty of manure and copious waterings in hot weather, is essential to the production of first-class blooms and continuous flowering.

Summer-flowering Chrysanthemums.—The uncertain nature of our climate, exposed as we are during the autumn months to storms and severe frosts, renders the culture of Chrysanthemums generally in the open air somewhat disappointing, for after all the care and labour which the grower may have expended upon his plants, he often experiences the mortification of having his best blooms cut off by frost, his hopes of a good display being thereby, of course, quite ruined. Where no glass accommodation exists for the protection of the plants when coming into bloom, my advice would be to rely upon the early flowering section for an autumn display, as by stopping once or twice during the early part of the summer, even the earliest flowering kinds may be thrown into bloom in early autumn at a time when the glory of tender plants is on the wane, but before the blooms are liable to be injured by frost. The culture is the same as that required for the autumn flowering varieties.

Byfleet. J. Cornhill.

Double Flowers.—Flowers, like almost everything else, are subject to fashion. To bring each and all to the highest degree of doubleness now seems to be the aim and desire of many. I know several gardens where in the beginning of the year, though there are many Snowdrops, they are all double, and instead of the gracefully hanging "drops of snow" there are these stiff, flat, spreading, green and white blooms. It cannot be said that they are ugly, for a really ugly flower is hard to imagine, but if the two could be compared side by side, I think the palm of beauty would at once be given to the single variety. This illustrates my meaning, and as it is not yet too late to plant Snowdrops, the single kinds deserve a trial by those who have not already done so. In Nature, very few wild flowers are found at all double. The simplicity, gracefulness, form, and naturalness seem entirely lost in many double flowers; they look so stiff and formal. Where is the grace in a double Violet? The Tulip, Wallflower, Anemone, and Fuchsia are instances; many others might be mentioned. It must be acknowledged that it is not the same in all cases, far be it from me to prefer a single to a double Rose; it is moderation that is wanted. Because some are better double is no reason why all should necessarily be so too; the happy medium, though perhaps hard to find, is always best. I can hardly expect everyone to entirely agree with me, but many, perhaps, have never thought about it one way or the other; to them I recommend single rather than double flowers. —Martagon.

Hyacinths in Beds or Borders.—These should now be planted. They do well in any light garden soil, but tufty loam, with a plentiful admixture of sand and well decayed manure, is perhaps the best of soils for them; and if the natural soil be so stiff and adhesive as to require modifying, these are the materials that should be used. The bulbs should be planted with their crowns 4 in. below the surface, covering the ground after planting with 2 in. of loose pulverised manure as a protection against frost. Hyacinths planted out-of-doors seldom require any water; and if the soil or situation be at all damp, they will do better if the soils in the beds or borders be raised 1 in. or 2 in. above the surrounding level.—W. P.

Dividing Primroses.—Choice kinds, both double and single, should now be lifted, or if in pots they should be shaken out, the crowns divided and repotted in small pots. These should then be placed either in a cool house or in a frame for the winter. Weak crowns may remain in these pots all through the ensuing summer, but larger ones will doubtless bear division again in the spring after they have done blooming. Frequent propagation is beneficial, as by that means the bane of Primroses, a long woody base at the root, is not allowed to develop. The more roots issuing from the immediate base of the foliage the better.—D.

The Polyanthus.—There is no hardy garden plant to which the amateur can more pleasantly devote his spare hours than the Polyanthus. The culture is simple and inexpensive, the plant hardy, and easily raised from seed. It is only when it is desired to purchase plants of the comparatively rare florists' kinds that cost enters largely into the matter. I would not advise any one to embark in the growth of these choice kinds unless some experience has been previously obtained. As a rule the plants propagate slowly and are of a somewhat miffy

habit, are subject to the attacks of green fly, root rot, thrip, and other evils, and will sometimes, even when looking quite healthy, suddenly collapse. The most satisfactory kinds are those known as Fancies, or perhaps better classed as border varieties. These are all robust, give an infinite variety of colours and markings in the flowers, and are most easily raised from seed. A large batch of plants raised from seed sown as soon as ripe in 1879 were kept in a frame through the winter, and now some of them are in bloom. If the season be mild and open many will carry flowers up to Christmas. This autumn bloom is the product of strong, early-matured crowns, and come from good, free culture, and a free-growing season. We find if seed be sown every year, saved from the best flowers, that the average quality of the strain is greatly improved. If seed be sown in the spring, the majority of the plants raised will of course bloom the next year; but if sown as soon as ripe, and the plants kept under glass through the winter, many will bloom the first year, and in the second make fine plants. The best of these selected may be potted up in the autumn to make very good show plants in the spring, or if not wanted for that purpose will be very effective either in the greenhouse or in the sitting-room window. —A. D.

Anemones in Succession.—Among the most useful plants for spring flower gardening are the double scarlet Anemones, and it is a colour difficult to obtain. To have a good show of these, it is recommended to plant half the tubers in October and half in December, the later ones being planted between the early ones; this gives a long succession of bloom.—M.

VEGETABLES.

Forcing Seakale.—Many who could not obtain much stable manure have been in the habit of waiting till Seakale came in naturally, deterred by the great expense incurred by their wealthier neighbours for scores of Seakale pots and heaps of manure. But these are all unnecessary. The true way is to carefully take up well-grown roots, bring them indoors, and force them or make some little arrangement near the frames or manure heaps for that purpose. A trench in a Mushroom house will do admirably for forcing Seakale; so will a box made over a hot-water pipe; so will a pit or dark nook under the bench of a warm house, or, in fact, any place in which a little warmth occurs. For instance, nothing is more common than to find a flue or hot-water apparatus heating some surface other than the interior of the house, and by placing the Seakale in a wooden box against this it may be forced most easily. There can be no difficulty in providing a suitable place for it if there are houses, or frames, or pits in the place. In places where there are no hothouses, the best way is to devote a box or little pit in some shed, cellar, or outhouse to Seakale forcing, and in it to place 6 in. or 8 in. of horse droppings, which would start the Seakale into growth. Wherever there is a proper Mushroom house, one of the shelves may be advantageously devoted to the forcing of Rhubarb, Seakale, Chicory, &c. This is a most convenient way, all that is necessary, in addition to packing the roots on the shelf, being to hang a piece of canvas or a mat before the bench to exclude the light. These remarks will suffice to point out how the forcing of Seakale may be most conveniently done. Any place affording a genial heat, and either dark or light will do. Dig up the roots when forcing is about to commence, and put a portion in heat, following at intervals and in such quantities as circumstances may direct. Injure the roots as little as possible in taking up, and put by the long thong-like points in a bit of soil in a shed somewhere to be put in as cuttings, or rather as plants, to succeed those taken up for forcing. Of course, to be blanched the plants must be in the dark. Market gardeners dig out a trench in the open air 3 ft. deep, and fill it with manure, with a few inches of soil on the top, and then plant the Seakale roots close together. The soil thrown out of the trench makes a wall all round on which can be laid thin boards to be covered with long manure, or mats, or common dry Fern, as the case may be. —T. W. C.

Garden Turnips.—Among these, Cattell's Silver Ball is a handsome variety and good in quality; Early White Stone is soon fit for use, but it also soon runs to seed; the American Red Stone is a useful hardy sort; Chirk Castle, a black-skinned kind, is very hardy, and keeps firm and good for a long time; but Veitch's Red Globe has proved the best of all I have tried. These were all sown the second week in April on a south border, and were well supplied, when necessary, with water. They grew well, but later in the season the white kinds rotted very much, while the red ones kept sound. Afterwards, the white kinds were sown on a north border with the same result, nearly the whole of the crop rotting away. I have now another crop, consisting of red ones in use, which are all that in any way could be desired. —W. D.

Late Scarlet Runners and French Beans.—I only sow one crop of these, and that about the first week in May. The plants from this sowing are well supplied with water, and the Beans are gathered as they are wanted; but I make a point of clearing off all Beans at least once a week, and if any of them are too old for use, they are discarded, as, if only a few pods are left to grow on the plant for seed, they very much shorten the season of gathering—a circumstance too often overlooked in many gardens, and hence the cause of their being so soon over. I wholly attribute my success, as to later gatherings, to the regular clearings which I make. When there are signs of frost, I cover both Peas and Beans in bearing with hexagon netting, a most useful material for such purposes.—W. D., *Maidstone*.

Potatoes.—GARDENING ILLUSTRATED has supplied us lately with many interesting articles on Potato culture for home use, exhibition, and for market. Allow me to suggest still another method, which has been tried with great success by Mr. Harwood in his nursery, within four miles of Torquay, and this on rather a stiff, retentive soil. In August the haulm, then quite green, is pulled not quite out of the ground, just sufficiently to break the roots. This is found to hasten the ripening process, check disease, and last, but not least, prevent the second growth. By this method Mr. Harwood assures me that his crops of Potatoes are superior and sound.—T. FRIPP.

Autumn Planted Potatoes.—I quite concur with the remarks of Mr. Thomas Cowburn as to the waste of space in planting, as named by "Gardener," and again I fail to see that any possible advantage is gained in autumn planting so far as Potatoes are concerned. Unless the soil is very light and dry, and also well drained, it is sure to become consolidated, and in many cases wet and cold during winter, and as both theory and practice teaches that this is bad for the Potato, there is no gain in this respect. Again, weeds find soil which is not disturbed well suited to their growth, and they start before the Potatoes. My idea of land for Potatoes is that which has been ridged for the winter, and which has been forked over in spring, and made as dry as possible, and if a light dressing of dissolved bones is applied to the ground after planting, so as to be drawn up to the roots at the first hilling, so much the better. This year I had 17 bushels of Magnum Bonum Potatoes from half a bushel of seed planted. Perhaps those advocates of autumn planting who have such great successes would kindly say what their soil is like, what after treatment is given, and also state what failures they have. This past season having been such a good one for Potatoes, it is hardly fair to take it as a criterion of any system.—W. J. MAY, *Walton-on-Thames*.

My Experience of Potatoes in the South.—"Burns," in GARDENING, Nov. 6, page 430, gives his experience of Potato growing this year in the North. I will give my experience as an amateur in the South, viz., Brighton. On March 28 I planted 1 peck (14 lb.) of American Rose, of the same strain of seed I had used the past four years. The peck gave me 5½ bushels of magnificent tubers, some weighing 16 oz. and over, and in boiling, instead of being waxy, they were like balls of flour. This I can only account for through the comparative dry season. Such a crop as this, and not one diseased, is of rare occurrence, I think. The first week in May I planted 4 gallons (28 lb.) of Magnum Bonum, purchased of a local seedsman. The haulm grew nearly 6 ft. high, and was green when I lifted the Potatoes in the middle of October. The 28 lb. gave me 15½ bushels of fine tubers; three of one root turned the scale at 3¼ lb. I never dug such an even, clean crop; but they are not, as advertised, "Disease resisting;" many of mine have gone bad since being up, although well dried before storing. Snowflake has also turned out wonderfully well. I may say that my garden has had but little manure since 1877, as we have expected the builders across it since that time, and have kept expenses down, but in 1878 I gave it a good coating of lime, and to this I owe, I believe, my good crop, and the ground now is what I may call in "good heart."—W. B.

CARNIVOROUS INSECTS ON PLANTS.

IN GARDENING, September 25, you were kind enough to insert a communication of mine, under the initials "H. H.," referring to the above. On October 9, a correspondent, "V.," was good enough to throw some further light on the matter. Since then Mr. Butler, of the Zoological Department, British Museum, has favoured me with some correspondence on the matter, and as it is kindly coupled with a permit to make what use I please of it, I place it at your disposal, feeling sure that it will not only prove interesting to "V.," but to other of your readers. Mr. Butler says: "The fly which you forwarded to us is Cheilosia quadrata, one of the common sun-flies of our gardens. The larvæ of this and allied species are common upon aphis-infected flowers, and, being very voracious, are as useful in devouring aphides as are the larvæ of the common ladybird (Coccinella bipunctata). I have frequently reared both. It is my belief that the introduction of ladybirds into a greenhouse would be more advantageous thanthat of sun-flies, since the perfect insects are equally aphidiphagous with the larvæ, and would be more likely to breed in confinement than the flies. From what I have seen of the latter in a house, they appear to be contented to sit quietly all day upon the glass or to use their legs only until death terminates their imprisonment."

It has been shown by frequent experiments that almost all (if not all) caterpillars feeding upon the Gooseberry and Currant are so acrid, that neither birds nor lizards, frogs nor toads will eat them. Your correspondent "V." states that he gave such caterpillars to his ducks, and after the first trial they refused them; this is exactly in accordance with experiments which were made by Mr. Jenner Weir and myself some years since (our papers appeared in the Trans. Entom. Soc., London) with lizards, frogs, and spiders, and it will be useless for "V." to try to persuade a duck which has once tasted a nauseous caterpillar to touch it a second time, unless indeed its memory is shorter than that of the animals upon which we experimented. The term "noxious" is perhaps too strong a word to use; "unpalatable" would be more to the point. Wallace's natural selection will refer you to my paper on the rejection of certain larvæ and insects by lizards, frogs, and spiders. Mr. Butler's correspondence further bears out my proposition that wholesale syringing has its disadvantages. H. H.

American Cranberry.—We omitted to state in the article on this Cranberry (p. 414 of GARDENING) that plants of it can be obtained from Messrs. Dick Radclyffe & Co., seedsmen, 128, High Holborn, who are introducing it into England.

Worms in Pots.—A very good way to get rid of worms in pots is to put about ½ lb. of mustard in a large can of water, stir it well, and water the plants with the mixture; this will cause the worms to come to the surface, when you can easily pick them off. I have found this plan very successful with fruit trees in pots in the orchard house. It is practised in Mr. Rivers' nursery at Sawbridgeworth, where it is found very efficacious in all cases, but I can only speak from my own experience in the case of fruit trees.—GEORGE A. PASSINGHAM, *Milton, Cams.*

Destroying Wasps' Nests.—I saw in a late issue of GARDENING a paragraph recom-

mending a gunpowder squib for destroying wasps' nests. I have tried it and blasting fuse, but find nothing so effectual as the cyanide of potassium. Dissolve 2 oz. in a wine bottle of water; soak a soft rag with the liquid, and lay it at the hole where the wasps go into their nests, and every one that passes over it, either going in or coming out, dies. In this way I have destroyed 105 wasps' nests in my neighbourhood this summer, and I have never known it to fail. After the rag has been laid a short time it may be necessary to clear away the dead wasps and damp it a little more with the cyanide.—N.

House and Window Gardening.

Aralia Sieboldi.—This is one of the best window plants that can be grown. It is hardy in sheltered situations, but thrives best when placed in a window or greenhouse during the winter. It is easily propagated from sections of the stem or cuttings of young growths, and if planted in good soil it quickly grows into handsome plants. It requires plenty of water at the root, for if allowed to get dry it loses its leaves. Give all the air possible, and sponge the leaves once a week with clean water, so as to rid them of dust. Turfy loam and cow manure make the best compost for it, but it will grow in any ordinary garden mould. A little soot water given occasionally when the pot is full of roots will impart to the leaves a black and glossy appearance. There is a variegated variety of this plant, but by many it is not considered of so much importance as the green-leaved kind.

Aralia Sieboldi; one of the best of Window Plants for Winter.

Aspidistra lurida variegata.—If I were limited to the choice of one fine-leaved plant for room culture I should unhesitatingly choose the subject of the present note. I do not know of any one plant which will last so long in unimpaired beauty with a minimum of care as this. Give it a fair supply of moisture at the root, and a good washing of the foliage now and then, and it will remain in good condition for years. That which renders it of great and especial value to window gardeners is the fact of its throwing up its broad handsome leaves from a root stock, so that, unlike the Grevillea, Acacia, and many favourite fine foliaged plants, it does not ever much increase in height, and consequently does not get too big for the space. The type has green leaves, dark and glossy as the Ivy itself, and possesses the same valuable characteristics, but is, of course, by no means so attractive as the variegated variety, the lively variegation of which renders it at all times bright and attractive.—C.

The Fennel-leaved Fern (Asplenium fœniculaceum).—This is really one of the most elegant species of the genus Asplenium, and is worthy of a place in any collection of Ferns. The fronds are, as the specific name designates, finely divided, and are moreover of a lively and refreshing shade of green. It succeeds very well in a window in either a cool or warm apartment, for, like many species of this useful genus of the Fern family, it is of an accommodating nature, and will thrive in almost any situation, providing its needs, in the way of watering and cleansing the foliage, are attended to. Like all other members of the Fern tribe, it is impatient of stagnant moisture at the roots. Care must therefore be taken to give ample drainage, and not to over-pot. Ferns like plenty of moisture at the roots, but this cannot well be given until these latter touch the sides of the pot. Therefore do not shift until absolutely needful, and then place in the next sized pot.—J. C., *Byfleet.*

Asters as Vase Plants.—Four weeks since I pulled up a root of dwarf Asters bearing five or six blossoms and planted it in a vase of water. Some of the flowers are fresh now, although the foliage withered a week ago.

Improving Lawns.—The chief cause of the wearing out of the Grass on lawns is the continual removal of the produce from it by almost constant mowing and sweeping, and bringing nothing back to supply the waste. No crop could long stand the wear of this system without showing signs of deterioration and exhaustion. Of course, where the land has been well prepared and deepened before being laid down in Grass, the period of exhaustion will be longer in occurring, but come it none the less surely will, unless some assistance be given in the way of top-dressings. There are two principal modes of improving worn-out lawns—one, by taking up the turf, manuring and improving the soil underneath, and relaying it as soon as the work can be properly done; the other, by giving rich top-dressings. The former usually answers best, but much improvment may be effected by top-dressings in February over the surface of the Grass, to be followed by sowing a few fine Grass seeds, and about 2 lb. per acre of white Clover. If the Grass be not much worn, the Clover seeds alone will be sufficient. White Clover is an excellent plant for dry soils, as it roots deeper than most Grasses, and consequently maintains its colour and stands drought better, but it will not grow under trees. We are accustomed to look upon earth worms as a nuisance, but were it not for the annual top-dressing which they gratuitously bestow, the condition of many lawns would be worse than it is. The best way of improving lawns that are worn and weedy is take the turf up, improve the soil, and relay If new turf can be easily obtained free fr weeds, a preference should be given to it; if, in cutting up the old turf, it is cut very th most of the weeds, such as Plantains, Daisi &c., being strong rooted, will be cut throu and perish, as the main part of their roots w be left in the ground. When such work done before Christmas, the turf, even when c thin, has plenty of time to get well established fore drying weather sets in in summer. As the se son advances, and the Grass, from having be closely shorn, loses its first vigour, it is a go plan to remove the collecting-box from the mo ing machine, and allow the Grass to be distri buted over the surface for a few weeks. It astonishing how soon the cut Grass withers an disappears, and if continued for a month or s it forms such a mulch over the roots of th Grasses as effectually screens them from th blazing sun when drought sets in. There ar places in which this plan might be objectionable but the eyesore is really very little. If th Daisies be numerous, the scattering of the Gras mowings should be deferred till they have ex hausted their blooming capacity, or some of th flowers may produce ripe seeds, which will grow and still further increase their numbers. A sprinkling of soot and salt mixed with wood ashes will be beneficial as a top-dressin in February or March for all lawns on whic the Grass is weakly. Five or six cwt. of salt may be used to an acre with safety; the soot and ashes may be used liberally and will be most beneficial in strengthening and improving the colour of the Grass. Lawns that are kept in good order are seldom infested with Moss to an injurious extent. Of course, where Moss does become established, it ultimately masters the finer Grasses; but where the mowing machine and roller are regularly used, it seldom gets unsightly.—E. H.

Trenching for New Plantations.—Wherever planting operations are intended to be carried out, whether it be in orchard or shrubbery, it is important, if a profitable result is desired, that the ground should have been previously well prepared. Whatever is worth doing at all is worth doing well; and although trenching involves expense, still I am convinced such operations will, in the long run, pay. The most thriving plantations with which I am acquainted were trenched 20 in. deep, and the bottom of the trenches well broken up with the pick, the subsoil (poor sand) was brought up to the top, and the top spit placed in the bottom. It should always be borne in mind that in a plantation of young trees there is very little chance of improving the lower stratum of soil after they are once planted, but in the preparation of the ground, if the bottom spit is brought to the surface, the exposure to the air, together with the falling leaves and other decomposing vegetable matter, will materially improve it. I grant the young trees may not start so rapidly during the first year or two, in consequence of the best soil being placed at the bottom of the trench, but as soon as the roots begin to strike downwards, the effect of the deepening of the soil will soon be apparent, and in ten years it will be still more remarkable.—H. E.

Keeping Seeds.—To retain the vitality of seeds as long as possible, they must be preserved from the influences of heat and moisture. It is desirable that they should never be subjected to a higher or lower temperature than 40°, but it is absolutely essential that they should be kept dry. The moment a seed comes in contact with moisture it begins to grow if the temperature is high enough, and if not then placed in circumstances congenial to its development, as in the soil, it will of course perish. Without moisture in sufficient quantity to excite growth, however, seeds may be subjected to a much higher temperature than 40° without any immediate bad effects, though a high and dry temperature impairs their vitality; hence it is that seeds that have been kept for several years do not germinate so vigorously, though they are generally more fruitful. For this reason, old Melon seeds are preferred to new, as they do not run so much to vine; and when new seeds only of a variety are to be had, some gardeners carry them in their pocket, or keep them in a warm room for a while to effect the same end.

On the other hand, it is equally necessary to keep seeds dry under a low temperature—42° being the growing point, or lowest temperature at which seeds will germinate as a rule; exposure to damp below this figure promotes decay, especially in the more tender seeds. Thus, Kidney Beans, for instance, may be subjected for a time to a temperature of 35° without much injury if they are kept dry, but it is a well-known fact that they will perish almost rather than germinate in soil below a temperature of 45°; hence early crops are generally uncertain. Under these circumstances, and seeing that collections of seeds, even for a large garden, are not very bulky, the best plan is to keep them in a portable cupboard, which can be moved when required and may be found needful in very warm or very cold weather.

GLASSHOUSES AND FRAMES.

CARNATIONS AND PICOTEES FOR WINTER.

The perpetual flowering section of Carnations and Picotees rank amongst the most valuable of winter-flowering plants. Who would not be proud of a bouquet of them about Christmas? Indeed, I have proved most conclusively that from a collection of only three or four dozen plants one can have flowers all the year round. Until recently we had no yellow ground Picotees worth naming amongst the perpetual flowering kinds, and, indeed, until the event of Ascot Yellow and Prince of Orange, yellow ground Picotees were not worth growing; hence they remained in obscurity up to the year 1878. Prince of Orange is far in advance even of Ascot Yellow as regards freedom of growth, and is the only one that I have been able to retain with ordinary care. Its clear yellow, crimson-edged flowers, full and of the largest size, are singularly attractive. In the autumn of 1877, when visiting the Slough Nurseries, Mr. Turner pointed out a batch of seedlings from Prince of Orange which were so promising, that great things were expected of them, and these expectations have been fully realised. Most of the seedlings from this source flowered in 1878, and amongst them are many distinct and handsome varieties, of which the following are the best: Ne Plus Ultra, Sultana, Lady Rosebery, Princess Marguerite, Dove, Ophir, Lord Beaconsfield, Eleanor and Henry Tait.

To have blooms of the best quality in winter, it is necessary to start propagating very early; the small side growths should be slipped off in January; and this applies especially to varieties of the Prince of Orange type, which do not come so early into bloom as the others. Indeed, those raised from pipings about the end of January will not be likely to be in flower until early in the following year. The pots containing the pipings should be plunged in just a little bottom-heat in a forcing pit; they are apt to damp off if covered closely with a hand-light or bell-glass, and are not likely to root freely if quite exposed. I usually place a square of glass over them, which arrests evaporation sufficiently to prevent any of them from shrivelling. Future results will depend on the care and skill devoted to their culture. They must be carefully potted off into small pots, keeping them quite close to the glass when they are in a warm house. The best time for repotting them is when the pots are fairly well filled with roots. The soil should be good, friable, turfy loam, and almost any kind of loam will answer, light, medium or heavy, all of which I have tried with success. Add to four parts of the loam one of leaf-mould and one of rotten stable manure, with a little sand. During summer I place the plants out-of-doors in a sunny position, taking care to fasten the main stems, as the plants advance in growth, to suitable supports. About the end of September the pots should be moved into a greenhouse for the winter. It is not unlikely that the leaves may have become affected with green fly, and if so the plants will not succeed until it is destroyed by fumigating with Tobacco smoke.

The old yellow Picotees are not adapted for borders; rough, wet, and changeable weather in winter would kill most of them. King of the Yellows is one of the best for borders; it is Clove-scented, and is the only pure yellow that has been proved to succeed out-of-doors under ordinary border treatment. Of other colours we have Bride, white; Mrs. Matthews, white; very sweet; Elysian Beauty, rose; Princess Alice, white; Hindoo, crimson; Cremorne, purple; Sentinel, scarlet; Prince Arthur, rich dark purple; Elegant, Coroner, and Fire-eater; all of which are hardy and do not require much care.

J. D.

The Chinese Primula.—This is still one of our best winter and spring flowering plants. We can have it in flower by November by making a sowing about February or March, and then by sowing again in May and July we can maintain a constant supply of flowering plants for the greenhouse and conservatory up to May. I generally grow them in a compost of two parts of good black loam to one of leaf-mould with some dried cow dung well broken up and silver sand added, giving good drainage. Previous to sowing the seed I prepare the pans by watering them and letting them drain for an hour or so before sowing, which renders slight waterings sufficient, as the seeds which are slightly covered are often laid bare by heavy watering. The Primula (single) can be propagated by cuttings, but it is best to grow it from seed. I generally select a few of the best of the old plants when through blooming in spring, cutting out all the flower-spikes and fresh potting them, placing them in a cold frame during the summer, and by potting them on they will make handsome plants by November.—Kirkton.

Japanese Maize (Zea japonica).—This has of late years been largely used as a flower garden plant, and when really well grown in groups it is very effective. As a pot plant for the greenhouse or window it is also worth culture. The seed should be sown in March in a warm frame if possible. When the plants are up pot them on in light, rich soil, and plant out in the open air in June. Seed sown, say in June, would furnish good plants in autumn for the window or greenhouse.

Effects of Lime Water on Plants.—In answer to "Tried One" respecting the effects of lime water on plants, I have used it for many years with the best effects; first, plants only drink when they are dry; if a plant is dry, water it first with pure water, and let it stand for an hour or two, and then you may soak it with lime water as much as you like, and it will pass through the soil and kill all the worms, and not harm the tenderest plant. I gave my Chrysanthemums a good soaking this autumn when I housed them.—Help One Another.

TOWN GARDENING.

DETAILED CULTURE OF PLANTS.

We will now take the most suitable of the plants given in our list last week in alphabetical order, and give the most successful mode of culture for each.

Amarantus melancholicus ruber.—This plant is very useful for bedding; the deep blood-red of the leaves is very effective, especially when the sun shines through them; moreover, it grows very freely. It is about 1 ft. in height. Seed should be sown in a light rich soil, consisting chiefly of leaf-mould and sand, as early as possible, say March, and placed in a steady heat of about 70°. Prick off into boxes when large enough, and keep on growing in gentle heat. The plants are better potted off separately as soon as large enough, lifting them from the boxes with good balls of earth, as they cannot bear to have their roots broken. Harden off gently towards the end of May, and plant out early in June. It may also be sown in a cold frame in April, or even out-of-doors at the end of that month. Plant about 1 ft. apart.

Japanese Maize (Zea japonica)

Asters.—Unlike Stocks, these should not be sown too early; the flowers are not wanted till quite autumn, and the first week in April is quite early enough for them; successional sowings may be made up to the middle of May. The great points in the successful growth of Asters are to give them a very rich soil at all stages, and never to allow the plants to receive a check in any way. They should be treated the same as Stocks, *i.e.*, sown either in a very gentle heat or in a cold frame, greenhouse, or window, in well-drained pans or boxes of light soil; leaf-mould and sand is best with little or no loam. Keep them close to the glass, so that they do not get at all drawn. Prick them out when large enough and getting crowded into protected nursery beds or cold frames, and when good, sturdy plants of 3 in. high or so, plant out carefully with good balls of earth into beds of good, rich, and deeply-dug soil. From 8 in. to 10 in. apart is a good distance for the dwarf kinds, and 1 ft. or more for the tall growers. From

first to last they cannot have too rich a soil, and a bed with a good depth of decayed turf sods and old manure, and a layer of rather fine, light soil, such as equal parts of loam, leaf-mould, rotten manure, and some sand on the top, will grow splendid flowers. They must have plenty of water in dry, hot weather, and, unless the soil is very deep and rich, a good soaking of liquid manure occasionally as they throw up for bloom. Asters need an open and sunny situation. In pots they are very useful in autumn, but it is a difficult matter to grow them so. The only way is to plunge the pots in cold frames or pits and give abundance of air. But it is far easier and quite as good a plan to grow the plants in open borders in the usual manner till the blooms are just opening, and then take up with good balls, having given them a good soaking some hours previously, and put as many in a pot as it will hold. In this way they take no harm.

There are a number of very distinct kinds of Asters, of which the quilled or German, and the French or flat-petalled, are the two great classes, the latter being in our opinion by far the most desirable. The French are divided into the Chrysanthemum or reflexed, and the Pæony or incurved kinds. Besides these are the Victoria, the Emperor, and other kinds having reflexed petals. Nearly every class can now be purchased in tall or dwarf kinds, the former growing to a height of 18 in. or 2 ft., and the latter to 8 in. or 1 ft. only. The tall kinds are very fine for single specimens, or for groups in mixed borders, but for bedding purposes the dwarfs are much preferable. The most suitable for this purpose is the dwarf Chrysanthemum, which makes a most beautiful bed either with the colours arranged separately in bands or mixed. The Victoria produces the most perfectly finished blooms, but what is known as the Pæony Perfection Aster gives us the most handsome flowers, to our taste at least, of any, the shape being very similar to that of the flowers of the incurved Chrysanthemum.

Auriculas.—This is a splendid town flower, as the beautiful plants grown by the Spitalfields weavers can testify. The ordinary garden or alpine Auriculas are the best for out-door culture, as the show kinds are more delicate, and it is usual to grow them in pots. The alpines may also be grown in pots with good results. Hardy Auriculas will stand a town winter better than any plant with which we are acquainted, and will start into growth and bloom early in spring with wonderful vigour. They should have a situation sheltered from the rays of the summer sun at mid-day; at the foot of a north-east or north-west wall is a good place, but the position must not be damp in winter, or they are apt to rot off. The best soil for them is a rich loam, but they will grow well in almost any good garden soil. After they have bloomed, and it is well to give them some protection from east or biting winds when in bloom, take up the plants, remove the young suckers, and plant them separately; either plant the old root again right up to the leaves, or throw it away. But if you can afford the plants the shelter of a frame, far better results can be obtained by growing choice sorts in pots. Either the alpine or show kinds, or both, may be thus grown, and neither of them require any artificial heat at any season. The show kinds are more delicately beautiful, but they are not so hardy or free flowering as the alpines. Both require as nearly as possible similar treatment. The main thing is to give them plenty of air and light, and never let them flag for want of water; yet they must never be too wet, especially in winter and about the stems, as they are rather apt to damp off there. The best soil is a good rich fibrous loam, with a small proportion of very old manure or leaf-mould, and a little sand if needed, but if the loam is not very stiff it is better omitted. Four and a half or 5-in. pots are quite large enough for single plants; pot them pretty deep—up to the healthy leaves, all dead or decayed portions being removed, and rather firmly, but not too much so. The best time for potting is when the offsets that form after flowering are well developed and rooted, so that these may be removed and potted separately at the same time. This will be about July, the plants having been well exposed in a shady place from the time flowering is past. Pot the suckers, if at all small, in 3-in. pots, and shift them on into 4½-in. or 5-in. when ready. After potting, place the plants in a frame under a north wall, so as to be in the shade, and keep them close for a few days, till the potting is recovered, then gradually accustom to plenty of air, and in September remove from the shady place to their winter quarters, which should be a Box frame facing full south. This should have a raised stage or shelves arranged within it, so as to keep the plants off the ground and near the glass; if there are doors or movable boards at the bottom that can be removed to admit air from beneath, all the better. The plants should be stood in this and the lights kept tilted, so as to admit plenty of air, and removed for an hour or two on fine mornings and evenings altogether. Be careful how you water them, and in doing so be sure not to let any get on the leaves; remove all decayed leaves as soon as shown. Only admit air from the bottom when the weather is fine and warm. Shut up close on frosty nights, and in severe weather mat up well, and keep all close as long as the frost lasts; and for delicate show kinds it is well to bank up turf sods all round the frame, to keep out severe frost. In February take off a little of the top soil, pricking it up with a pointed stick, but not disturbing the roots, and replace with some fresh compost, made pretty rich. This is called "top-dressing," and is a great assistance to the plants; it should be done when the soil and pots are dry. Give weak manure water twice a week when the flower-buds appear, and remove any green fly that may appear with a camel's-hair brush. Shade from hot sun, and remove to a shady place by the end of April, still keeping in the frame. After flowering, which takes place in April or May, remove the plants from the frame, and stand or plunge out-of-doors under a north wall, or east will do nearly as well, and let them remain here till potting time comes round again; it would do just as well to withdraw the light and leave them in the frame. Keep them rather dry in winter, especially in severe weather. In potting off the offsets, if they are small, put three or four round the sides of a 4-in. or 5-in. pot, and if they have no roots at all use sandy soil, put three or four in a pot, and keep under a hand-glass or in a cold frame close till rooted. Seedlings make good plants. The seed should be sown in pans of loam, leaf-mould, and sand early in spring, and the pans placed in a cool frame or greenhouse, and kept moist and shaded. When well up and large enough, prick off separately into boxes or pots, four in a 5-in. pot. Pot off separately about September. The plants will nearly all flower in the spring following. There are a great number of fine named kinds which are preferable to seedlings where expense is not an object. A few of the finest are—

Alpines.

Brilliant	Landseer
Colonel Scott	Mrs. Dodwell
Delight	Mrs. Meiklejohn
Evening Star	Napoleon III.
James Fowle	Queen Victoria
King of Crimsons	Sparkler
King of the Belgians	Unique

Show Varieties.

Admiral Napier	John Waterson
Alexander Meiklejohn	Lord Clyde
Anne Smith	Lord of Lorne
Beauty	Lady Sophia
Catherina	Lancashire Hero
Colonel Champneys	Maria
C. J. Perry	Metropolitan
Complete	Rev. G. Jeans
George Lightbody	Smiling Beauty

Balsams succeed well in a smoky atmosphere. They may be grown either in the open air or in pots, but as we are now treating of out-door gardening we only give the mode of culture in the open air here. The seed may be sown either in pots or boxes under glass, with or without artificial heat, or in a sunny window after April 1, or in May in the open border. For seed-sowing under glass use leaf-mould and sand, with a little loam mixed with it. A gentle heat will cause the seed to germinate more quickly. When the plants have formed the first pair of rough leaves, prick off into deepish boxes, frames, or protected nursery beds, and when strong transplant with good balls to where they are to flower. If sown late in the season out-of-doors, make the soil deep and rich, and merely thin out and transplant as needed. The soil for Balsams can scarcely be too deep, light, or rich, and they should have abundance of water at the root, and frequent syringings overhead. This is of great importance. A good soaking of liquid manure once a week when the plants are coming into bloom is beneficial.

Calceolarias (Shrubby).—These are very showy and useful. Where a number are required the best way is to take off nice young side shoots with a slight "heel," and trim them neatly, removing the leaves half way up the cutting. The best time for striking them is October, not too late in the month if the weather is very cold. Set a small frame on a piece of ground facing south and in a light and airy position; put a few inches of broken bricks, or "ballast," which is clay burnt in the rough, and is frequently used as a substitute for gravel—it makes capital drainage for pots or boxes; put a few inches of this or other draining material in the bottom of the frame, then a layer of old hops, decayed, and on that about 4 in. of fine sandy loam, with only a little leaf-mould in it. This should bring the surface of the soil up to 8 in. or 1 ft. from the glass. Make holes in rows with a dibber about 2 in. apart, put a little sand in each, and plant your cuttings, pressing them pretty firmly into the soil, but not making this too hard. Then give a good watering from a fine-rosed pot, and put on the sash, leaving the frame pretty well open till the cuttings are dry; then shut up close, and only give a little air for an hour or two on fine days. Cover the frame well up with mats or sacks in frosty weather, especially at night, when the frost is very severe; and if it is very hard, a good layer of grass sods packed closely round the sides of the frame is a great help, but it should be done before the frost sets in. Little or no water should be given until the plants begin to grow, but do not let the soil get very dry. They will not make any roots for at least a couple of months; but as soon as they have done so, and show signs of growth in spring, give a little air when safe, and as the weather gets warmer and the plants advance give more, and harden as much as possible. When they are nice, strong, bushy plants, say in April or early in May, lift them separately with good large balls of earth (having given a good watering previously), and plant where they are to flower. If they have all rooted and grown well, so as to get at all crowded before planting out time, take out every other one and either pot or plant in a cold frame 6 in. apart. In this way you will get far healthier plants than by any other method. These plants need no fire-heat, though we have sometimes put a large jar of hot water in the frame on very severe nights; the ground in which they are to grow should be well dug at least 18 in., and if 2 ft. or more all the better, and plenty of good manure should be worked in, especially deep down. In this way they will keep on growing and flowering all through the summer, and not go off as they often do in shallow soil. Where only a few plants are wanted, they may be struck in wide boxes or pots, in which case it is better to take the cuttings rather earlier, and frost should be kept away during the winter. Cuttings may be also struck in spring—March or April, but a gentle heat of about 70° is requisite to induce them to form roots at that season.—B. C. R.

Uses of Lime in Gardens.—Culinary vegetables, and even fruits, are finer in quality, more robust in constitution, and better coloured when grown in soils that have a proper proportion of lime in their composition than when grown in those where it is very deficient. Its application in the garden is, moreover, no less beneficial for the destruction of plant-devouring slugs, injurious insects, and the unsightly growth of Mosses and Lichens; for all of which purposes the late winter and spring months are those in which it can be best and most beneficially applied. The ground being cropped in summer, it cannot be spread and covered in with facility unless in exceptional cases, such as between the clearing away of early and the sowing or planting of succession crops; if deferred till autumn, it becomes diminished in action from being washed and wasted during the immediately succeeding dull and rainy period of the year. Yet even in early autumn few would begrudge a good substantial top-dressing of quicklime to their Strawberry plants, if they were aware of the havoc which it makes amongst the slimy broods of the worst fruit-destroying nuisances during a rainy season. To

check snails and slugs in time, commence soil-liming with the sowing of early seeds, when the days are sunny and the earth sufficiently dry to allow of working among the soil with freedom. Use hot or quicklime liberally, merely hoeing, raking, or pointing it in on the surface; give good coatings of it also over Strawberry drills, by Boxwood edgings, the sides of walls, and on other vermin-harbouring places; renewing surface dustings frequently afterwards, when it becomes washed away, saturated, or inert. Nor should the extirpating effects of lime, or lime water, upon worms pass unheeded, when they disfigure the surfaces of fine grassy lawns and bowling greens with their unsightly earthy outcasts; or when they abound among small recently-planted seedlings to such an extent as to cause their destruction by turning them out of the earth and by drawing them into their holes.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

November 29.—Sowing Nemophila in pots; also four lights of Radishes and Carrots on a leaf-bed; manuring and rough digging vacant ground; beginning to dig flower garden borders; putting "show" Pelargoniums into their flowering pots; putting a little Moss to plants of Odontoglossum coronarium which are just pushing out new roots; putting into force Cinerarias, Anne Boleyn Pinks, Roses, and Dielytras; protecting Celery ridges with litter when frosty; washing Camellias in conservatory; putting soil into Seakale shed to warm for French Beans; hoeing among Strawberries and other crops, such as Cabbages, Lettuces, and Onions.

Nov. 30.—Planting Raspberry canes, giving each two forkfuls of manure; putting herbaceous Calceolarias into their flowering pots; also Asparagus on bottom-heat every fortnight, and Seakale every week; shifting plan s of Schizanthus into 10-in. pots, and staking them; giving orchard house a thoroughly good watering and a top-dressing of manure and loam.

December 1.—Trenching border for Roses; finishing the planting of fruit trees; planting a new Mint bed; making a new Mushroom bed; giving air to all Orchids as soon as the fire begins to raise the temperature of the house well above night heat.

Dec. 2.—Sowing Mignonette in pots to come in in April and May, also Cucumbers, Mustard and Cress regularly, and 500 pots of French Beans; shifting some late Primulas into their flowering pots; getting Pea stakes, fumigating Orchids and Cucumbers, sponging Palms.

Dec. 3.—Potting Pleiones in good peat; shifting a few small Palms for dining-room and other kinds of decoration; planting Yew trees and Junipers in the pleasure-ground and guarding them with wire protectors to keep off rabbits; plunging some Hyacinths on bottom-heat in Vinery, also Lily of the Valley. Miscellaneous—Putting in more Asparagus to force, which, if kept at 65° by night and 70° by day fire-heat, will be ready for use in from sixteen to eighteen days; nailing Plum trees on walls; finishing pruning Green Gage Plum trees.

Dec. 4.—Taking up Ghent Azaleas for forcing. Potting Ashtop Potatoes and placing them in heat; giving Lilacs and Briers in Pots a top-dressing of manure; pruning and tying up pillar Roses; pruning espalier Pear trees and saving grafts of any kinds that are required; cleaning lawns of leaves and worm-casts, and rolling them well and often.

Flower Garden.

At the present season, the one special requirement in flower gardens and pleasure grounds is, as has been previously stated, the maintenance of neatness. Keep clean, firm walks, smooth turf, freshly-pointed flower-beds and shrubbery borders. No labour should be thought too great to attain this end. Of course, where there are many deciduous trees, the fallen leaves will for the present retard the extreme neatness here alluded to, but as soon as all are down, rake out every corner, or the first windy day will blow them just where they are not wanted, and tell tales of work only half done. If the weather prove open and dry, shrub and tree moving and planting may still go on; to plant under any other conditions is simply wasted labour, for the commonest tree or shrub fails to thrive if planted whilst the soil is pasty; the reason is not far to seek—the spongioles and breathing pores of the roots are, as it were, sealed up by compression of the sodden soil about them when planting. Contemplated alterations and improvements should at once be decided on, and undertaken whilst there is time for such labour, without neglecting work which, as the season advancies, requires to be done. Soil, vegetable mould, and manure should also now be got together for enriching the beds in spring, and also for potting bedding plants; these latter will require careful attention as to watering, till daylight and a drier atmosphere are on the increase.

Auriculas.—It matters little how keen the frost may be if the leaves of Auriculas are dry, but frost acting upon plants through the glass causes the leaves to be covered as it were with a thick hoar frost. It involves a little trouble to throw a single mat over the glass, but it is desirable to do this rather than the plants should suffer from damp caused by the frost. Still continue to admit air freely when the weather is dry.

Carnations and Picotees.—Plants that have been placed out in cold frames require much the same treatment as that recommended for Auriculas. Admit air freely and see that there is no drip over any of the plants. The old stools that have been placed in a cool house are looking well, but the dry atmosphere is causing green fly to increase on the layers, even while they are in a temperature but little above the freezing point. For this fumigation must be resorted to.

Hollyhocks.—Where these have been recently potted, many of the leaves continue to decay, and it is quite necessary that they should be removed without delay. It is also a seasonable time to see to the old stakes that have been used. They may be cleaned and stored away neatly in a dry place, and any that have decayed at the base may be cut shorter, to be used next year for Dahlias, and new ones may be prepared for the Hollyhocks. In many places good stakes can be obtained in the woods from the cuttings of tall brushwood. The growths of stools of Ash or Hazel cut over when about 10 ft. or 12 ft. long answer well for stakes; but where these cannot be obtained, they may be made of 1¼ in. deal cut into strips, the corners planed off, and the stakes painted green, except that part under ground, which should be painted with a mixture of equal parts boiling tar and pitch. We have had stakes last for ten years when they have been painted in that way.

Pansies in Pots.—These are never at rest during winter when the air is above freezing point. They do not require very much attention, except to see they do not suffer from the attacks of green fly. They should now all be in their flowering pots, and as these are not well filled with roots, care must be taken not to apply any water to the roots unless the soil is fairly dry. Give air to the frames freely, but shut them up early in the afternoon if there is any sign of frost, and cover them with mats at night.

Forcing Pinks.—Those who have not yet grown these useful plants for forcing have a treat in store. We have potted ours and hope to have a good display. The best position for them now, next to a shelf in a cool greenhouse, is plunged amongst dry Cocoa-nut fibre refuse in a cold frame facing the south. The plants require moderate supplies of water, and the pots must be kept quite clean.

Polyanthuses.—It is not necessary to give these treatment at present very different from that given to Auriculas. Keep the lights over them in severe weather, but give air freely whenever the weather is dry. See that none of the plants suffer from want of water at the roots, and keep green fly off the leaves by fumigating, but be careful not to over-do the fumigation, as the leaves are easily injured.

Shrubbery.

The digging of shrubbery borders and plantations is of the utmost importance in assisting the growth of trees and shrubs; it mellows and sweetens the soil, breaks up the haunts of many injurious insects, and gives a neat and clean appearance to the borders. Dry weather in November and December is the most suitable time for this work, as then most of the deciduous trees and shrubs have shed their leaves. Shrubberies which have herbaceous borders surrounding them should have the Grass edges neatly cut, and the borders cleaned and mulched where necesssry; all stools requiring it should also have suitable protection from frost. Where no such borders exist the shrubs may with advantage be allowed to grow over the turf, and in no way should the latter be interfered with. Prune trees and shrubs requiring it, rearrange others, or take them out altogether if needful, in order to give plenty of room for the better varieties. Although it is very necessary in towns to plant liberally, care should be taken that the best trees and shrubs, especially those which are in the best positions, do not suffer from overcrowding; it is far better to secure a few fine trees and shrubs than a large number of weak ones, and by no other means can a park or open space become thoroughly and properly established. Much damage is done by neglect and carelessness in the matter of thinning out at the proper time because of the imaginary sacrifice; this is false economy, however, and should be carefully avoided. Steel forks are the most useful tools for digging amongst trees and shrubs, except in very light soils, spades being much more likely to damage the roots; whatever kind of tools are used, however, care should be exercised in order to keep a sufficient distance from the stems to ensure their safety.

Fruit.

Where the good old practice of applying surface mulchings of manure to all newly-planted trees is carried out, there need be no fear of the weather in any way proving injurious to them. Those who have not yet so dressed fresh-planted, or recently root-pruned trees, should take the first opportunity of doing so, for such a dressing not only acts as a fertiliser, but excludes frost, and the ground being thus kept warmer, fresh root action is the sooner induced. Nor is the application of such surface manurings alone beneficial to newly-planted trees, but to all fruit trees that are in any way exhausted by overproduction. As a rule, it is best to pull up and destroy old and decrepid trees, and to replace them with young ones; but, at the same time, it is well to distinguish between decrepitude and those that are only suffering from want of assistance to re-invigorate and start them as it were into new life. All such trees should have the old soil removed right down to the roots, and new compost, consisting of good fresh loam, bone manure, and charcoal, or wood ashes added, and afterwards a good surface dressing of rotten manure should be given them. We never fail in giving Strawberries and Raspberries such a manuring every autumn, and the results are heavy crops of fine fruit. The temperature of the ground being now about at the minimum point, and growth in fruit trees suspended, any planting still on hand would be better deferred till growth again commences in February. Meanwhile, whenever the weather is favourable push forward all such operations as pruning, training, nailing, and tying. All kinds of fruit trees, with the exception of Peaches, may now be operated on. It is a very difficult matter to lay down a rule as to how, and to what extent, certain trees should be pruned; but the following may aid those who are in doubt through lack of experience: First, then, if a tree has grown extra vigorously, there is a disposition to use the knife proportionately freely; but this only tends to aggravate the evil. The strongest growers must have the lightest pruning, and the vigour must be repressed by working down amongst the roots, and cleanly cutting off what are commonly called "tap roots," *i.e.*, roots that have developed a perpendicular form of growth without throwing out side-rootlets; when these are severed the trees become more fruitful and less productive as regards top growth. Trees that make but moderate or poor growth may, if necessary to get them into shape or form, be pruned hard without danger of evil consequences; but, generally, such trees require but little pruning, particularly if at all subjected to summer pinching or stopping, which, after all is the most rational mode of pruning, or, rather, it is a process which renders pruning unnecessary. Apples and Pears will by this time have become inured to the temperature of the fruit room, and therefore "sweating" will be over. The ventilators should now be always kept closed, except for an hour or so at mid-day, when the weather is fine and mild. Examine the fruit frequently, removing any that are decaying, as the fungus spores from these spread to others with great rapidity.

Vegetables.

Globe Artichokes.—These should now be protected; if, after the heads were used, the old stems were cut away, the young growth at the bottom will be in a robust state, capable of enduring even the most severe winter with a little protection. The best material is about 1 ft. of dry litter placed lightly round the young shoots, but not over them, leaving the largest leaves just above the tter; round this place

9 in. of soil two-thirds as high up as the litter, in the form of a slight Celery ridge, but not drawn up so close. Where the rows are near together it will be necessary to bring the soil from elsewhere. In this case coal ashes, if at hand, will answer the purpose in every way.

Early Peas.—Those who reside in districts where severe and protracted frost is not usual, and where, in addition, the soil is of a light nature, may now sow a few early Peas for the chance of having some a little more forward in the season than by later sowing. Choose a situation sheltered from the north and east winds, with the ground, if possible, sloping to the south. Dig it well, and mark out the rows 4 ft. apart; in opening the ground for sowing do not go above 2 in. in depth, for if the Peas are put in deep at this season, they are liable to rot. Sow considerably thicker than would be required in spring to make up for such as may not vegetate, or that suffer from the attacks of slugs; cover with the soil in the usual way, and over the top put a couple of inches of fine coal ashes. This will not only act as a protection from frost, but also prevent slugs from penetrating the ground and devouring the young sprouts as they are pushing up through the soil. On ground that is much infested with slugs there is great difficulty in keeping these early-sown Peas from being eaten, and if, in addition, the soil is of a wet retentive nature it is better to defer sowing until January.

The Water Soldier (Stratiotes aloides).

The Water Soldier.—This is one of those curious water plants which are seldom seen except in the gardens of those who have collections of aquatics. It, however, frequently becomes naturalised in ponds and waters, into which it has been introduced from the garden, and it is believed to be really wild in the fens of eastern England, in Ireland, and in some parts of Lancashire and Cheshire. Our illustration shows both the plant and the flowers well, though it can scarcely be called an ornamental plant in the common sense of the word. Nevertheless, it possesses some interest for lovers of hardy water plants, and it is easily established in any piece of water, small or large. Its botanical name is Stratiotes aloides, the specific name being given from the resemblance of the plant to some Aloes. In the autumn the plants sink to the bottom of the water. In the spring, from among the leaves of the old plants, arise numerous thick suckers, which produce young plants. The flowers are like those of the Frog-bit, pure white with yellow stamens, and they appear late in summer. The leaves are saw-edged and from 6 in. to 18 in. long.—W.

Trumpet Creepers.—Among the hardy climbers that deserve high rank are the Bignonias, or, more properly, Tecomas. Their rapid growing, woody stems, bright foliage, and richly coloured flowers have acquired a well-deserved reputation for beauty and practical qualities; but their very vigour, a good trait in itself, may become a nuisance unless checked and trained by systematic pruning. All species of Tecoma possess both beauty and vigour, but in the quality of hardiness a decided distinction should be made. They come from all parts of the globe, and their habits vary accordingly; but my object at present is to notice only one variety of a certain hardy species. T. radicans is the hardiest and best known of all, and is only surpassed by grandiflora, because of its grander and more open flowers; in hardiness, the latter is decidedly inferior. T. radicans shows a bright red colour, and a narrow, straight form of the trumpet-shaped corolla, quite peculiar and distinctive. In date of blooming it differs but little from T. grandiflora, and otherwise comports itself like a near relative. There is, however, a variety of radicans called sanguinea præcox, the superior qualities of which have received slight recognition. Several nurseries of this country offer in their catalogues a variety of radicans variously termed sanguinea, atro-sanguinea, and coccinea. I suppose this to be the same as the one to which I refer, although our name comes from Belgium. Garden varieties are frequently somewhat mixed, and botanists give but little attention to the adjustment of the names of these minor forms. I select the Belgian name as more descriptive, and hence much better, especially as those of our catalogues fail to mark two distinctive peculiarities of the climber in question—namely, that it excels all others alike in early blooming and rich colour. While grandiflora and radicans bloom in August, sanguinea præcox commences to display its deep red flowers early in July. This extension of the season wherein we may look for flowers on the various species of climbers is of much importance to those wishing to increase the number of floral effects on their lawns at any given period, especially when that period is not prolific of flowers, as is the case in July. This is a good time to plant, or the ground may be prepared ready for planting in March. The early variety mentioned above would probably be more valuable than the older forms in our gardens.

FRUIT.

FRUIT TREES FOR HIGH WALLS.

The value of what is known as the upright system of training fruit trees is not sufficiently known. Wall culture is necessary for the production of the finest fruit in many northern and temperate climes. We seem to have long recognised this fact, but not to a sufficient extent, and the progress with wall-fruit cultivation is very slow. Not in one garden out of ten is sufficient attention paid to it, while it is most rare to find the walls of gardens in which considerable pains are taken with the fruit trees covered as they ought to be. We will assume that the cultivator is sufficiently aware of the importance of walls in the production of the very finest fruit, and that he has selected the varieties really worthy of culture in this way. After these there is a third condition of success indispensable to perfect wall culture, the absence of which leaves half our wall surface bare and robs us of quantities of the finest fruit. This is the true mode of covering walls quickly and well—the erect training. The wrong and the tedious, and therefore the profitless mode, is the large fan or horizontal tree, which takes a dozen years to form well even in good hands, and perhaps by the time it is formed some new varieties will have come to light, and the judicious cultivator will be anxious to clear away the results of so many years' work.

There is no need to spend even one-third of this time in the covering of even the highest garden walls with forms of trees as fruitful, as agreeable to the eye, as any of the old large forms, and much more easily made. The simplest and best form for every kind of wall fruit is the erect one, with from one to four or five branches ascending from the bottom to the top of the wall. In this way a good cultivator, by selecting healthy and vigorous plants to begin with, may furnish a wall 10 ft. high in two years from the time of planting.

To do so, he would not, of course, follow the common practice of cutting hard back the shoots; if he thought they would not break regularly, he would bend them down to induce them to do so. With good young trees, three years are the most that should be required by any gardener to cover the wall by this system. It must not be supposed that it is applicable only to the Pear; it is equally so to every other kind of fruit tree worthy of a place against a wall. In the case of the Peach a still smaller form is, we are quite certain, desirable. A Peach tree with two branches like a capital U may seem awkward to persons only accustomed to the fan mode of training; but we have seen many walls perfectly covered by it on the Continent, and it is far better suited to our climate than a larger form. Trees trained in these particular forms are not required to begin with; we have simply to take, in the case of the Pear or the Apple, a young nursery tree, with its five branches or so, and train four or five of them, as may be required, in a vertical manner against a wall, and at equal distances.

The general adoption of this system would soon fill our fruit rooms and cover our half-naked walls. It would prove of the greatest possible advantage to gardeners generally, in enabling them to rapidly cover the many bare walls one sees; and if a desirable system for ordinary garden walls, it is much more so for the walls of stables, houses, &c., which it takes years to furnish by the common plan. The only case where it is not so suitable as a spreading mode is on very low walls and trellises.

Examples of walls as well covered as those shown in our woodcuts are not unfrequent in France and Belgium, and we have seen a very good example of growing the Apple thus with Mr. Sage, in the garden at Ashridge Park, who covered a portion of his walls in two years with choice dessert Apple trees. At Chiswick similar methods of training have been carried out with the best results.

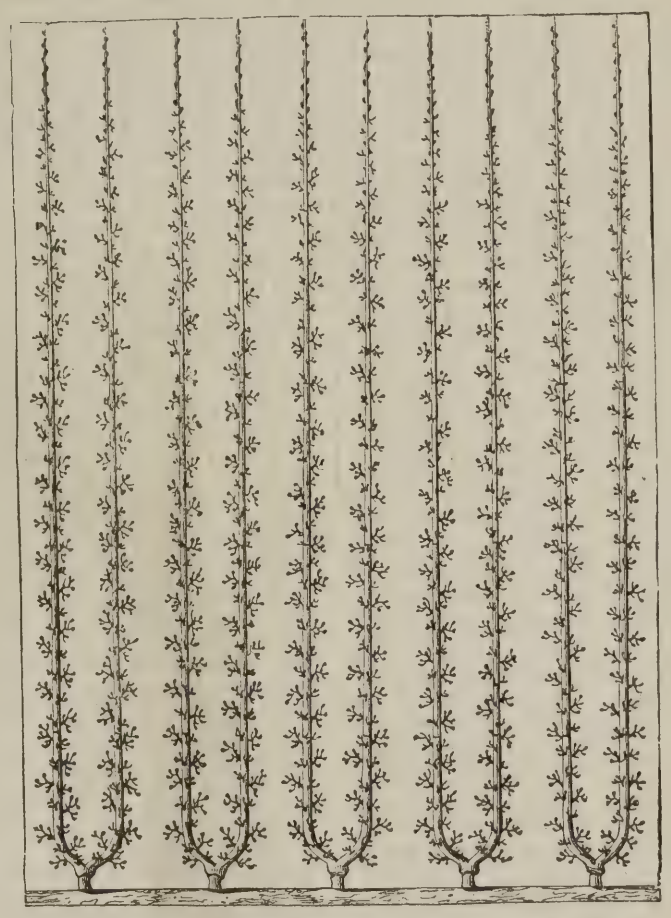
Keeping Fruit.—A few principles are important in keeping fruit, particularly Apples. The first is coolness of temperature. If too warm, they (the Apples) will mature, so that temperature is the important thing. Keep as cool as possible for long keeping. A little frost, gradually let out, does not seem to hurt. A low

uniform temperature, say at 40° or a little below, just avoiding the frost, is all that is wanted in the line of temperature, so far as Apples are concerned, and other fruit comes under the same general head. It is no difficulty to keep this point in the winter, only be sure and have your cellar or fruit-room warm enough to withstand the heaviest cold. If in the warm days there is a tendency to too much warmth, open the windows or doors; do not neglect them. The next great consideration—and it is almost equally great with the first—is the hygrometric condition. If too moist, you may be sure your fruit will rot—will mould. If too dry, it will shrink—that is, lose its moisture—and this is almost as bad as rotting.—W.

Best Strawberries for Different Purposes.—I grow successfully the following Strawberries for different purposes, and can confidently recommend them, viz., for early forcing—Early Prolific, President, and Sir Joseph Paxton; for late forcing—Underhill's Sir Harry, Cockscomb, and James Veitch; for general purposes—Early Prolific, President (which in my light soil bears enormously, and is unique in flavour), Sir Joseph Paxton, Unser Fritz, and Rifleman; for jam—La Constante and Jeanne Hachette; for fruit-ices and punch—Belle Bordelaise, Royal Hautbois, Black Hautbois, and Red Alpine; for purposes of exhibition—Unser Fritz (perhaps the noblest of all Strawberries), James Veitch, Cockscomb, Dr. Hogg, President, and Sir Joseph Paxton.—E. N.

Keeping Grapes in Bottles.—Placing bunches of Grapes in bottles of water to preserve them during the winter is a system often practised, and under certain circumstances it possesses many advantages. In Vineries full of plants, and where there are many Grapes hanging, it is impossible to keep the atmosphere sufficiently dry to prevent the fruit from rotting, and in such cases it is much better to cut the fruit and bottle it than to let it spoil on the Vines. Many old Vineries, too, are far from being waterproof, and, consequently, ill adapted for keeping Grapes. Moreover, where there are only, as often happens, a few dozen pounds of fruit hanging in a large house, from which it would take a great deal of firing to keep out frost and damp for any length of time, cutting and bottling may be profitably resorted to. In cutting bunches for this purpose from 4 in. to 6 in. of the shoot between the main stem and the bunch should be removed along with the fruit. This piece of wood is placed in the mouth of the bottle, which may either be laid down in a slanting direction, so as to allow the bunch to hang over the edge of the shelf or whatever else may be best. Pint bottles suit most bunches, and they need not be quite filled with water; on the contrary, if the end of the shoot is covered that is sufficient. In order to prevent too much water from passing through the wood, the cut end may be half charred before it is placed in the water. A fruit room in which Apples and Pears keep well is a good place in which to put Grapes bottled in this way. The atmosphere about them should be kept dry, and the temperature should not be allowed to fall below 40°. They should also have air and plenty of light on all favourable occasions. Under this treatment few berries will decay, and their flavour will not deteriorate much. Grapes may also be kept by cutting the bunches as if for bottling, and running the cut end of the wood into a fresh Potato. Thus circumstanced, they may be hung up in a room like that to which reference has just been made. This plan is, however, not so good as bottling. When the bunches are cut for these purposes, the Vines should be pruned at once, and all cleaning required should be done. Grapes need not be cut merely for the purpose of relieving the Vines, which do not suffer through fruit hanging on them, even until the buds begin to swell the following season.

Mosses and Lichens on Trees.—Even admitting that Mosses are harmless on fruit trees, they are nevertheless unsightly when thickly dispersed, in luxuriant growth, over fruit tree and bush stems and branches; and we would as soon think of allowing the growth of gross weeds among fine flowers as that of these epiphytes on what are expected to be fruit-laden boughs. They are quickly destroyed by lime applied (though hot lime may not extirpate many of the numerous insects) just before the buds begin to open; then, on the morning of a quiet day that is likely to continue dry and sunny, syringe over all the branches with water, or, better still, with soap-suds, till they are thoroughly wet, then dust on the hot lime till no portion remains unwhitened. Should the weather actually continue dry through the day, and no deluging rain fall immediately after, the lime will adhere for a considerable time, and no renewal of it need be made till next year. After this application the Mosses and Lichens will wither up and crumble into dust, and become dispersed, together with any insects or insect ova that may be associated with them, by the first fanning wind, or by their own gravity, light though they be, so as to leave the bark clean and smooth where before it was foul and rugged. If the application of lime to trees and bushes is made too early, it is liable to be washed off before the sun becomes sufficiently powerful to impart its full share of burning influence; while, if delayed till the young leaves and blossoms begin to protrude, these are liable to get somewhat browned or scorched: hence the propriety of choosing the time before mentioned for applying it.



Method of training Pear trees to quickly furnish high walls.

ANSWERS TO QUERIES.

3530.—**Christmas Roses.**—Helleborus niger is one of the best and easiest of herbaceous plants to cultivate if "C. B." will prepare a bed 18 in. deep, trench in or fill up with good rich loam, old mortar rubbish, or small quantity of good sharp sand, secure good strong plants, after planting do not disturb them, only keep the surface of the soil from becoming sour, attend to watering in the spring while they are making their growth, place over them when frosts commence a good frame, and give all the air possible during good weather. Under this treatment I have had plants to produce over 100 blooms in one season, and at a time when flowers are much required.—T. Lowe, *Penketh.*

3644.—**Unsatisfactory Vines.**—There would seem to be little doubt from the description given by "J. R." of his Vines, that they are affected with mildew. Their having this disease, and also the fact of their putting forth air roots, appear to indicate that they are suffering from their proper roots being in a cold, damp situation, they having probably worked downwards into an uncongenial subsoil. The branches have also, most likely, been deprived of the ventilation necessary for their healthy growth and development of leaves and fruit. An old Vine of mine, trained in a greenhouse, roots outside, which had, season after season, been attacked by mildew, was effectually cured, and has remained ever since quite healthy by simply trenching round the roots to a depth of about 2 ft., half filling the trenches from the bottom with rubble, and the upper portion with garden mould. This remedy would probably prevent air roots also. Since, however, "J. R.'s" border was re-made last year, perhaps he had better lift a portion of the roots of each Vine this winter, and spread them out near the surface, doing the same with the remainder the following year. This, and a proper attention to ventilation and the avoidance of over-cropping, will probably remedy what he complains of. He might also, with advantage, paint the Vine stocks and shoots after the winter's pruning with Gishurst Compound.—J. M., *South Hants.*

3578.—**Passion-flower not Blooming.**—We can only surmise that the plant in question has not attained sufficient vigour, or that the wood has not ripened well enough to admit of flower-buds forming. If the plant is a large one, and the branches have become at all crowded, we would cut out all the weakly ones, laying in the strongest at wide intervals, shortening them back to two-thirds of their length. Each young shoot will then come away strong, and if allowed ample space to develop, should mature sufficiently to give bloom. During the growing season give plenty of water in hot weather, and take care to frequently syringe overhead. The

Passion-flower likes plenty of light, heat, and moisture when growing, enjoying at the same time a free circulation of air, without which the tissues do not harden sufficiently to admit of the wood coming into a bloom-bearing state.—J. CORNHILL.

3609.—**Vallotas not Flowering.**—We should imagine that the plant in question was shifted into unsuitable soil, perhaps of too tenacious a nature, the consequence being that the fleshy roots have got into a partially torpid state. Water just enough to keep the foliage green until April, and then, after allowing the soil to become quite dry, turn the plant out of the pot, and if the points of the roots appear at all black and decayed, work away as much of the soil as possible with a pointed stick, and replace in the same sized pot, filling in with fine, light, well-sanded compost. Place the plant in a light, airy greenhouse, frame, or room, and give plenty of air when the weather is favourable. The Vallota does not like confinement in any shape; it is almost hardy in our climate. Water moderately until the pot gets full of roots, and then give more copious applications.

3645.—**Deformed Cyclamen Blooms.**—Instances may be found of Cyclamen plants which appear incapable, in spite of the best of treatment, of bearing anything but imperfect flowers. In such a case there is but one remedy—that of throwing the plant away. As a rule, however, deformed blooms are caused by imperfect root action, or by the attacks of green fly in their bud state. The insect finds its way into the petals as soon as they emerge from the calyx, and, sucking the juices from them, cause them to twist in their development, or quite hinder their progress. Plants which have been grown in a close atmosphere are especially liable to the attacks of insects, those which enjoy a free circulation of air during the summer months, and full exposure to the night air when the weather will permit, as well as to the sun's direct influence during the autumn months, being but little affected by insect plagues, for the plants appear to become so hard and vigorous, that the green fly does not find the young leaf or bud at all to its liking. It is also to be noted that the roots of plants thus grown are far more lively than is the case when growth has been made in a more confined atmosphere, and will consequently admit of being more copiously watered, with the consequent effect that good-shaped blooms are formed. Where fly exists, and this is easily seen, the best plan is to dip in Tobacco water, at the rate of 4 oz. to the gallon, but to make certain of eradicating the pest two immersions at an interval of a week will be necessary. I should also add that any check experienced, such as too much water or too little when the buds are forming, will cause deformed flowers, and as the buds are formed successionally for a period of three months, it may easily happen that some flowers come imperfect and others of good shape. Our advice is to place the plants in a cool house, give plenty of air, and water carefully; the after flowers will then in all probability come as they should do.—J. C., *Byfleet.*

3567.—**Raising Australian Plants from Seed.**—The seeds may be sown either in March in gentle warmth, to be removed when fairly up into a cool structure, or they may be sown in a cold frame about the latter end of April. Prepare some 4½-in. pots by well draining them, and fill them to within 1 in. of the rim with fine, well sanded peat, to be made quite firm and level on the surface. Then water gently, and when superfluous moisture has passed off, sow the seeds thinly, and cover with very fine sandy soil. Then cover with a pane of glass, shading the same with a piece of paper until the young plants appear above ground. When they are large enough to handle, they may be pricked out in pans or 6-in. pots, and the following year they should be potted into small pots. A cool greenhouse will suit them very well, keeping rather close when first potted, but giving plenty of air during the summer. A cold frame will be even better than a greenhouse, but they must not get frost-bitten.—J. C. B.

3646.—**Planting Gooseberry Trees.**—Although it is well to trench the soil 2 ft. deep before planting any kinds of fruit trees, it is not advisable to highly manure it, as it tends to the development of gross, rank growth that is not fruitful. If the soil be fairly good, that will suffice for any fruit tree; but in planting, having first shaken in some fine soil about the roots, add a little manure before finally filling in. This will help to exclude severe frost, and promote a surface development of root growth. Then, in future years, by the addition of surface dressings of manure, the trees may be kept robust and fruitful. One of the dangers incidental to planting in rich, deeply stirred land is, that strong main roots are encouraged to go deep, where they soon find a sour soil. When this results the only remedy is to root-prune; if, however, a little judgment be shown in the planting, this necessity may be avoided. Gooseberry bushes scarcely need root pruning in any case, but the more the roots are encouraged to the surface by top-dressings the more fruitful will the bushes be.—C.

3662.—**Out-door Tulips.**—Tulips, as a rule, bloom naturally in the open air in the month of April, and not in March. The earliest are the Van Thols, but these have the smallest flowers, and are more transitory than are the later ones. The best, because most massive, are the doubles; these endure longer, but need some support if the weather at blooming time be wet and stormy. The best six double kinds for out-door culture are La Candeur, white; Marriage de ma Fil, red; Tournesol, yellow; Rex Rubrorum, dark red; Murillo, rose and yellow rose. Six good single kinds are Yellow Prince, Rose Grisdelin, White Pottebakker, Kaiser Kroon, red and yellow; Proserpine, rose and violet; and Rosa Mundi, tinted white. All of these grow to a height of about 10 in., and are fairly even, making rich, beautiful masses. If these be planted in a bed of some neutral-coloured carpet plants their effect is much enhanced.

3663.—**Zinnias.**—The richest soil will, with the Zinnia as with the Aster, produce the finest flowers. The Zinnia will transplant freely from the seed bed, but a considerable check is given in such cases. The best plan is to sow a couple of seeds in a small pot, and take out the weakest when the plants are well up. This may be re-potted into other pots, and the check will make them become a succession to the others. When these plants are 6 in. high they may be planted out in rich garden soil 15 in. apart, and at blooming time, if needed, the smallest flower-buds may be cut off, leaving only the finest to produce flowers for exhibition. Their quality largely depends then upon the quality of the strain of seed.—A. D.

3665.—**Rabbits Gnawing Forest Trees.**—If Gishurst Compound at the rate of 8 oz. to the gallon be dissolved in soft water, and sufficient clay added to make it of the consistency of paint, and if it be then applied to the stems of the trees, no rabbits will bark them for the next year to come. Of course no application of the kind will be of much longer duration. The compound can be obtained from any seedsman.—E. H.

3643.—**Draining a Garden.**—To drain a piece of land where there is no outfall is a difficult matter. A ditch across the lowest end 3 ft. or 4 ft. deep would answer the purpose with a drain down the centre of the piece leading into it, but such a ditch would probably be objectionable. "W. G." might dig a dead well, or say a hole 5 ft. deep at the lowest point, lead the drain into it, and fill the well full of stones. This would be a cheap way out of the difficulty, and would probably answer the purposes.—E. H.

3654.—**Drying Manure.**—It is contrary to scientific teaching to assume that the mere act of drying, whether naturally or artificially, deteriorates manure. If, however, exposed in the open air and moistened by rain, then a considerable loss results. It is water, and neither heat or wind, that constitutes the chief agent for the dispersal of the elements of any kind of manure. We find that deposits of guano have laid on the Chincha Islands, on the south coast of America, for perhaps thousands of years exposed to all the heat and glare of a tropical sun, and yet have lost none of their manurial properties, being in fact the most highly concentrated manure that can be found.

3657.—**Rose Cuttings.**—It is now an excellent time to put in Rose cuttings, and there it really no reason why every person who has a garden should not strike a few even without the intervention of the jobbing gardener. The best wood for the purpose is that which is hard and of the early summer's producing. Lengths of 6 in. having three buds suffice, one being at the base and the others above ground. The position should be a sheltered one, as severe frost may kill some of the least matured cuttings. The soil should be good to induce strong growth when rooting, and to aid rooting early some sharp sand should be put around the base of the cuttings as fixed in the trenches cut down by the spade to receive them. In very hard weather a little hay or straw or Fern laid over the cuttings will afford valuable protection. The tenderer Tea Roses will do best if put in under a hand-light or in a frame. Once rooted, these will make plants that will long outlive the budded kinds.—A. D.

3665.—**Rabbits Gnawing Trees.**—Some of the simplest means of preventing rabbits from eating the bark of trees is to dress them with some composition that is at once obnoxious to the animals and uninjurious to the trees. In my neighbourhood the market growers get a quantity of resinous tar from the local powder mills, and use that in a very liquified state. It seems to be quite effectual. Stockholm tar, which is a vegetable product, is, we believe, quite as harmless to the trees, and as effectual. Paraffin mixed in water to the extent of half-a-pint to a gallon of water is also useful and harmless. If some cow manure and soot be stirred in with it it will prove all the more deterring. A solution of urine, soot, and clay is also very objectionable to the animals. It is desirable that whatever deterrent is employed it should be cheap, easily applied, harmless to the trees, and effective in its purpose.

3667.—**Violets in Autumn.**—It is not possible to ensure the blooming of Violets in the autumn, as it is not the natural season. If plants have been warranted to bloom in the autumn, then you have been deceived. Still, with good culture in the spring and summer, keeping the plants free of runners, and planting these up to produce a succession of robust plants, it is possible to get the crowns so strong as to make them throw a small proportion of flowers in the autumn. Under the very best culture, and with one of the best growing seasons for Violets ever known, our market growers are only finding a mere sprinkling of blooms. The real crop of flowers will not come until March.—A. D.

3568.—**Slugs and Worms.**—Dissolve 4 oz. of carbonate of ammonia in each gallon of soft water.—F. W. P.

3666.—**Begonias and Calceolarias Dropping their Buds.**—The dropping of the blossoms is probably due to extremes in the management. Regularity in attending to the wants of the plants, especially in watering, is very necessary. It is also important that the soil and drainage should be in a healthy state, so that the moisture may pass freely away.—E. H.

3647.—**Leather Shavings as Manure.**—I have always found the best way of applying curriers' waste is to dig it into the land and leave the roots to deal with it. In this way nothing is lost, and when surrounded by roots in a state of activity it is wonderful how soon (comparatively speaking) the manurial virtue (which is very considerable) is extracted from it.—E. H.

—— All shop refuse may, if cut fine enough, be dug into the soil at once, but of course all substances that have been somewhat transposed by the process of tanning are not so valuable as manure as are the trimmings of skins and other animal attributes not so prepared. The cuttings may also be put into a heap in the open, and covered over with a few inches of soil. If allowed so to remain for several months the refuse will be found partially decomposed and more suitable as manure.—A. D.

3651.—**Drying Manure.**—This is a disputed question (as your correspondent remarks), but I think there is no doubt the sooner animal droppings are absorbed by, and covered with the earth, the better. Drying in the sun cannot add to its value, on the contrary, it probably detracts from it by permitting some of the manurial gases to escape into the atmosphere.—E. H.

3652.—**Plants for Screens under Tall Trees.**—Plant Yews, Hollies, Boxes, Arbutus, Mahonias, Aucubas, and a few Rhododendrons toward the outside if the soil is good and suitable.—E. H.

3646.—**Planting Gooseberry Trees.**—Trench the ground up deeply, say 2 ft., manuring the bottom spit by mixing some manure in as the work goes on. The surface can be manured with top-dressing any time.—E. H.

3664.—**Silicate Paint.**—The best paint for your conservatory floor is G. C. Pulford's Magnetic Paint, 77, Cannon Street,

—— This can be procured at the Silicate Paint Co., Seel Street, Liverpool; it is sold in all colours. I have tried it on bricks, stone, cement, &c., and it answers well. If you give your concrete floor two coats it will last for years, standing either drip or damp, and will never come off.—J. C. KERSHAW, *Chester.*

3714.—**Spinach Between Strawberries.**—*Miss E. F.*—Spinach may be sown between rows of newly planted Strawberries 2 ft. apart without much injury to the Strawberries. Sow the round Spinach in March, and in August or September you might sow a crop of the Prickly Spinach for winter and spring use.

3715.—**Straggling Myrtles.**—*A. C.*—Cut back in March or April, and keep in a greenhouse, syringing the plants once a day. When the new shoots are 6 in. or 8 in. long they may be stopped by pinching out the centres. You will then soon get bushy plants.

3716.—**Passion-flower Bare at the Bottom.**—I planted a Passion-flower last spring which sent up two shoots 15 ft. high. For the first 5 ft. there are no lateral branches, but plenty above this. What can I do to make laterals spring lower down the stems?—J. H. G. [Cut the plant back to within 2 ft. of the soil in spring, and during the summer stop the points of the strongest shoots.]

3717.—**Plantains on Lawns**—*F. T. F.*—Your best way would be to have the Plantains pulled up by the roots now the ground is soft. If this be persevered in through the winter and spring, and any that remain are now allowed to flower during summer, you will probably exterminate them in time.

3718.—**Marie Louise d'Uccle Pear.**—Would this Pear succeed against an Oak fence about 6 ft. high, facing south, clay soil? Will the unevenness of the wood be injurious to its growth?—C. G. [If the soil is well drained, the Pear tree would do well in the position you name.]

3719.—**Hyacinth Bulbs going Mouldy.**—A short time since, finding that two Hyacinth bulbs were going mouldy, I applied flowers of sulphur. Ever since the water has smelt after standing a few days. Can you explain this? The water is changed every three weeks. —T. S. S. [Place the bulbs on a pot full of Cocoa-nut fibre or damp sand for a week or so till they emit roots, then put them back into the glasses; also put a few pieces of charcoal in the water.]

3720.—**Artichokes**—*F. E. M.*—The Globe Artichoke is an ornamental-leaved dwarf-growing plant, which bears large heads composed of fleshy scales. The heads and stalks are cooked in various ways and eaten. The Jerusalem Artichoke is a plant exactly like a Sunflower, growing 8 ft high, and producing tuberous knotted roots, which are generally boiled and mashed in the same way as Potatoes.

3721.—**Solanums.**—*Zara.*—Cut the plants back in spring, and plant them out-of-doors in good sandy soil. Lift and repot in September.

3722.—**Chrysanthemums after Flowering.**—I have some good Chrysanthemums in a conservatory; what is the best treatment for them when done flowering in order to ensure good plants for next year?—AVE. [Cut them down close to the pot, and place them in a frame or keep them in the greenhouse. When nice young shoots 3 in. or 4 in. long spring from the bottom, take them off, and put them in small pots of sandy soil; plunge in ashes in a frame, and pot on as required, moving them out-of-doors in April. Throw the old plants away or plant them out in the garden.]

3723.—**Gloire de Dijon Rose in Greenhouse.**—*Gloire de Dijon.*—If you are obliged to keep the pot in which your Rose is growing near to the hot-water pipes, it would be advisable to bind some hay bands round the pot, which keep damp to prevent the roots being dried up. Do not prune now, but get rid of the green fly by dipping the shoots into Tobacco water.

3724.—**Pear for East Wall.**—*C. A. T.*—Marie Louise, Doyenne du Comice, and Winter Nelis are all good Pears, and will succeed on a east wall. Plant now if the weather is open.

3725.—**Rose-scented and Ivy-leaved Pelargoniums.**—*Brum.*—These succeed well in an ordinary greenhouse. The best soil for them is loam and leaf-mould in equal parts with a little road or silver sand added. During summer they will grow well in the open air, and require liberal supplies of water; but in winter, unless they are in a warm temperature, the roots are best kept rather dry.

3725.—**Forcing Asparagus.**—*Heartsease.*—Put the roots in bottom-heat by all means if possible. You will not succeed very well by putting them in a greenhouse without bottom-heat.

3726.—**Dividing Forget-me-nots.**—*Heartsease.*—As your plant is of a scarce sort it would be well not to divide it till spring. If you then take off cuttings, and put them in sandy soil in a warm frame or greenhouse under a hand-glass, and take cuttings from these when struck, you will soon increase your stock.

3727.—**Primroses.**—Will double white and mauve Primroses flower earlier if potted and put in a cold frame than they would in the open air? and will they do with artificial heat?—HEARTSEASE. [They will flower earlier in the frame than out-of-doors. They will not stand much heat, but in January you may place them in a greenhouse or window with a view to advance their flowering. Look well after green fly.

3728.—**Mushrooms in Cellars.**—Will the manure for the culture of Mushrooms in cellars under dwelling-houses generate an objectionable smell to the rest of the house?—NOVICE. [If you grow the Mushrooms in tubs or deep boxes and keep the cellar clean and the doors shut, we do not think there will be any smell. We never found any objection to the smell of a Mushroom house.]

3729.—**Violet Culture.**—I have a border sloping south and west, protected east and north; old garden soil. How can I grow Violets on it?—VIGORNIS. [Give it a good dressing with rotten manure, dig it deeply, procure some good strong plants now, and plant them in rows 1 ft. apart each way. They will flower in spring. During summer give plenty of water and cover the ground between the rows with rotten manure. If convenient select some of the best runners which will be formed, and peg them to the ground and remove the remainder When those pegged down are well rooted, sever them from the parent plants and make a new plantation with them. Do away with the old plants the following summer, and repeat the operation of planting young runners. By this means you will always have young and healthy plants which will flower well.]

3730.—**Heat for Cucumbers.**—*Constant Reader.*—If you wish to grow Cucumbers in winter you must have a bottom-heat tank. Brick and cement would probably be the cheapest.

3731.—**Azaleas Losing their Leaves.**—*J. W., Barnsley.*—The plants may be dry. Soak them in a tub of water, and if air bubbles rise out of the soil let the plants soak for an hour at least.

3732.—**Lime with Potting Soil.**—How soon will potting soil be fit for use after mixing a small quantity of quicklime with it to kill insects? The soil lies in a dry shed. Would watering it be beneficial in absorbing the lime?—C. E. C. [If you have only put a small quantity of lime, you may use the soil at once. It will not hurt the plants.]

3733.—**Covering Bulbs in Window Boxes.**—I have planted my window boxes with Tulips, Jonquils, Crocuses, and Snowdrops 2 in. deep in good soil, and covered them with a layer of Cocoa-nut fibre about 1 in. thick. I should be glad to know if I must remove this covering, or will the plants grow through it, which I should much prefer? If it must be removed, how long after planting should it be done? Also may I expect them all to bloom about the same time?—BIRDSEYE. [Let the fibre remain. The time of blooming depends on the kinds planted.]

3734.—**Auriculas.**—All the GARDENING instructions direct the removal of decaying foliage from Auriculas. As fast as I remove one decayed leaf another appears, and, judging by the amount of leaf on the plants now, my entire stock will last me about three weeks at the rate of one leaf per diem. Can you instruct me in my rapidly impoverishing state? The plants are in pots under a light without heat. They are rather dry.—FLOS. [Keep the soil just moist, and give all the air possible. Remove the lights altogether in fine weather. Keep the plants near the glass.]

3735.—**Planting Peas and Beans.**—I should be glad to be informed how to prepare ground for Peas and Beans, and the depth and distance the same should be planted apart.—W. S. [Well manure and dig the ground during dry weather, level it, and for the Peas draw drills 3 in. deep and 3 in. wide, and 2 ft. to 4 ft. apart, according to the kinds sown. Early Peas should have a south border if possible. William the First, Ringleader, or First and Best require to be in rows 4 ft. apart; Blue Peter, Little Gem, and several others may be 2 ft., as they are very dwarf. Beans, if for early use, should be of the Early Mazagon kinds, and be planted in double rows, the Beans being 3 in. apart each way, and the rows 2½ ft. apart. After sowing a coat of coal ashes put along the rows ½ in. or more in thickness will help to guard the seed from mice. If the Peas are rolled in red lead before being sown, mice will not be so liable to attack them.]

3736.—**Seedling Gloxinias.**—I have a number of seedling Gloxinias, many of which appear to be dying. What part of the greenhouse, and what treatment is best to keep them through the winter?—ALPHA. [If they have good bulbs keep them on a dry shelf in a warm part of the greenhouse, but if they are only small plants recently raised from seed, you must keep them growing in a moist, warm temperature.]

3737.—**Trenching, Ridging, &c.**—*R. H. D.*—This means digging the ground two or more spits deep, and turning the soil from the top into the bottom, and bringing the bottom soil to the top. Ridging is better than rough digging. It consists in throwing the soil into a series of ridges about 3 ft. apart.

3738.—**Unfruitful Pear Tree.**—I have a Pear tree which for some years has borne no fruit, and for the last two years made no shoots more than 2 in. or 3 in. long. It is a dwarf standard, and the branches are very thickly set with old shoots a few inches long. What will bring it back to bearing?—R. H. D. [Thin out the branches, and give a good coating of rotten manure.]

3739.—**Pruning Rose Trees**—The shoots of my Rose trees are 15 in. to 20 in. long and bare at the bottom. Will cutting them off half way do any harm now? will it induce buds to break out lower down?—R. H. D. [Thin out the head, and shorten the shoots back to three or four eyes.]

3740.—**Grafting Old Pear Trees.**—I have in my garden a Pear tree about 20 ft. high; it has borne no fruit during the last three years, for which time I have occupied the house. I am told that the fruit, when it bears any, is only fit for cooking. Would you advise me to cut off the branches and graft it afresh? and if so, when and with what kind?—A. MILLARD. [We would advise you to get some good gardener to cut back the tree and graft it for you. Duchesse d'Angoulême, Glou Morceau, or Winter Nelis are good kinds, and bear well on standards.]

3741.—**Pruning a Young Vine.**—I planted a Roval Muscadine Vine in a cool greenhouse last April; when planted it had one branch. It has grown well, sending ten branches out of the sides of main branch of medium length, and strong. Am I to cut these off at the bottom close, or leave four or five eyes? Is now the time to prune it?—E. M. [Prune the side branches in to two eyes. Now is a good time if the leaves have fallen and the wood is ripe.]

3742.—**Protecting Budded Roses.**—I have a lot of Roses that were budded last July. Some have grown out a little, and some have not. The two last winters were so severe that I lost many Roses, and I am afraid I shall lose these if not protected. They are in Derbyshire.—E. M. [Put a little straw or Fern round the heads.]

3743.—**Ferns in Rooms.**—I have a small fernery in a room where fire and gas are used. Last summer I had it filled with Ferns, but the soil in the pots became mouldy and the fronds died off; they got plenty of ventilation every morning. Will the dry atmosphere of the room injure them? There was never any evaporation on the glass.—MOTHERWELL. [The gas and dry air would injure them. You should give them air by day, and shut them up after sprinkling them with a little tepid water before the gas is lit. Be careful how you water at this time of year.]

3744.—**Celery and Cauliflowers.**—I am having a small frame made in which it is my intention to grow early Cauliflower and Celery plants for own use, and the surplus for sale. As this will be my first attempt to manage a frame, I should be glad if you would put me in the right way.—THOMAS JACKSON. [Early in February fill the frame with stable manure and leaves, which well tread down. The frame must be nearly full after treading to allow of the material settling down. In the course of a week, put 1 in. of fine soil on the top, and sow Early London Cauliflower. Keep close until the plants are up, then give all the air possible. When large enough to handle, prick out the plants into a border of good soil where they can be protected during severe weather by a mat. Then sow in your frame Sandringham, Incomparable, Solid Red, or other good kinds of Celery. When the plants are up, prick them out in the frame 3 in. apart, and give all the air possible. Plant out in trenches when the weather is mild enough for that operation.]

3745.—**Fuchsias in Plant Case.**—I have a few Fuchsias (in a plant case projecting from the window) which I have dried off, but this last week they have started to bud again. May I re-pot and allow them to grow? or what must I do? I may add that I have a heating apparatus in the case.—MOTHERWELL. [You should prune them back slightly and re-pot, and if you can keep a temperature of 50°, they will go on all right.]

3746.—**Cucumbers and Tomatoes for Market.**—*Subscriber.*—A full account is given in Shaw's "London Market Gardens," 2s. 9d., post free from our office.

3747.—**Wintering Plants.**—Having some Polyanthuses, London Pride, &c., and my experience being that they do not survive the winter here if left in the open, how shall I preserve them?—J. HARRISON. [Lift them and pot them, and place them in a frame; they will come in well for window decoration in early spring, and may be again planted out after flowering.]

3748.—**Fellowship of Horticultural Society.**—How can a fellowship be obtained of the Royal Horticultural Society?—H. R. B. [Apply to the secretary, Royal Horticultural Society's Gardens, South Kensington.]

3749.—**Cutting Hollies.**—*S. P. A.*—You may cut your Hollies now, but it would be better to leave them till March or April. Cuttings should be put in in September or October.

3750.—**Neglected Strawberry Plants.**—*S. P. A.*—Give them a coat of rotten manure, and in July procure fresh runners, and make a new bed.

3751.—**Broad-leaved Myrtle.**—*Captain A.*—If you prune it well back in April or May it will break into fresh growth, and if this gets well ripened by the sun it will probably flower.

3752.—**Treatment of Lilies and other Bulbs.**—Ought Liliums of various kinds just received from a nurseryman to be potted at once to bloom in the summer in a greenhouse? if so, when potted what treatment will they require? Also Gladiolus bulbs for autumn flowering out-of-doors: ought they to be potted or planted? Also, whether Musk Hyacinths are valuable and rare? and whether they are very small bulbs? and what treatment do they require?—E. A. [Pot the Lilies at once in well-drained pots of sandy loam, rotten manure, and a little peat if convenient. Bury the bulbs about 2 in. below the soil, and place the pots in a cool greenhouse or frame. Do not water till growth commences, unless the soil gets very dry. If you do not fill the pots more than three-parts full of soil, you can earth up with good rich material when the pots are full of roots. Plant Gladioli in April or May. Keep them in a dry cool place till wanted. Musk Hyacinths may be planted now. They are very pretty either in the open ground or in pots. The bulbs are small and not expensive.]

3753.—**Potting Chrysanthemums.**—Is it too late to pot Chrysanthemums, or had I better let them remain in the ground until the spring?—F. E. [If the buds have not commenced to expand, you may lift the plants and pot them. Give a good watering, and syring overhead daily for a week. Place them in a cool, airy greenhouse. In spring take cuttings and grow young plants; they are much better than old ones.]

3754.—**Spiræas.**—About a month since I took up some Spiræas, potted them, and placed them in a cool greenhouse. The leaves are now turning yellow. Can you tell me the reason?—F. E. [Spiræa japonica is a deciduous plant and loses its leaves in autumn. Remove the leaves as they wither, and new ones will soon be produced.]

3755.—**Culture of Chrysanthemums.**—*E. M. H.*—Several long articles have been given on the subject in GARDENING from time to time, and doubtless before the time arrives for propagation we shall give further information. Now is a good time to visit the shows, &c., and select what kinds you require.

3756.—**Tulips in Window Box.**—I have some Tulips in a window box partly shaded by the window? ought I to water from time to time when the soil is dry? E. M. H. [Yes, when the soil gets very dry; but do not give too much till growth commences.]

3757.—**Treatment of Cinerarias and Primulas.**—I have some good plants of these, which were raised from seed in May last. Up to the present I have been nipping the blooms from the Primulas, and some of the main stems of the Cinerarias have been cut down to make them bushy. Shall I place the plants in a heated frame to bring them into bloom? I do not want to force them, but fear they will not come on right without heat. I keep them in cold frames and windows protected from frost, as I have not a greenhouse.—SAXON. [Do not stop the main shoots of the Cinerarias; you will spoil the plants. Such practice is very well with plants raised from cuttings but seedlings if well grown are usually bushy with stopping. Keep the plants in a frame from which frost is well excluded, and use fire-heat only when absolutely necessary. The Primulas want a little more heat and a drier atmosphere. Give air at every favourable opportunity, and keep the plants near the glass.]

Names of Plants.—*M. T. L.*—Anemones. We can only insert your communication as an advertisement. ——*J. H. C.*—Pearly Aloe. ——*Blackpool Subscriber.*—Apparently Convolvulus Soldanella, but cannot tell accurately from such material.——*Zara.*—We do not know the plant from the material sent.

Flower Stakes.—*R. B.*—See our advertisement, columns.

Harroviensis.—Saxifrage of some kind. Send again when in flower.

Cucumber Growing.—*D. T.*—Shaw's "London Market Gardens" would probably suit you. Price 2s 9d., post free from our office.

W. P., Lancashire.—We cannot name the bulb without seeing leaves or flowers.

India-rubber Plant.—*G. R. S.*—Ficus elastica is the botanical name of this plant.

Delphinium Belladonna.—*Amateur.*—Mr. Parker, of Tooting, mentions this kind in his catalogue.

Book on Table Decorations.—*W. J.*—"Floral Decorations for the Dwelling House," by Annie Hassard, post free, 5s. 4d. from our office.

QUERIES.

3758.—**Ferns for Miniature Fernery.**—Under the head of "Town Gardening" (Nov. 6), a few hints on the formation of rockeries, and more especially on the cultivation of Ferns under glass, are given. Will the writer of this article or any one else kindly inform me the names of the dwarf varieties distinct from the larger kinds which can be suitably arranged in such a place? and if it is intended to plant them out in suitable compost or grow them in pots? which way would answer the best? Also if any of the greenhouse varieties would thrive and stand the winter without any artificial heat? also the names of any Mosses that would do amongst the Ferns, so as to form a miniature Fernery under glass, say for a frame 4 ft. deep and 8 ft. wide?—C. B.

3759.—**Heating by Hot Air.**—I purpose carrying hot air from a chamber behind a kitchen fire to a conservatory in order to heat it. Perhaps some reader could tell me if it would be deleterious in any way to the plants, and would be likely to prove effectual.—H. B.

3760.—**Forget-me-nots for Pot Culture.**—Can any one tell me which is the best Forget-me-not for pot culture, and how best grown?—S. L.

3761.—**Wintering Hyacinthus candicans.**—Will any one tell me the best way of wintering the bulbs of Hyacinthus candicans? They are in an open border where they flowered well, and are 6 ft. high.—E. E. W.

3762.—**Climbers for Covering Trellis Work.**—I wish to cover a trellis facing south-east with creepers that would grow quickly and would be green most of the year to form a screen. I shall be obliged by any one naming suitable plants.—S. M.

3763.—**Moss and Fruit Trees.**—My Gooseberry trees, and also nearly all my other fruit trees, are covered over with a green Moss. Can any one give me a remedy?—J. J.

3764.—**Marechal Niel Rose.**—I have a Maréchal Niel Rose which was two years in the garden, where it grew pretty well, but never bloomed. I was told by a gardener that it would not bloom this far north in the open. I took it in last winter, and put it in a large pot; it has grown well this summer, but no sign of bloom; now it has done growing, as the leaves are falling off. It has three long shoots, one being 13 ft. long. Should I stop these shoots or not? They are very small and wiry for about 2 ft.—D. W.

3765.—**Brandy Mint.**—Is there such a plant or herb as Brandy Mint? If so, can any one inform me where I can get the seed of the same?—H. DYER.

3766.—**Preventing Tree Stumps from Growing.**—Will any reader kindly say by what means cut down trees may be kept from shooting again? I have tried painting them with gas tar, but without effect.—SUBSCRIBER.

3767.—**Unfruitful Walnut and Mulberry Trees.**—I have in my garden a Walnut and a Mulberry tree, the former being about fourteen years, and the latter about sixteen years old, neither of which ever produced fruit. The trees leaf well, and appear quite healthy. I need hardly say the climate of Queenstown is very mild, and one would imagine such trees should do well here. Perhaps some reader could kindly give me a hint as to treatment.—W. C. S.

3768.—**Uses of Logwood.**—Having a quantity of logwood and fastic which has been used for dyeing purposes, I should be glad to know if I could turn it to any use in the garden.—J. T. M.

3769.—**Cockscombs in Dwelling-houses.**—Could Cockscombs and the Sensitive Plant be raised from seed in a dwelling-house? if so, will some reader kindly give me instruction how to proceed?—W. S.

3770.—**Anemones.**—I wish to plant some Anemones. Last year my bulbs were quite a failure. Will any reader give me directions as to time of planting, treatment, &c.? Mine is a garden now considerably surrounded by houses, though with very open ground just beyond; south of London, tolerably sunny; soil fairly rich, well drained loam, not very stiff.—ANEMONE.

3771.—**Rustic Work.**—Will some reader kindly inform me what glue and cement is used in making rustic vases, &c., that will resist damp, and the probable cost per lb. of same? Also would a coating of pitch or coal tar inside vases injure the roots of plants? I have seen vases in virgin cork finished off with a kind of plaster, coloured, and varnished. What plaster and varnish is used? and are the colours mixed up with oil or water?—W. S.

3772.—**Roses in Pots.**—I have Gloire de Dijon, Maréchal Niel, Dr. Andry, John Hopper, Fisher Holmes Roses on their own roots, or budded very low. They are as bushes now out-of-doors, where they have been since midsummer. What is the next thing to be done to them? I thought of bringing Maréchal Niel into a little heat to start it on; is that right? If so, what is to be done to it first as to pruning, repotting, top-dressing, &c.?—A. B. T.

3773.—**Cropping a Garden.**—Having taken a piece of Grass land, 50 yards by 18 yards, which I am now digging up for garden purposes, about one-fourth for flowers, the other for vegetables, I should be glad if any reader would give me a list of the best kind of flowers to cut for bouquets for next spring and summer. Also, I should be glad of a little instruction with regard to the vegetable portion, as I am a new beginner; as my income is small, I thought I might increase it by means of the garden, having about three or four days per week at my disposal.—HOPEFUL.

3774.—**Passiflora cœrulea.**—I have one of these in a 6-in. pot, trained in a sitting-room window. It is now about 6 ft. high—only one long stem. How has it to be treated? Must it remain in its present pot? and should it be cut down or not?—J. C., *Whitley.*

3775.—**Lilium Washingtonianum.**—I have a bulb of this Lily which I purchased last month. I have planted it in a 6-in. pot, using a soil composed of good fibry loam, with some sand, peat, and leaf-mould added. The pot has been placed in a cold frame. Messrs. Barr & Sugden's catalogue says: "Washingtonianum comes from a very high elevation, where the summer is short and hot and the winter severe." From this I would infer that the pot containing the bulb would be best out-of-doors in the snow and frost. Will some reader kindly advise me as to its treatment?—SAXON.

HOW TO CONSTRUCT A SELF-ACTING FOUNTAIN FOR THE AQUARIUM.

A FOUNTAIN is indeed a very pretty and pleasing feature in connection with the aquarium, or in a window garden, Fern case, or rockery, always being agreeable to the eye, and suggestive of coolness in hot weather. There are many and varied ways of constructing it, but if the work be entrusted to one whose trade is partly in connection with such operations the cost becomes far more than is the case when a fountain is made by one's self with simple materials. A fountain constructed in the following manner has worked so successfully, and with so trifling a trouble, that many readers of GARDENING may like to know how it was done. I must not forget to mention, however, that it is fitted up in close proximity to the tank which is supplied with water for household purposes, so that a good supply is always at hand and easy of access, and unless anyone who may be inclined to construct one after my directions have this advantage more difficulty will be found in making it purely self-acting. I procured an arrowroot tin (a large biscuit tin answers quite as well) and a penny tin funnel; in the bottom of the arrowroot tin I cut a round hole, a ¼ in. smaller than the wide end of the funnel, and soldered this latter article over the hole, making it perfectly water-tight. The small end of the funnel just takes ¼ in. lead pipe, one end of which is inserted and soldered in it, and carried to the middle of the fish tank described on page 241, No. 70, of GARDENING, the other end running up the centre of a conical-shaped piece of work composed of Virgin cork, which is fastened by good Portland cement to an oblong square stone, 2 in. in thickness, and which is covered with pieces of coke, shells, cinders, and broken brick, all cemented together as rustically as possible, and which prevents the cork from rising. The end of the pipe running up the centre is on a level with the edge of the conical rockwork, the top of which is 2½ in. from the water's surface. A tight-fitting cap is placed on this end of the pipe. with one, two, or more (as may be desired) finely-drilled holes, thus forming the jets. The entire length of the supply pipe and the height of the tank depends, of course, upon the altitude it is desired the jet should reach, as, with a very fine single one, water will almost if not quite find its own level when the tank is full, the weight of water being considerable. But if a small brass tap is soldered in the pipe at some convenient place the height to which the water may be thrown can be regulated at will.

Whatever the fountain is fitted to there must be a waste pipe. As I mentioned before, the tank made in the manner described is fitted up close to that which is filled every day from the waterworks, therefore no difficulty is experienced in keeping my own filled continually, which is done with a syphon, the large pipe of which is ¾ in., and the small one ¼ in. One end of the pipe is let down into the tank to within 3 in. of the bottom, a small piece of perforated zinc being attached to prevent anything going up the pipe and stopping the flow of water, and the other end is pinched up to the same size as the fountain jet; it is bent over the wall and conducted to my own supply tank 1 in. below the top, and turned in slightly, so that when the air is drawn out and the water enters this syphon it can scarcely be heard running, neither does it come in at any greater speed than it passes out at the jet. The smaller pipe of the syphon is sufficiently long to enable me to reach its end with ease, and by first filling the small tank and then drawing the water through the syphon the supply is continual. A small water-tight cap fits on the end of the small syphon pipe. By blowing vigorously into the syphon the water ceases to run in directly it is heard to bubble.

Thus it will be seen that this fountain can be entirely self-acting as long as the water in the larger cistern reaches the syphon and is once set at work. But it must be remembered that the smaller reservoir must be lower in position than the larger, otherwise it will be impossible to get the water to run in satisfactorily. My own fountain fitted up in this way will play day and night for a whole week, or as long as desired, and does not cause the slightest trouble in any way, and the expense has only been a few shillings. But for those who are not provided with a supply of water close at hand it may be more difficult to erect one which will work with as little inconvenience. I have made these instructions as plain as possible in the hope that amateurs may try the experiment, as, being in no way complicated, the materials are easily obtained, and the working simple enough. To anyone not able to fully understand these matters I shall be pleased to give further information.

NEWT.

BEES.

Feeding Bees.—The old axiom that there is wisdom in a multiplicity of counsellors does not seem to apply to advice relating to bees. What must "A Weaver" think when he finds "Bar Frame" advising him to feed bees now, and "Apiary" that he should not feed until March next. This really is absurd advice, for the poor bees if short of food may all die in the meantime. It is wisest to feed now; during the present open weather the bees are all active, and not only want food, but if not fed will be consuming what honey they may have stored, for the past season has not been a good one for honey gathering, although much better than last year was. But "Bar Frame's" advice to feed so that only one bee at a time can be fed is really too ridiculous. If in a strong stack there are 10,000 insects, what chance have all the rest when only one bee at a time can get food. In feeding now and for the past few weeks with pure loaf-sugar syrup, I use broad-mouth pickle bottles, and tie over these pieces of clean fine muslin, twice or thrice folded. Through this the syrup percolates steadily and certainly, and quite 25 to 30 bees can feed at once. The bottles need re-filling every third or fourth day. With plenty of food in the hive the insects are not only safe from hunger, but are also more fully protected from cold, as the full comb admits the presence of less air than an empty comb does, besides presenting greater obstruction to the action of external cold. It is not well to promote artificial heat, but it is good to afford the hives shelter from cold and rain. This done, and with a good store of food, there is little doubt but that next spring the insects will give a good account of themselves, and repay in strong swarms the aid given them now.—A. D.

POULTRY.

Fowl Keeping in Small Spaces.—I have read with much interest "T. F.'s" communication on this subject in GARDENING, October 30, and as I keep both sorts, dark Brahmas and Cochins, can fully endorse his remarks on their dirty habits and perpetual tendency to set. I have also had some experience with Hamburghs, though not at my present residence, and judged they were the least able of any to bear confinement, requiring a grass run and plenty of it, and the most liable to that curse of the poultry yard—roup. I intend getting rid of my present stock, and thought of giving the Dorking a trial, but should much prefer the non-setting kind, as that would better meet my requirements. Can "T. F." give me any further information on the subject? The space at my command is an irregular piece fenced off at the bottom of my garden, 40 ft. long, 22 ft. at the wider end, diminishing to 10 ft. at the narrower and lower end; there is a fall of about 18 in. in the whole length, and the house and sheltered run occupy the upper side, the other three being enclosed by a fence about 5 ft. high. The whole surface has been dug up and asphalted, so that all rain and water runs off quickly. I have a pit sunk on one side in which is put dead leaves, grass cuttings, and other garden refuse; and also a dust and broken brick and mortar heap. Would the black Hamburghs thrive in such a place? and would they not readily fly over the fence, even with one wing cut? are they hardier than the gold and silver-pencilled varieties? and where is the best place to obtain them?—J. B. M.

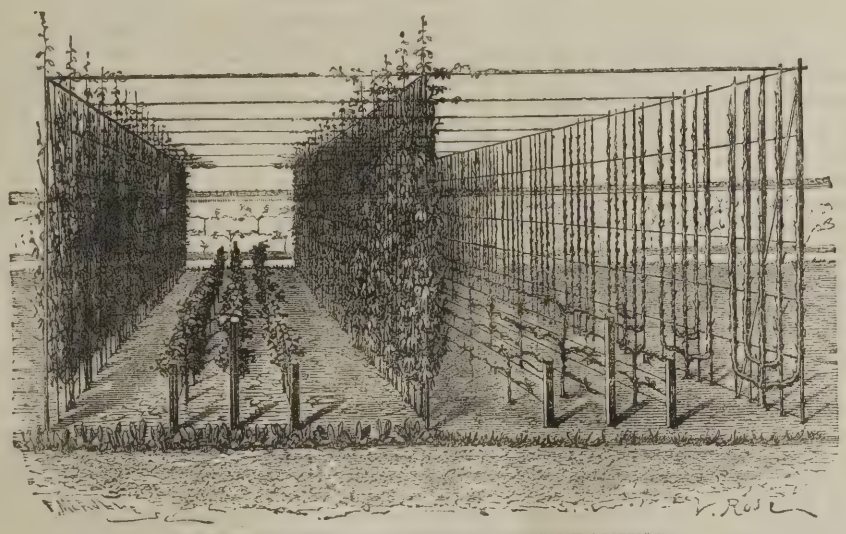
Moorhen (Gallinula chloropus) in Gardens.—Will any of your readers inform me how I can catch these birds? and what food I am to give them to draw them to my traps? or whatever other means may be devised for their capture? Should you not like to answer this in your journal, as I know the birds are favourites with many people, perhaps some of your correspondents will answer me by private letter.—C. THURNALL, *Whittlesford, near Cambridge.*

GARDENING ILLUSTRATED.

VOL. II.—No. 91. *SATURDAY, DECEMBER* 4 1880. PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

IMPROVED FRUIT TREE TRAINING.

FRUIT culture being now so important a matter, any way of planting which combines economy with efficiency will, doubtless, be readily adopted by fruit growers. Our illustration represents a method of planting and training fruit trees which anyone possessing a fair-sized garden might copy with advantage. The trees are, as will be seen, trained to a light trellis, the supports of which are of T iron, placed at intervals of about 20 ft. Along these supports are fastened horizontal wires, 2 ft. apart, the trellis being about 10 ft. high. These trellises are placed about 12 ft. apart, or, if the trees are trained higher than 10 ft., more width must be allowed. A good guide in this respect will be to always plant a little wider apart than the height of the trellis, so that one row of trees will not shade the other. Strong wires are strained across the tops of the trellises to hold them together. The trees are planted 3 ft. or 4 ft. apart, and each tree has 5 branches trained upwards by means of willows or deal sticks, which are removed when the branches have reached the top of the trellis, ample support being then afforded by the horizontal wires. Our illustration on page 473 shows the details of the plan on which the trellis is constructed. In order to economise space, Dwarf Cordon Apples on the Paradise Stock are planted between the rows of Espaliers, and between the Cordons might be planted early Strawberries, or similar crops. The advantages of this plan of training are—first, the trellises are cheaply made and durable, giving no further trouble after being once erected; second, the trees, by being trained in an upright direction, will cover the trellis in three years if good trees be secured and well planted at starting; third, a large quantity of the best market Pears may be grown in a small space, and the Cordon Apples will also yield heavy crops of fine fruit. In regard to soil and planting, we have so recently given long articles on the subject that it is unnecessary to refer to it here, and last week we gave an engraving of Pear trees for high walls, with notes on their culture. The remarks there made are equally applicable to the requirements of the form of tree now under notice. It may, however, be well to give a short list of the best market Pears, as these, as a rule, are the most useful kinds to grow, even for home consumption. Among early market Pears ripe in July and August may be mentioned, Beurré de l'Assomption, a large-sized, lemon-yellow kind; Williams' Bon Chrétien, and Madame Treyve. These are succeeded by Citrôn des Carmes, a medium-sized fruit and an abundant bearer; Belle et Bonne, Beurré d'Amanlis, Beurré Superfin, Fondante d'Automne, Gratioli of Jersey, Hazel, Louise Bonne of Jersey, Marie Louise d'Uccle, Autumn Nelis, and Seckle. These keep up a supply till the end of October, after which come into use until Christmas, Vicar of Winkfield, Winter Nelis, Napoleon, Marie Louise, Duchesse d'Angoulême, Doyenné du Comice, Althorp Crassane, Colmar d'Aremberg, Bishop's Thumb, Beurré Léon le Clerc, Beurré Hardy, Beurré de Capiaumont, Beurré Clairgeau, Beurré Bosc, and Beurré Bachelier. Amongst kinds which come into use after the new year has set in may be named Bergamotte de Esperen, Glout Morceau, Knight's Monarch, and Easter Beurré. Many other kinds are also grown for market, but these form the chief supply. The Pitmaston is a new Pear of large size which has lately been grown for market. In flavour it resembles Marie Louise, but as a market Pear it is inferior to that kind. It comes into use during October and November.



IMPROVED ESPALIER FRUIT TREE TRAINING.
Trellis 10ft. high, with supports of T iron and horizontal lines of galvanised wire.
Cordon Apple Trees on Paradise Stock between Espaliers.

Large Pears.—Several persons have sent you accounts of their Pears; let me give you mine. I gathered a short time back 18 Catillac Pears, the united weights of which amounted to 18½ lbs. Of these, the heaviest weighed, respectively, 1 lb. 9½ oz., 1 lb. 4¼ oz., 1 lb. 3½ oz., 1 lb. 2½ oz., and 1 lb. 2 oz. There is no better baking Pear than the Catillac. —H. G. M., *Michelmersh Rectory.*

How to Keep Apples during the Winter.—Mr. Sidney Ford, of The Gardens, Leonardslee, Horsham, is in the habit of sending to the meetings of the Royal Horticultural Society at South Kensington during the months of March and April, collections of Apples, both dessert and culinary, so well kept as to lead one to wonder how it is the fruit look as fresh and plump in spring as in October and November. Mr. Ford's method is both simple and efficacious. He may be said to commence by thoroughly cleansing his fruit room each year shortly before the Apples have to be placed in it, giving the walls a good coating of whitewash, and thoroughly cleaning the shelves. Then he is very careful that each sort is quite ready for picking when the gathering takes place. The fruit is stored when it is quite dry, and handled with the greatest care. On the shelves the fruit is placed in two layers, and no straw is used. Plenty of air is kept in by night as well as by day, and the ventilators are closed only when hard frost threatens. Mr. Ford is a great believer in keeping his fruit room thoroughly airy, and as cool as possible; and we are bound to state we have known warm, close fruit rooms, in which the fruit kept very indifferently indeed. Indeed, Mr. Ford's plan may be said to be free from any "coddling" processes; at the same time, handling the fruit is resorted to only when absolutely necessary. Gentle handling is a matter of much more importance in keeping fruit than many imagine. Pears are managed in the same way as Apples, and they also keep wonderfully well. Though the Apple crop proved this year better generally than it has for a few years past, many good standard sorts are scarce, and commanding good prices. When fruit is scarce every precaution should be taken to preserve it as long as possible, and in the belief that the foregoing rules may be of service just now, they are set down.—R. D.

Pruning Fruit Bushes.—The plan of cutting the young wood of Gooseberries and Currants close in to the main shoots, and leaving nothing but a few young spurs, is the mode of pruning most commonly practised, but it is questionable whether or not this is the best way of pruning to secure fine crops. I have tried bushes side by side pruned in this way, and otners in which was left a good quantity of young wood, and the latter invariably bore the best crops, both as regards quantity and quality. Cutting most of the young wood off limits the fruit-bearing proportions of a tree very much, and I could name a good many instances

in which aged bushes were killed altogether by annually persisting in cutting away all the young wood. The worst and common way of pruning bush fruits is to cut in all the side shoots to one eye or two from the old wood, and finish off by cutting the leading or top shoot some 2 in. long. The best and most fruit is produced by the few young buds that are left, and anyone may understand that to leave more young buds would be a certain means of ensuring more fruit. Besides, to keep up the strength of a bush or tree, it is necessary that young wood should be allowed to develop itself in some way or other, but, as a rule, this is not taken into consideration. I have said that close cutting in is the worst way of pruning. Now, I consider the best way to be never to leave the wood too close together; leave the young shoots at least 4 in. long, and the top or leading shoot 10 in. or 12 in. long. Cut out some of the old branches every year, and allow one or two of the strongest of the young ones to take their places. Let those interested in the matter try this plan, and observe the result. The finest crops of Gooseberries and Currants which I have ever seen were growing in a garden not far from where I now am. The bushes had been allowed to grow so freely that they were in the form of small trees; the branches were not crowded, and the fine, large fruit was hanging in closely-packed rows and clusters, some 6 ft. in length. I am strongly of opinion that where the close cutting in of Apple and Pear trees is practised, as it is in many places, it is as injurious to the trees in the way of producing canker and other diseases and short crops as it is in the case of Gooseberries and Currants.—Amateur.

PLUMS AND APRICOTS.

In districts where the Apricot generally fails on the open wall it may often be seen flourishing against the gable end of a warmly-situated cottage or farm-house. The chief drawbacks to the successful cultivation of Apricots are unsuitable soil and an unfavourable climate—the latter usually exercising more influence than the former. But soil that is unsuitable may in a limited space be modified and altered in character at a trifling expense, while climate may, to a certain extent, be ameliorated by shelter and selection of the most favourable sites for planting. The walls of any dwelling or stable are more warmly situated, and consequently enjoy a better climate than most garden walls, especially where the latter are of a considerable length, with no arrangement, either temporary or otherwise, to counteract the effects of the keen cold currents that rush along their sides.

Planting.—In planting Apricots or other fruit trees against either cottages or farm buildings the soil should first be thoroughly broken up at least 6 ft. in width from the wall, and 2 ft. deep. If of fairly good quality, that is, neither clay nor sand, nor one in which either predominate to an injurious extent, and if the subsoil be dry, which in most cases it would be close to a dwelling-house, the trees may be safely planted without any addition whatever; and the fact of the soil having been previously unoccupied by fruit trees will make their early growth rapid and vigorous. On very retentive soils, in order to ensure the health and fruitfulness of the tree, it will be better to be content with a shallower border, and that might be raised 6 in. or so above the ordinary ground-level. Concrete 4 in. in depth should be placed over the bottom of the hole, resting on the firm, unmoved subsoil, to keep the roots from penetrating it, and to compel them to take a horizontal direction. Some efforts should be made to renew a portion of the soil where it is bad, and there is scarcely a place where a few barrowfuls of fresh turfy soil may not be had if looked sharply after. Whilst speaking of shallow borders, I may say whoever adopts them should see that the trees do not suffer from drought in a dry season. The necessity for this has often been overlooked, and the trees have become stunted and starved without the cause being suspected. No doubt deep rooting, even on good soils, is a disadvantage in some respects, for the nearer the roots are to the surface the more manageable is the tree.

Mulching and Watering must not, however, be neglected, more especially when the trees are heavily cropped. It need hardly be stated that as water enters largely into the composition of all fruits, unless it is freely given in hot summers, the fruit must be small. It is the same with cultivated fruits as with domesticated animals; when in a wild state they can cater for themselves, but under more artificial conditions and circumstances their wants must be provided for.

Training.—The best form of training for all stone fruits is what is commonly termed the fan shape, and although we may take it as a general principle that the less the knife be applied to Apricots the better, still the tree must be headed back in its early stages to insure the necessary breaks for clothing the bottom; if this be not done the bottom of the wall will always remain indifferently furnished. Experience has proved that a good deal may be accomplished in training by keeping the middle of the tree always open, thus diverting the sap as much as possible to the lower limbs.

Top-dressing.—Often where Apricot and other stone fruit trees have been indifferently progressing, a dressing of lime and soot over the borders and lightly forked in has been found of great service to them. Lime rubble from old buildings might with advantage be mixed with the soil in planting young trees of Apricots, Peaches, and Plums, as these fruits do best in a calcareous soil, and soot is a stimulant especially invigorating and suitable without encouraging grossness of habit. It is also a very good remedy for nearly all insect pests, and may either be mixed with soft water, and syringed over the trees, or the trees may be dusted with it in dull, showery weather. Of course this mode of application is not suitable after the fruit has reached a good size. But if insects be well kept down in spring, as they ought to be, there will be no necessity for using it afterwards.

Pruning.—There are two main principles adopted by different cultivators in pruning and training the Apricot, Peach, and Plum with a view to fruitfulness: One is to rely chiefly or wholly upon young wood laid in annually, and to disbud or remove all foreright shoots when only 1 in. or 2 in. long; and the other, whilst not ignoring the expediency and the necessity for laying in young wood wherever there is room, consists in taking the chief crop from spurs growing on the front of the branches which have been encouraged to develop themselves by the system of pinching and pruning adopted. The latter is the plan most generally practised, and will, I think, be found most suitable for those who have not had the advantage of a special training in fruit culture. Whether it be on artificial or natural spurs, we have all one object in view, viz., to secure a crop of fruit, and that system that gives us the best chance of success with the least trouble must be undoubtedly the right one to adopt. But in either case the necessity for disbudding exists, and ought to be carefully attended to. Where the crop is taken indiscriminately from spurs, both on the young and old branches, the disbudding in spring should be limited to thinning out the young shoots that push in profusion all over the tree. This should be done when the shoots are an inch or so long, when they can easily be rubbed off with the thumb and finger without running any risk of leaving any permanent wound in the bark of the branch; pinching or summer pruning will afterwards be an important item in successful management.

Plums.—There is scarcely any fruit so accommodating as to soil or situation as the Plum, and not only has it these advantages, but if the fruit be thinned out when the trees are overloaded, and only known good and prolific kinds planted, it is a profitable crop to grow. The Plum tree is not so long-lived as the Apple or Pear, but it comes sooner into bearing. The wind is often destructive to old standard trees, for as age creeps on them the branches become more brittle. When this is the case if the main trunk be healthy, I have often seen new life and vigour infused into old trees by heading them down, as they break readily out of the old wood. If this heading-down process be extended over two or three years, the trees will scarcely feel the check, and the gradual thinning will prevent the total loss of the crop, as the young wood on an old tree commences bearing immediately. But dwarf trees are the best to plant in small gardens; they bear well when trained in the bush or pyramidal form, and small or moderate-sized trees are easily protected when large trees must take their chance. So far as profit is concerned, I believe a plantation of Victoria Plums will yield a larger return for the outlay than any other crop, but for home consumption it will be advisable to add a few other kinds in order to extend the season of bearing. As wall trees, Plums will grow and bear well on any aspect, and it often happens that trees on a north aspect will bear abundantly when those on other aspects fail; this is due in some measure to late blooming, and also to the gradual rise of temperature on a north aspect after a cold, frosty night in spring. The sun does as much harm as frost if its rays fall on a frost-smitten tree early in the morning, and it is in the shade imparted by a thin flimsy covering warding off the sun's rays in the early morning that a crop has been saved as much as by the protection afforded from frost. The pruning, training, and summer management of the Plum so much resemble those already given for the Apricot, that I need not refer to them again. H. B.

VEGETABLES.

Magnum Bonum and Champion Potatoes.—Much having been said about the relative merits of these kinds of potatoes, may I be allowed to state my experience? I have grown them on both light and heavy soils. Champions produced about 16 lb. for every 1 lb. of seed planted, and 15 per cent. of these were diseased, besides many ugly, hollow, and unfit for use. Magnum Bonum produced 28 lb. for every 1 lb. of seed, and planted on the same ground as Champions—viz., very light and good soil, and not one ugly or diseased tuber in the whole lot. This was remarkable, for from 60 lb. of seed I lifted 1680 lb. of the best-formed and best-cooking potatoes I ever saw, and this from 260 square yards of ground. The same result has followed from stiff soil, so that I consider Magnum Bonum is better formed, a heavier cropper, and better cooking potato than Champions and ripens quite a month earlier, which is another point in its favour.—G. Jones.

Tomatoes Out-doors. — Seeing in Gardening Illustrated of Nov. 13, 1880, the account of out-door Tomatoes having the disease, I thought it would be of interest to the readers to know that last year I planted out about a dozen plants of Tomatoes on a warm border, when just before the fruit ripened they all went off with the disease. I thought I would plant again this year, so I planted just in the same place, and a nicer sample of Tomatoes one would not wish to see. Not one single Tomato took the disease. I also planted some out in the open garden, which I trained to some lattice-work, which fruited better than those on the wall. From the first week in August up to the second week in November I had a good supply of fruit. The sort I have grown are Hathaway's Excelsior Large Red and Large Yellow. I find the two latter kinds are the best for out-doors. —T. H., *Tonbridge*.

Forcing Rhubarb and Seakale.—At this season of the year, when the forcing of such vegetables as these is occupying attention, it cannot be too strongly urged that many are deterred from attempting so simple an operation by the supposed difficulties of the undertaking, whereas both may be successfully forced in positions that cannot be otherwise utilised. Wherever boilers are fixed for heating hothouses, or buildings of any kind, there is, as a rule some of the main pipes that must of necessity pass through positions where their heat is not required; all that is necessary is to make up a rough box of the desired size, and plunge the roots in light soil, covering the crowns with dry leaves, fern, &c., and laying over the whole a lid to exclude light; keep the soil moist, and regulate the heat by raising or lowering the box, and as good a supply of Seakale and Rhubarb may be obtained by such simple means as from the most elaborately-finished structure built specially for the purpose.—G.

Hotbed for Seakale.—A slight hotbed, should now be made up for growing Seakale where this is wanted by the end of the year. If it is made of leaves alone, all the better, as

these are not liable to get too hot, in the way that stable manure frequently does. Make it about 2 ft. 6 in. in thickness; it may be soiled at once, and the crowns put in 6 in. apart. Any ordinary garden soil, or old potting material, will do, keeping it fairly moist, but not too wet. A small garden frame will answer to place on the top, covering it with boards or shutters, so as to keep the inside quite dark, which is better than using the glazed lights, as it would be necessary to put over them mats or litter, which in a wet state naturally cause decay.

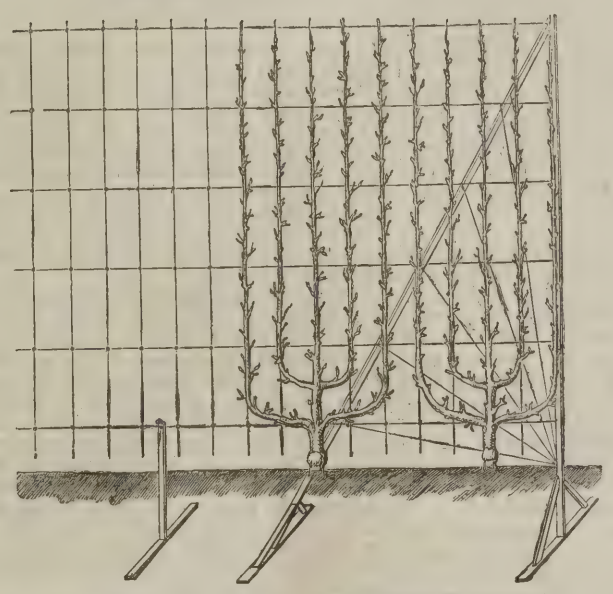
Storing Roots.—For many years the plan of keeping Carrots here was taking them to a cellar or outhouse and building them up; with every layer of Carrots was put a layer of sand, which kept them fairly well until about Christmas; but after that date they were always far from being satisfactory. My practice now is never to put more than two ordinary barrow-loads together, building them outside, head outwards, and covering them with straw and soil. We are now using Carrots taken up in October just as fresh and good as when taken up, and they will keep so until the end of May. These Carrots are used before the growing ones, which we always sow in July, and pull from the beds all the winter. The latter are much sought after, being mild, tender, and delicious. In order to keep Onions sound and free from growing, we tie them up in small hand bunches, and hang them in a draughty passage, where they are always cold. In this way we find them to keep perfectly sound and good. Parsnips we leave in the land until they begin to grow, when we lift and store them as we do Carrots for late spring use. Beetroots should be lifted before the frost touches them, and stored precisely in the same way. An advantage belonging to this plan is, that it takes up no shed-room, which at all times is useful, particularly in winter, for storing Lettuces, Broccoli, and many other things.—R. G.

Grafting Potatoes.—I was glad to see in Gardening the answer of "A. D." on "Grafting Potatoes," with which I quite agree so far as that no tangible results follow as to its effect on the tubers. If you graft on the stem of a Potato successfully I believe that you may alter the character of the plum or fruit, and that the seeds raised from the plum may be acted upon by the grafting, and in perhaps a decided manner if you can prevent the flowers from being impregnated by bees and insects, but I cannot see how it can affect the tubers on the stocks or plant grafted upon. If you graft a choice Apple on the wild Crab or the Quince it no doubt may, and does, affect the productiveness, quality, and flower of the fruit, but it does not affect the roots of the stock; destroy the scion and allow the stock to grow, and it will only produce wild Crabs. It was also stated by one of the witnesses before the committee that a variety of Potato may be improved by the selection of tubers. I much doubt whether this is the fact, except so far as this, that you may expect healthier tubers to be produced from sound sets than from unsound sets, but it will not affect the form or character of the Potato.—Querist.

A Cottager's Experience of Potatoes.—In Gardening Illustrated "Burns" gives his experience in Potato growing in the north this season. I will give mine in the midlands. I have grown this year Early Hammersmith, Ashleaf, Early and Late Rose, Schoolmaster, International and Woodstock Kidney, Magnum Bonum, and Champion. The first five sorts were bad, International and Woodstock Kidneys very bad; Magnum and Champion good, and they both cook well indeed. Of International and Woodstock I planted one peck of each, and I have a little more than my seed again. The International were a fine crop if they had been good, but I picked a sample to exhibit, and took first prize with them at our district show.—T. S.

Forming a Lawn.—In the formation of a croquet ground or a lawn it is necessary that the ground should be removed to a uniform depth, and if it is not it is indispensable that the soil in every hole should be properly rammed until it is brought to the proper surface level. In this manner the turf may have a smooth and proper foundation, and without that it is a waste of time to lay the turf at all. Soils differ much in the amount of compression which they require. Land free from vegetable matter will, after a good soaking rain, go together so closely as to need but little further compression, but fresh soil full of fibre will rot and settle for years if it is not thoroughly consolidated at the commencement of the work. Loamy soils can easily be properly handled when they are dry. If you attempt to ram them when they are wet you will form a plastic mass through which the rain will pass with difficulty, and hence the surface will always be damp and mossy, but if you ram such a soil when it is in a comparatively dry state, you may make it solid, and yet the interstices between the particles of soil will be sufficient to allow the surface water to escape with facility. In relation to new groundwork a gentleman remarked the other day: "If that work had been done by the day I should have considered I was being most shamefully robbed, but now I see that the care you insist upon is necessary, and that the work is being executed in the best possible manner."—J. S.

Indian Corn.—I think we might add to our garden productions the small variety of Indian corn (or maize). I sowed two small rows about the 20th of April last in a warm situation in the garden, and this autumn, when fully



Improved Espalier Training—showing Details of Trellis-work
(See Front Page).

grown, and before the corn became hard, I gathered some nice ears, which, when stripped of their envelope of leaves, I told the cook to nicely toast at the fire, spread a little butter on them, and send to table. They met with such a favourable reception that a further supply was requested. That Indian Corn was esteemed in ancient times we find by its being chosen as one of the first fruits the children of Israel were to offer, as we also learn their mode of preparation was with oil and frankincense. We substitute butter for the oil and dispense with the latter.—W. T. Smart.

Precautions against Slugs, Snails, and Worms.—When putting out young plants in showery weather, some sifted ashes scattered over the surface of the beds will make travelling most uncomfortable for any soft-skinned animal. Lime and soot are also distasteful to them, but the first shower not only neutralises their effect, but they have a tendency to clog up the pores, so to speak, of the surface soil; sifted ashes, on the contrary, keep the surface loose and friable, and attract and absorb what little warmth there is in the sun's rays at this season. A very light sprinkling is sufficient, and the effect is permanent. Some object to the use of ashes, but for heavy soils their application in the way just described is very beneficial, and, what is more, they can be obtained in most places for almost nothing.—H.

Manures and their Application.—The management of the manure-heap has a most important bearing upon profitable culture. All perishable substances have a certain manurial value, some for their mechanical effects, others for their stimulating properties. For heavy land, ashes, lime, soot, and sand are exceedingly valuable; in like manner clay and marl may be profitably applied in considerable quantities to light land. It is best applied in the winter after the land has been trenched, left exposed all the winter to pulverise, and lightly forked in in spring before the land is cropped. A good dressing of clay is supposed to be beneficial for about ten years. The persevering, thoughtful cultivator will store up every bit of waste matter for his manure-heap, and it is altogether impossible to make a mistake in this respect, as everything that will readily decay may be added to the heap, and in proportion as the manures accumulate and are given to the land so will the crops improve. The manure-heap should be formed in a hollow or pit near the pig-sty, where everything that comes off the land or that can be gathered from the ditches or roads in the neighbourhood should be conveyed. When fermentation takes place, if any bad smell arise scatter dry earth over it; this will arrest and absorb any effluvia or gas that may escape from the heap, as well as add to its bulk and value. I am assuming that every cottager who can do so will keep a pig, for the double purpose of eating up all waste vegetables and making manure. Liquid manure is especially useful for any crop that requires a concentrated stimulant, as it can be given just at the time it is required, and in the winter, if of no other use, it can be applied to stunted old fruit trees, taking the spread of their roots as a guide. Some years ago I treated some old Apple trees in this way several times during the winter, and the effect, as demonstrated by the produce, was marvellous. Asparagus beds, old Raspberry plantations, or old Gooseberry bushes would be much benefited by an application of liquid manure at any time when it is not required for other crops. In small gardens the pig-sty can easily be screened by planting a row or two of pyramidal Pears or other fruit trees around it. The old idea of resting or fallowing land is now well-nigh exploded, experience having taught us that by the application of suitable manures—that is, by returning to the land as far as possible the same substances that have been taken from it—the earth is practically inexhaustible; hence, there is a manifest advantage in collecting the manure from as many sources as possible for the successful development of all kinds of vegetables, and special attention should be paid to the gathering in of what is usually called rubbish. All substances that do not readily decay, such as hedge clippings, prunings, &c., should be placed by themselves, and be occasionally charred as the heap accumulates. This can be done by setting fire to it on some dry day; when well alight place over it any other rubbish, such as weeds, &c., not too heavily at first, and gradually enclose the heap all round, so that the heat of the fire is confined within it. As the fire dies out the whole will crumble down into a black charred mass, which, when passed through a sieve to take out stones or rough pieces, will make a valuable compost for Onions, Turnips, or Potatoes, or for covering any small seeds in cold, heavy soils.

If stored away in a dry place it will be found very useful in the winter for dusting over young plants of the Brassica family, Lettuces, &c. Salt is a valuable fertiliser, especially for dry, porous soils, and deserves to be more extensively used. Artificial manures are not much used in small gardens, but where

there is a scarcity of other manures, and even where other fertilisers are plentiful, a slight sprinkling of guano or superphosphate will often push a young crop through a critical period with safety. On some soils phosphates are more beneficial than ammoniacal manures. This will be found more especially the case when applied to old gardens, in which the soil has become rich from frequent manurings, but deficient in lime.

Tritonia aurea as a Border Plant.—I have had this bulb in the open ground for the last three or four years, and have never noticed the shoots to suffer in the least from frost. The clumps grow stronger each year and flower more profusely, and they get no attention beyond what I give to the border in general. They are planted in a corner facing south and east, where they get the full benefit of all sunshine until between 2 and 3 p.m. I think they kept in flower this year for quite a couple of months. I have not found them to stray very much. They are planted at the foot of a sweet-scented Clematis.—F. J., *Middlesex.*

The Golden Chickweed in Winter.—In addition to this Chickweed (Stellaria graminea aurea) being one of the most useful yellow carpet plants in summer which we possess, it may also be made to form a dense thick mass of bright golden leaves in autumn and winter. I once noticed a large patch of it in a London nursery, which had been left undisturbed for years, as bright as I ever saw it in summer. This result is effected by allowing the plants to produce seeds early in autumn, and then cutting them down close to the ground—an operation which causes them to break afresh from the bottom and form a golden-yellow, close carpet in winter. Where hardy shrubs are employed for filling up flower beds in winter, this chickweed would form an excellent undergrowth.—S.

The Striped Dead Nettle (Lamium striatum).—This plant almost merits the designation of perpetual flowerer; indeed, I have known it to be in flower the whole year through, but that was when the winter was exceptionally mild. Its beauty, however, lies rather in the variegation of the leaf than in the flower. Early in spring, and even in the depth of winter, if the weather be not too inclement, the variegation is beautifully marked. It is just one of those plants which, if instead of being extremely easy of culture demanded heat and great care, would be much prized.—J.

Wintering Dahlias.—We never take up Dahlias in winter. When cut down by frost, they are covered with coal ashes, and in April they are taken up and planted on a hot-bed with no glass over it. When the shoots are about 6 in. high, the roots are divided, and only one shoot planted in each place, prepared for it by being dug, two shovelfuls of manure being added to the soil for each Dahlia.—C. M.

Crimson China Rose.—This, planted in front of shrubbery borders or herbaceous beds, and kept pegged low, is invaluable at this time for cutting. We have only a small line of it, but we get a handful of Roses from it every other morning. The blooms, though not large, are brilliant in colour. It requires little attention after being started.—A. H., *Nottingham.*

Tropæolum tuberosum.—This is very effective in autumn, when planted so as to climb through spring-flowering and other shrubs, such as Pyrus japonica, Ribes, &c., if in a sunny position. If planted rather thickly, near the edge of a clump of Rhododendrons, it looks like a bank of orange and red flowers, till they are cut down by frost. This Tropæolum is quite hardy here; the tubers are taken up, divided, and replanted in spring, and require no further trouble.—C. M., *Dublin.*

Speedwells for the Window.—I saw in Lambeth, a few days ago, in a locality, dingy, smoky, and dirty, the Blue Gem Speedwell (Veronica) on a window-sill. It was in good bloom, and promised to continue so for some time. It is probable that the Veronicas of this type are peculiarly fitted for window purposes, as they are very hardy, and flower at a time when other plants are at rest. I have now in bloom seedlings of the pretty pale variety, and few plants could furnish more useful sprays for dressing epergnes at this time of the year than this Veronica.—A.

CULTURE OF ALSTRŒMERIAS.

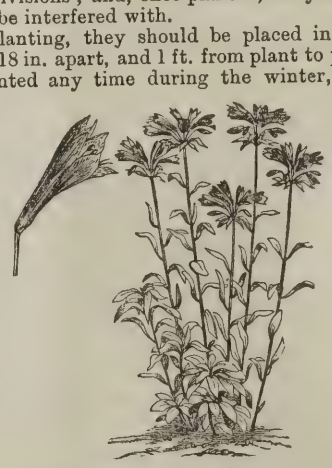
Considering the great beauty of these, and their general usefulness in the form of cut flowers, it is somewhat surprising that they are not more generally cultivated than they are, as it is only occasionally one meets with them even in large gardens. This may in part be accounted for from the difficulty there is in transplanting them successfully, and from their requirements as to soil and situation being so little understood. Being somewhat tender, it is useless attempting their cultivation, unless the bed or border intended for their reception is properly drained, so as to add to the warmth of the soil, and prevent the tuberous roots suffering from

Alstrœmeria versicolor.

an excess of moisture during winter. The best place in which to grow them is a south border, or along the front of a wall having a similar aspect, where, if the soil is not naturally light and dry, it should be made so. The best plan is to thoroughly prepare a bed for them at the outset. This should be done by digging out the whole of the soil to the depth of 3 ft.; and, in order to secure thorough drainage, 6 in. or so of broken brick, or some other good draining material, should be spread equally over the bottom of the border.

Before replacing the soil, shake over these a good coating of half-rotten leaves, or short littery dung, so as to prevent the soil from running among the interstices of the bricks, and thus stopping up the drainage. If the natural soil is at all still, a portion of it should be wheeled away, and an equal quantity of leaf soil, or other light vegetable mould, substituted; to this a barrow-load of sand should be added. The whole should then be thoroughly incorporated together previous to filling in the bed or border. The plants should be procured from the nurseries in pots, as they rarely succeed from divisions; and, once planted, they should never be interfered with.

In planting, they should be placed in rows about 18 in. apart, and 1 ft. from plant to plant. If planted any time during the winter, they



Alstrœmeria aurantiaca.

should be placed from 6 in. to 9 in. deep, so as to keep them out of the reach of frost; and, as an extra precaution, a few inches of half-rotten leaves should be shaken over the surface of the soil, so as to keep all safe. Should there be any difficulty in obtaining established plants in pots to start with, seed may be had; and this should be sown at the same distance apart as advised for the plants. The seeds being nearly as large as those of Peas, they may be sown 2 in. or 3 in. deep; and, in order to ensure a regular plant, three or four seeds should be placed in a patch. When up, the surface of the soil should be kept gently stirred, so as to keep down weeds and accelerate growth. If well treated, they will begin to bloom at a year old, and will continue increasing in strength and beauty every season, provided they receive proper attention, and are not disturbed.

When grown in masses in this way they are strikingly beautiful, as every stem furnishes a large number of flowers, and as they vary much in their colour and markings, they make a gorgeous display. While growing and blooming they should have an occasional watering, as, on account of the liberal drainage required to keep their roots in a healthy state during winter, they would otherwise become too dry, and ripen off prematurely. A good mulching of old Mushroom dung or leaf-soil is of great assistance to them while in bloom. When going out of flower the seed-heads should be carefully removed, otherwise the plants are apt to become exhausted, as almost every flower sets, and therefore such a load of seed should not be permitted to ripen. In removing the pods, care should be taken not to shorten the stems or reduce the leafage in any way, all of which is necessary to ripen the tubers and form fresh crowns for the following year. The stems should, therefore, not be cut down but should die away naturally.

Any one having deep light sandy soil resting on a dry bottom may grow these beautiful flowering plants without any artificial preparation whatever, all that is necessary in that case being to pick out a well sheltered spot, and to give the surface a slight mulching on the approach of severe weather. No trouble is involved in staking and tying, as with most plants, for the stems of these are quite strong enough to support themselves, unless in very exposed situations. Independently of the gorgeous display which they make when growing, they are quite worth cultivating for supplying cut flowers, a condition in which they last very long in perfection. S.

Fruiting Duckweed.—*Netera depressa*—Such a gay and interesting little plant as this should not be neglected by those who wish for brightness and beauty when the days are at their shortest. Many flowers which delight by their beauty of form or colours are fugitives, but in this little alpinery we have a plant which, although of minute growth, forms a fund of enjoyment all through the autumn, winter, and spring months. It grows into a dense cushion of foliage, which forms a verdant setting to numerous tolerably large, bright red berries, which are well thrust up above the leaves, and which are, therefore, conspicuous enough to render the plant of real decorative value. Were the culture of this little berry bearer difficult I would not so warmly recommend it, but as a fact the cultural action is one of the simplest, and such as anyone may master in an ordinary back yard, for it needs neither glass nor shelter of any kind throughout the growing season, but is perfectly content in a cool position in the open air, rejoicing, however, in partial shade and moisture. The shelter of a glass roof in the winter is quite enough to preserve its beauty and freshness, and it thrives perfectly well in a window in the dwelling.—J. C.

Bought Pansies.—Your correspondent "W. D.," who recommends a very excellent method of growing these flowers, remarks: "It is quite waste of money to buy what are sold in the London shops and streets as Pansy roots; no plant with such delicate root fibre could be expected to do well after the treatment they get." He is in a great measure right, but, at the same time, he is rather too despondent. The reason they do not do well is that they are taken up from the ground, with one large flower to name the plant, the earth pressed (literally) into a ball round the roots, and tightly bound round with bast and moss. These "balls," packed tightly in a box, are continually sprinkled with water, and by degrees the earth, with which they are sold, becomes sodden and impermeable as clay. As soon as they reach home they undergo three classes of treatment, as far as I have seen. 1. They are "crammed" in this glutinous earth into an ornamental vase or pot, and there left till they refuse to flower any more. 2. The ball is "potted"—*i.e.*, surrounded with good earth such as the Pansy loves. 3. The balls are entirely washed away, leaving only the clean roots, which are carefully potted in a mixture of loam, leaf mould, and sand. The first plan kills the plant in about a week. They survive the next treatment about three or four months. The last

mode is the right one, and they often live till carried off by frost, age, or "creatures." I got several good plants in Covent-garden this year, about March, and potted them on plan No. 2. I got several more in May, and potted them in mode No. 3. These last have supplied me well with flowers up till now, besides giving me several hundred cuttings. The first lot were healthy for about a month, and then got worse and worse till they died. I then turned the dead plants out of their pots, and found they had not made the least root, being prevented by the old bought ball, which was there intact, as hard as stone, in the middle of the pot. It is, therefore, this hard "dumpling," in which the roots are cased for sale, which keeps the air from the roots, and kills the plants. Let them be potted as described in No. 3, and they will thrive and succeed as well as the most carefully-raised stock.—GIROFLE.

Pansies In Towns.—With regard to the remarks of "W. D.," on p. 448, on the above subject, I may say that, as I have distinctly stated, the directions in my paper are calculated to apply to situations in the heart of towns, not to suburbs like Peckham, which is, compared with many places, almost rural. In Peckham Roses will grow and do well, as well as many other subjects which would inevitably fail a mile farther in, and Camberwell-green is only a short distance from Denmark-hill, which is quite open and healthy. In both these places—or at least in the greater portion of both Peckham and Camberwell—I have no doubt that Pansies would do fairly well, with care; and, indeed, I have included them, as likely to do so, in my second list, under the name of Heartsease—which list contains the names of such plants as would do well with care, or are more suitable for culture in suburban gardens. In my garden, which was more than a mile nearer St. Paul's than any part of Peckham, I tried all kinds of Pansies in all manner of ways, and though a few good blooms would sometimes be produced just at first, yet they always dwindled, and ultimately perished. If they can be made to succeed at all, of course the method given by "W. D." is much the best—viz., to raise seedlings oneself, and so avoid any serious change or check. I always recommend this method of raising seedlings, especially for town gardens, for all kinds of plants to which it can be applied. Nevertheless, though I allow that Pansies may be grown—and, with care, grown well—in any small town, suburb, or near a large city, yet I maintain that there are many other plants that will do better, and with less trouble, in town gardens, than Pansies, as a general rule. Of course there are exceptions, but I do not consider that the fact that plants, which were probably raised in a healthy country nursery and carefully replanted, looking well for a few weeks or months, proves that they may be grown well in such a situation.—THE AUTHOR OF "TOWN GARDENING."

Scale on Plants.—Paraffin, mixed at the rate of a small wineglassful to four gallons of water, will kill scale, and does not appear to harm the most tender foliage. If mixed with hot soft water it will mix better, and be more effectual than if applied cold. With hard-leaved plants, such as Epacrises or Camellias, the heat of the water may be quite warm, as in passing through the syringe and air in applying it cools down considerably, and the hotter it is, so as not to endanger the safety of the plants on which it is used, the more satisfactory will its effect be, and the same may be said of all the insecticides. In using paraffin for the purpose of destroying scale, &c., the water should be kept constantly agitated either by rapid stirring or, better still, by some one taking up a syringeful and returning it again with force into the vessel, so as to drive any paraffin that may, from its greasy nature, be floating on the top into the water, and while this is being done a second person can be putting it on with another syringe. If not managed in this way its distribution is likely to be very irregular, from the cause already specified, and therefore some part of the plants would get more than their share and of greater strength than would be safe for them. The plants should, when applying it, be laid on their sides and left in that position to drain for a time, in order that none may get into the soil.—S.

THE SHRUBBERY.

Berberries in Hedges.—I was visiting a place some time ago, and was very much struck with the appearance of a fence-hedge which extended the east and south sides of a kitchen garden. There were two acres walled in, and one acre around the outside of the walls which this hedge protected from sheep which were in the adjoining field. It was planted with the common White Thorn, intermixed with Berberis Darwinii, and as it had been well clipped-in every year, it formed quite a thicket, and rendered good protection from the cutting east winds, besides being highly ornamental. Some of your readers, I dare say, know more about its properties, as it was quite foreign to me; but the plants of the Berberis Darwinii being easily raised from the seed, and by transplanting at the proper time, I don't see why it could not be introduced more into our boundary and field-hedges, which look so bare in winter, and give but very little protection.—KIRKTON.

How to Grow Veitch's Virginian Creeper.—Most persons who have seen Ampelopsis Veitchi must acknowledge its merits, but its beauty may be enhanced in a tenfold degree by allowing about three stems to grow, and cutting off all the side shoots close every spring, when young ones quickly grow out, covering the wall with a delicate foliage which is frequently mistaken for some new and beautiful Ivy; these branches, although so tender-looking, last an astonishing time in vases or worn in the hair.—C. E. I.

Cut Spray of Alstrœmeria puliferum.

Escallonia macrantha in the Midlands.—This is one of the best evergreen shrubs which we have for planting against terrace walls having a south or west aspect. It grows freely in loam mixed with a little sand. When in good health the foliage is of a bright and cheerful tint of green; and, when in full flower, it is very effective and useful for cutting purposes. E. Ingrami is another good variety; both are quite hardy here, having stood unprotected for six years.—A. H., *Nottingham.*

Cherry Plum as a Hedge Plant.—The Myrobella Plum is especially valuable as a hedge plant on account of the vigour with which it grows in all kinds of soil, even in the poorest and most exhausted, its hard, unyielding wood, its long, sharp spines, and its great hardiness and non-liability to disease. It grows fairly well under trees, but, of course, not so well as in more open positions. It comes into leaf much earlier in spring, and retains its foliage much later in the autumn than White Thorn. This adds greatly to its value for ornamental purposes. It may be treated, in planting fences, in all respects like White Thorn, except that it is not necessary to plant it so closely; from four to six plants per yard are sufficient for ordinary purposes. If a strong fence be required very quickly the plants should not be cut at all during the summer. They should be shortened to about one-third of their height at planting time, and each succeeding winter, or time when they are devoid of leaves, they should be shortened to within about 9 in. of the height to which they were cut the previous season till the height which it is desired that the fence should ultimately attain is reached. It may then either be clipped in the ordinary way as appearances require, or the superfluous shoots may be trimmed off every winter. This Plum is also valuable as an ornamental shrub or small tree, and as a stock for the Apricot and Plum it is invaluable, succeeding so well as it does on poor soils.—J. E. E. *Norwich.*

Trees for Screens.—One of the first conditions that most people desire in a garden is privacy; whether the garden be that usually attached to a small villa residence, or of a more pretentious character, one of the first things ordinarily looked to is the planting of the boundary lines to, as far as possible, exclude the sight from outside except at such points as it is desirable to leave open to afford views from the interior of objects more or less in the distance, as local circumstances may determine. In the case of large places, this is easily managed where there is sufficient room to introduce a belt of deciduous and evergreen trees, which should be skilfully arranged so as to effect the object without making the intention more than can be avoided apparent; but with amateurs' gardens of an ordinary size there is more difficulty in making an effectual screen without its occupying too much land. Erect-growing Poplars, from the limited space which they cover, and their rapidity of growth, are most frequently used, yet these are unsatisfactory, inasmuch as divisional lines of this sort should

be as impervious to the eye during winter as they are in summer, a condition which cannot exist when deciduous subjects are used. Much better every way, both by their ability to thoroughly answer the purpose in view, winter and summer alike, as well as thriving well in most soils and situations where not exposed to too smoky an atmosphere, are such things as Pinus cembra, Pinus austraiaca, evergreen Oaks, and Hollies; these, by a judicious arrangement in not planting them in exactly straight lines, with a few dwarfer-growing subjects in front, such as Rhododendrons, Portugal Laurels, and Aucubas, will make an effectual screen in a short time if the plants be sufficiently attended to, and the soil fairly enriched. It is a prevalent, though very mistaken idea, that such plants as these do not like an enriched soil in which to grow; this, however, is anything but the case. Green, rank manures do not suit them, but a fair admixture of that which is well decomposed stimulates their growth amazingly. In the case of all plants required for screens, it should ever be borne in mind that they must always have enough space to keep the lower branches in a healthy, thriving state, otherwise they get naked below, which completely defeats the object in view. With trees so grown for such a purpose, a moderate use of the pruning knife is admissible, in order to prevent their unduly encroaching upon each other, and to encourage and direct growth where it is most required. Not only is the boundary line of a garden, composed of evergreen subjects like the above, much more effectual for the purpose intended, but it has the additional advantage of looking well at all seasons, and affords much more protection to everything requiring shelter during the winter and spring, at which time it is most needed, than can possibly be effected by trees and shrubs that cast their leaves.—B.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 6.—Sowing Mignonette in pots, and keeping it slightly warm in pits, so as to have it ready in time for the London season; potting Spiræas for forcing; planting Tritoma Uvaria, Phloxes, Hyacinths, Narcissi, and double scarlet Anemones; also standard Roses where required, and a hedge of Berberis asiatica; likewise Cypripedium pubescens under hand-glass out-of-doors in well-drained peat, and covering with a layer of leaves as a protection from frost; cleaning orchard-house, giving water before manuring, and again after, then soiling over all, and treading firmly; making a border ready for Parsley sowing; manuring young Apple trees; pruning espalier Apple and Pear trees, and re-tying them.

Dec. 7.—Putting in to force third batch of Asparagus; beginning to thin plantations, paying especial attention to specimen trees. Plants in flower—Hyacinths, Lily of the Valley, Narcissi, Mignonette, Heliotropes, scented-leaved and scarlet Pelargoniums, Poinsettias, Fuchsias, Primulas, Chrysanthemums, Schizostylis coccinea, Amaryllises, Tulips, and Coleus.

Dec. 8.—Digging all vacant spaces; finishing the trenching of borders for fruit trees; putting Endive weekly into slight heat to blanch; placing below greenhouse stage all bulbs which have finished flowering in order to save them for planting out-of-doors for cut flowers; covering up some Rhubarb in the open ground; making a two-light bed for Carrots and Radishes; putting Ranunculuses in pots into cold frames.

Dec. 9.—Potting young Cucumbers, and putting them into a small frame; keeping Black Prince Strawberries at from 55° to 58° by night, so as to have them ripe about March 13; putting Iresine Lindeni into heat for cuttings; moving Coleus from pits to shelf of early Vinery; taking up Lettuces from under wall and putting them in frame; tying up Vines which were bent down in order to induce the rods to "break" regularly.

Dec. 10.—Potting Tuberoses and placing them in heat; putting Gloire de Dijon and Maréchal Niel Roses into good-sized pots for flowering in conservatory. Planting Laurels and Yew trees; getting Camellias into conservatory; putting Roman Hyacinths which are in flower into greenhouse; top-dressing Cucumber plants with loam and manure, and pressing it down firmly; Camellias and Narcissi coming well into flower, also a few pots of Lily of the Valley.

Dec. 11.—Beginning to surface-dig herbaceous borders; potting Pelargoniums; putting first batch of pot Roses into heat, and keeping them at 55° at night; protecting Peas from sparrows by means of Asparagus haulm, which not only serves to ward off frost, but lies so lightly that the young Pea shoots grow right through it; making trenches round Wellingtonias, and filling them with good soil; giving a top-dressing of new soil to Vine border; wheeling pond-mud on to Raspberry quarter.

Glasshouses.

Winter Arrangement.—There are few more effective plants for conservatories than Tree Ferns, and even where the temperature of a conservatory is kept no higher than that of an ordinary greenhouse, there need be no hesitation about placing Tree Ferns in it. The arrangement of these and other plants of a similar description must necessarily be dependent upon the character of the house. Where objectionable central stages exist, such subjects can never be made effective, as the pots or tubs in which they are grown have to be elevated, and are thus brought too prominently before the eye; and, unless the house is a high one, the heads of the plants are in too close proximity to the roof, which not only interferes with their appearance individually, but spoils the general effect. Such kinds as Dicksonia antarctica, the more elegant D. squarrosa, Cyathea dealbata, or Alsophila excelsa, all species that form compact, moderate-sized heads, may be used in conservatories of not more than medium size, so as to form centres of groups, which are much more effective than the often adopted method of filling the middle of the house with a large single mass of plants. The great advantage resulting from dispensing with centre stages in conservatories, or beds in which the plants are planted out, is that it admits of the arrangement being so varied from time to time as to give the whole a completely different appearance, so much more desirable than the continuity of the same plants always in the same places as when stages are used. Even in the dull season of the year an eye that is trained to effective arrangement will, with limited and common-place materials, often make a conservatory or greenhouse look better than where more valuable plants with more flowering subjects are at command. But in all this kind of grouping it is necessary to prepare much larger numbers of plants that are made to do subordinate duty in edging the groups than under ordinary circumstances, especially in the case of winter plants, such as Primulas, Roman and large-flowered Hyacinths, Narcissi, Hoteia japonica, forced Lily of the Valley, small shrubs (such as Deutzias, Azalea amœna, and double Prunus), Richardia æthiopica, Spiræa palmata, Amaryllis, and anything of a similar somewhat taller character, with enough green material, such as Adiantum cuneatum and hispidulum, Pteris serrulata and P. cretica albo-lineata, Isolepis gracilis, and Selaginella, all of which it is necessary to grow in greater quantities than for the promiscuous style of plant arrangement, beyond which at one time little was attempted.

Cyclamens.—Where Cyclamens are well grown with the last year's sown plants kept on continuously warm with something like an intermediate temperature, these will now through the winter months play an important part in the arrangement of conservatories and greenhouses that are kept tolerably warm, without which plants that have been grown with some heat cannot be expected to continue long in good condition; but to do justice to these plants they require keeping near the glass, so as to have plenty of light. Movable wire stands are very useful wherein to group plants of this character, which, if relieved by a few of the hardier kinds of more elegant leaved Palms or other green-foliaged plants, do much to enliven the general appearance. There is one thing in reference to the management of conservatories at this season of the year of which it is well to remind the inexperienced, and that is the necessity for doing something to prevent the atmosphere getting too dry. This is a matter which requires to be carefully managed, so as to avoid the extremes of too much moisture, which is objectionable in many ways, and the dry arid atmosphere that never fails to cause the premature dropping of Camellia buds.

Watering.—Simple as this operation is, it will nevertheless be found that in a mixed collection of plants moderately varied in character it requires a good deal of attentive observation to give to the whole water in such proportion as may be required, for, although general rules may be given, yet to generalise too far in this direction is sure to lead to serious mistakes, as there can be no question that the state of the roots as to the moisture required, quite as much in the winter as in the summer, always depends upon the conditions under which the plants exist in their native country in the different seasons of growth and rest; for instance, Azaleas, coming as they do from the moist hill districts of India, though very fine, somewhat delicate-rooted plants, will not bear without injury the soil being kept nearly so dry as plants from New Holland or adjacent parts of the world, whilst many of these in turn need more water than some of the Cape species, particularly Heaths. Those, therefore, who have not had much experience in the cultivation of mixed collections of plants will find that they will be abler to form a correct estimation of their requirements, by in this way determining the more or less moist condition in which they should be kept, than by being led alone by their hard or soft-wooded character. Taking plants collectively, both those that require keeping the driest, and also those that want the most moisture, there will obviously not be, in the winter season, danger of absolute death through their being kept a little too dry, as there is from a similar cause in the summer when growth is in an active state; yet where plants naturally need the soil about their roots being kept comparatively moist, when they receive an insufficient supply they get into a languid condition that enfeebles them so far as to prevent their making nearly the progress they ought when the season of growth comes round.

Primulas.—The single varieties of Chinese Primulas have become much improved of late years, but still no attention to seedling raising has the effect of removing the disposition to damp off in the winter months, which there seems to be only two methods of avoiding. Of these the best is keeping them through the winter in a temperature higher than that of an ordinary greenhouse, say from 45° or a few degrees higher at night in a light position. Thus situated, with a little more warmth in the daytime, there is not much to fear from the effect of damp, and they may have sufficient water given to enable them to keep on growing and throwing up flowers; but when in greenhouses where little more heat is maintained than just enough to exclude frost, they need to be kept close up to the glass, and should receive no more water than is required to prevent the soil from getting so dry as to stop all growth. Where there is a chance of treating them in the former way they will produce double the quantity of flowers; yet at the best the single varieties are of little use for bouquet or button-hole flowers, as compared with the double kinds, in which there is now even greater improvement than in the single ones. The facility with which the single varieties are raised from seed to that of the double sorts, needing, as the last do, to be increased by cuttings, is the cause of the double ones being so much less grown than they deserve to be. The fine forms of these that now exist are such that wherever there is a continuous demand for cut flowers, and means of keeping them something warmer than a greenhouse through the winter, they should be extensively cultivated. The best forms, now in the colours of pink, pure white, blush, and white slightly flaked with pink, have flowers almost as large as an ordinary Pink (Dianthus). The advantage in their use for cutting is that they will keep fresh for days, whereas the blooms of the single varieties are so liable to fall off that no dependence can be put on them in any arrangement of cut flowers.

Schizostylis coccinea.—Those who grow in pots a good stock of this handsome late autumn-blooming plant cannot fail to have noticed how useful its bright scarlet spikes of flowers are through the autumn months. It blooming will in most cases now be nearly over and although the plant is hardy, still in common with anything of a similar nature that has been kept in a warm greenhouse through the autumn, it is better not turned out of doors, but should be moved to a cold pit or frame, and there have the pots plunged in ashes.

Flower Garden.

Auriculas.—It is still necessary to look over the plants in order to remove all dead and decaying leaves. Apply water to prevent the soil in the pots becoming quite dried up. Place mats over the glass when the frost is very severe. Admit plenty of air; in fact, remove the frame lights whenever the weather is at all favourable. There is some difference of opinion as to the position in which the frames should be placed. Most growers prefer them to face south or south-east, but much, of course, would depend upon the time when the plants would be wanted in flower. If the bloom is wanted to be at its best by the middle of April, let the frames fa

the south, but if not wanted until nearly the end of the month, let the back of the frames be placed to the south.

Carnations and Picotees.—When the plants are fairly established in cold frames they do not require much water at present. If they are looked over about once a week, and those plants that require water are carefully attended to without wetting the leaves, they are not likely to be injured by the disease called spot, which is usually engendered by too much moisture in the frames during the shortest days of the year. There are some sorts both of Carnations and Picotees that are seldom or never attacked by spot, while others seldom escape that disease if the surrounding circumstances are favourable to its attacks.

Dahlias.—Where the roots of these have been stored away, it is necessary to look over them occasionally to see that the crowns of the tubers are not injured by damp caused by the stems decaying. If this has happened, the decaying portion must be carefully removed, and the root thus affected should be taken out and placed in a light airy position to dry. All that is required is to keep the tubers in a comparatively dry place where frost cannot penetrate.

Phloxes and similar plants in pots are now comparatively at rest in cold frames. It is best to plunge the pots in some rather dry material, such as fresh Coca-nut fibre refuse, which answers as well as anything for the purpose. Plenty of air should be admitted, removing the lights when it does not rain, the same as in the case of Auriculas.

Cold Frames.—It is well known that where very choice collections of herbaceous plants are grown it is desirable to winter a portion of them in cold frames. The plants ought to be established in pots before the winter, and then it is desirable to plunge them in some light material. We devote a frame or a portion of one to choice species of Primula. In the same frame are Ixias, Anthericum Liliastrum, Meconopsis, Trilliums, and, indeed, any plants the whole stock of which it is not desirable to risk in the open garden. These plants will not take care of themselves, nor do they require much attention. All that is needed is to look over the pots about once a week, and water such as require it. The frames ought also to be freely ventilated.

Fruit.

Vines.—Early Vineries that have outside borders will need protection, consisting of a covering of dry Fern or leaves in sufficient bulk to exclude frost, and sashes or shutters to throw off snow and rain. The Vines in succession and midseason houses will now all be ready to prune, and the sooner this is done the sooner will they go to rest. If they have been infested with insects, remove from the stems the loose bark only, and then paint or wash them over with a strong solution of Gishurst or soft soap and sulphur. The removal of the outer bark of the Vine is only recommended in order that the insects may be the more easily reached by the wash; where insects have not been troublesome, by all means leave the bark intact, for its removal, to say the least, is most unnatural, and must in some degree prove injurious. Late houses still require careful management in order to keep the Grapes in good condition; besides keeping the atmosphere as dry as possible—not arid—it is necessary to keep the temperature from ever falling so low as that outside, which on some mild days might be the case if not closely watched.

Figs.—In the culture of Figs there are two conditions essential to securing the best returns; the first is restricted root space, and the second is liberal maturing; the first ensures fruitfulness, and the second is necessary to its more perfect development; hence arise the generally satisfactory results that are obtained by growing Figs in pots, a plan that cannot be superseded for early work, but for general and late crops much more and finer fruit can be had by planting out. Of course, the size of borders must to some extent be ruled by the space there is for the spread of the trees, but, as a general rule, 2 ft. in depth and 6 ft. in width will be found to be ample. Provision for surplus water to readily pass away should be made by the concrete or paved bottom being made to slope to the drain in front. The soil in which Figs revel is a chalky loam, to which may advantageously be added charcoal and a small proportion of ½-in. bones; it should be made firm, for in a loose, spongy soil the trees are apt to grow too robustly. When once the borders have become full of roots the annual removal of the top soil will be necessary, for the purpose of adding fresh feeding material, and the disturbance which the roots thus get gives a salutary check to any disposition that the trees may manifest towards too vigorous a growth. Now is the time to apply such top-dressings, and also to place a portion of the trees in pots in gentle warmth. Bottom-heat is not necessary, but time will be gained if this can be afforded by plunging the pots in Oak leaves, in sufficient bulk to engender a heat of 65°. The leaves will give off sufficient moisture, therefore the plants will not need syringing, and for the present fire-heat will only be required when the temperature is likely to fall below 45°.

Strawberries.—To have ripe fruit early in March, which is quite as soon as the fruit is good, a number of plants should now be started. Where there is no house specially devoted to their culture, one of the best positions for this early batch is a pit filled with Oak leaves, on which the plants should be set (not plunged) closely together; the warmth and moisture given off from the leaves soon causes new root action and expansion of the crowns. Caution is requisite that roots do not protrude and get established in the leaves, as before this takes place they should be drafted on to shelves in Peach-houses, Vineries, &c., and others put in their places. Whilst in this position they may require water about twice a week, but no syringing will be requisite, the moisture from the leaves being ample. A little ventilation will be necessary in all weathers, but when mild give air liberally. We always select 100 of the finest plants for the first introduction; half the number would be abundant, could we depend on all of them setting and swelling off their fruit well, but at this early season it is always advisable to allow a wide margin for failures; therefore start plenty, and keep selecting the best plants; the weakest ones will do good service at the end of the season.

Vegetables.

In districts where the common Bracken is plentiful protection from frost becomes a very easy matter, as there is no better material for covering Celery, Cauliflowers, and early Broccoli; the lightest sprinkling of it over the plants wards off many degrees of frost, and, what is of great consideration in some gardens, it does not present that untidy appearance that stable litter does, which is the next best protecting material. All heads of Broccoli or Cauliflowers that are anything like fully grown would be best lifted entirely and taken under cover. They keep good for weeks either heeled in or suspended head downwards in any cool shed from which frost can be excluded. Lettuces and Endive may also be protected with Bracken, but those that are required for winter salads ought always to have the protection of frames. Cauliflower and even Cabbage plants will be the better to have protection in severe weather. Parsley is best protected with mats resting on hooped sticks or Pea sticks laid over the bed. Of course all such protection should only be employed when the weather is really severe, and should at once be removed when it has become more favourable.

After hard weather it is necessary to go over plots of Brussels Sprouts, Cabbages, Savoys, and Kales, and pick off all the decayed leaves, which not only smell disagreeably, but hinder the admission of air, which is most essential to keep such green crops in a sturdy condition. When the weather renders it impracticable to work on the ground, compost and manure heaps may be turned over, leaves and stable litter got together for making hotbeds for forcing purposes, and drains opened, ditches cleared, hedges clipped, and advantage should always be taken of dry, frosty weather to do all heavy wheeling or carting, for such work is then not only the more easily and expeditiously done, but there is no after repairing of walks required, as is the case when the traffic takes place under less favourable conditions, and thus "labour saved is labour gained."

Rhubarb and Seakale give least trouble when the roots are lifted and placed in a Mushroom house, but the want of such a place need be no drawback, as it will do in any shed, cellar, or outhouse, only, of course, the warmer the situation the sooner it is ready; in cool places time may be gained by always watering with warm water at about a temperature of 90°. It may be forced in the open ground by placing over the crowns, pots, tubs, &c., and using leaves only as a heating medium, as the addition of litter renders the heat too violent.

Seakale is amenable to exactly the same modes of forcing as Rhubarb, except that extra care is necessary to exclude light and air to blanch it well. Beans and Asparagus forcing pits that are specially constructed and heated with hot-water pipes are, of course, the best in which to grow Asparagus; but a bed made up of leaves and a small proportion of stable litter, with frames placed on it, or a similar bed made up on the floor of a Vinery that is being forced, serves the purpose well. A bottom heat of 75° should never be exceeded, and a top or surface heat ranging from 45° to 55°. For the forcing of French Beans—even when there are pits specially constructed in which to grow them—there is no better plan than having them in pots, as they can then be moved at will, and the crop advanced or retarded as may be required, and a constant succession is far more easily maintained by making a sowing fortnightly in quantity according to demand. One important item in their culture is that they are moisture-loving, and should never suffer from want of water either at the root or in the atmosphere.

Carrots and Radishes force well when sown on a bed of sufficient massiveness to produce a bottom-heat of 65°; glass coverings are, of course, indispensable, but when the weather is mild the fullest exposure is necessary. If the two crops are sown in alternate lines 6 in. asunder, the Radishes will come off before they are in any way detrimental to the Carrots.

GLASSHOUSES AND FRAMES.

Vallotas in Winter.—These are too frequently subjected to a drying process, a course that is most detrimental to them, as then they have most of their large fleshy roots, whereby they are considerably weakened. As plants of these are now in a less active state than at any other time, what re-potting or division they require had better be done at once; they may be shaken out from the old soil with as little injury as possible. Vallotas do best in a mixture of loam, sand, and leaf-mould, in which they should be potted somewhat firmly in well-drained pots, and afterwards stood on the hard floor of a pit close up to the glass, or on the back shelves of a greenhouse; but the former position is the most suitable, as they remain in a more uniform condition of moisture than when exposed on dry, airy shelves. In wintering Vallotas the soil should be kept just moist enough to preserve their leaves in a healthy green state and the bulbs plump and solid, a condition that enables them to flower better than when dried off in the ordinary way. If potted singly, from 6-in. to 8-in. pots will be found to be sufficiently large, and if the bulbs be small, three in the latter size produce the best effect. Any offsets that may be taken from them during the process of re-potting may be planted out in prepared beds in frames, or potted thickly in stove pots or pans to grow on for future use.—S.

Ixias, Sparaxis, Babianas, &c.—For pot cultivation there are few bulbous plants more beautiful or generally useful than Ixias, Sparaxis, and Babianas, all of which are alike valuable either for greenhouse decoration or supplying cut flowers. Although perfectly distinct in appearance, they require the same treatment, and should at once be potted in rich, sandy soil, and kept close under cover of a cold frame or pit plunged in coal ashes, where all the attention they require till they get into leaf is to preserve them from frost and vermin; 6-in. pots are quite large enough for them, and in these from six to twelve bulbs should be planted, according to the strength and size of the different varieties. If the soil be in a moderately moist condition, as it should be at the time of

potting, no water will be required till they have started well into growth, and even then it must be given but sparingly. All the above are nearly hardy, and any small bulbs there may be on hand can be planted on dry sunny borders, in light sandy soil, close under walls, and will be found most useful for cutting after those in pots in the greenhouse are over.—J.

Tritonia aurea.—As an autumn-blooming plant the Tritonia is one of the most serviceable, and affords a shade of colour that we stand much in need of at that season for associating with Achimenes, Zonal Pelargoniums, &c., with which it blends well and forms a very pleasing contrast. Where fine masses of this are required the roots should be disturbed a little as possible after they once get established. The best way to treat them is simply to reduce the ball by removing as much of the old soil as can be done without breaking the rhizomes, and then to shift them into a larger-sized pot, using good fibry, mellow loam for the purpose. In cases where an increase is desired they should be shaken out, that they may be divided in the most advantageous way, and when potted, placed in any cold frame where they can be well attended to with the syringe after they get into leaf to keep down red spider, an insect to which they are particularly subject.—W.

Fuchsias.—In order to obtain early cuttings of these, it will now be necessary to get a few old plants into heat to induce them to break. Almost any place where there is sufficient moisture will do to give them a start, after which they must have a light, airy position to induce a firm, short-jointed growth. Any that were struck in the autumn should be grown steadily on by affording them the requisite pot room as they advance, and a temperature from 50° to 60°, according to the state of the weather. It often occurs that old plants laid by in sheds or other draughty positions out of sight are allowed to become too dry, and when this takes place, many of the branches die back to the main stem and even down to the roots. To save any loss this way the pots should be plunged in damp ashes or some littery material to prevent the dry air from playing upon them.—W. P.

CINERARIAS.

Now that these will soon be coming into bloom a few notes on their general treatment and improvement may be of interest to many readers of GARDENING. Of all plants grown for general decorative purposes Cinerarias are the most useful, and more particularly is this the case as regards amateur cultivators who have only a limited amount of house room, as the Cineraria is a plant that does exceedingly well in pits and frames. Indeed, if these be of that substantial character which they usually are when built with bricks, no better place can be had for growing them; and if a single hot water-pipe runs along the front wall for the purpose of drying the atmosphere when necessary and to keep out frost, the situation will be perfect, and it will exactly meet all their requirements.

Anyone, therefore, having the convenience of such a structure, will have one of the most perfect, not only for growing Cinerarias, but also many other plants for keeping a greenhouse gay during the winter and early spring months, as the same temperature will just suit Cyclamens, Lachenalias, Libonias, Eupatoriums, and a host of such plants that come in about the same time, but which, until they get into bloom, are not easy to manage among others, where they have to stand far from the glass and are crowded for room.

Sowing, &c.—Valuable as Cinerarias are in spring, they are doubly so at or soon after Christmas, at which time they may be easily had by sowing seed in April, and growing the plants on during the summer in a cool, shady retreat, so as to keep them free from the attacks of red spider. The best way of raising them is to fill pans with light, rich soil, consisting principally of leaf-mould or peat finely sifted and pressed down level and smooth. Before sowing, however, this should be watered through a fine-rosed pot, and then allowed to stand and drain for a night or so to get rid of the surplus moisture. Seed of such a delicate nature as that of the Cineraria should never be watered till the young plants are found to be peeping through the soil, and the necessity for this may be obviated by covering the pans with a sheet of glass, and laying a little moss or a piece of brown paper over that, so as to shut out the light and sun; but, in all cases in which this is done, much watchfulness is needed to remove these coverings directly the young plants make their appearance, as a day's confinement in the dark will be sufficient to draw them up to that degree as to weaken them very considerably. In order to facilitate the handling and pricking off, as well as to prevent the plants from becoming "drawn" from being too near each other, the seed should be sown thinly and slightly covered with silver sand and fine soil in about equal proportions, and if then placed where it can get a gentle moist heat, the young plants will soon be through, after which a shady place near the front of a hotbed or the back shelf of a warm greenhouse is the best place till they are large enough to pot off singly, and when this is done they may be transferred to any cool frame where they can be kept close for a short time to give them a start.

Soil and Situation.—Although Cinerarias will grow in almost any kind of soil, they delight in that which is rich and light; and if a mixture of about equal parts of loam and leaf-mould, together with little decomposed cow manure, be afforded them, they will be found to flower stronger and better than in anything else. A pinch of soot at the bottom of the pot, or a little mixed up in the soil, is a great help to keep them in health and add to the size and deep green colour of the foliage, besides which, being disagreeable to worms, it is desirable on that account. During summer we select a shady site for them near a building or where a large tree casts a shadow; on this spot we place a three-light box, and then put in 3 in. or 4 in. of coal-ashes to form a firm bottom for the pots to stand on. A situation of this kind is always better than a more open one, as the shade is natural to them, and they get more light than could be had if the sun's rays have to be screened by mats or other means, and it often occurs when these are used that they are not on when most wanted, or that they remain on long after they ought to have been removed—thus damaging the plants by causing the leaves to come thin and flimsy. In a naturally shady position there is no fear of this, and they may be grown much more successfully with far less labour and attention than they require anywhere else. The same remarks apply to Chinese Primulus, which, during the summer months, should be grown and treated in a similar manner.

Modern Cineraria.

Watering.—An important point with both is to surround them with an atmosphere saturated with moisture, and this may be secured by copious syringings overhead, or gentle watering through a fine-rosed pot every afternoon before closing. These repeated applications will saturate the ground under them, and keep it in that desirable condition throughout; and if this be done, the growth of the plants will be rapid, and there will be no difficulty in maintaining them in the most perfect health, provided they are shifted on from time to time as they require more pot room. This is one of the most important matters in the cultivation of Cinerarias, for if they be allowed to remain stunted from want of root-room till the flowering period arrives, or suffer from an inadequate supply of water, they are never so fine or have anything like the sized leaves and quantity of bloom they otherwise would have. The great thing with these, as with all other so-called soft-wooded plants, is to keep them growing right on without a single check, so as to insure a full and free development of deep green healthy foliage, without which they can never be regarded with satisfaction.

Insects.—Besides being subject to red spider, Cinerarias are likewise liable to attacks of mildew and green fly, the latter of which is frequently troublesome, and can only be destroyed by repeated fumigations with tobacco, This is a work that requires great care, as no plants are more easily injured by overdoses than Cinerarias, and therefore the fumigations should only be light at one time, but repeated again and again after a few hours' interval till the insects are dead. From want of caution, and not using it in this way, I have seen a whole year's labour and attention lost, and no doubt this has been the experience of many, both as regards Cinerarias or other plants, as few escape such mishaps at some time or other, especially if tobacco paper be burned instead of the genuine article.

Saving Seed.—The sportive tendencies of Cinerarias are so great that there is sure to be a marked difference in the quality and size of the flowers of a batch of seedlings; therefore, when the plants are in bloom, it is a good plan to go over them and pick out any that show special merit, in order that they may be placed somewhere apart from the rest, as it is only by thus isolating them that they can be kept pure, or any improvement effected. In cases where it is desirous to perpetuate any particular kind and increase the stock, it may easily be done by saving the plant, which after it has done flowering should be turned out of the pot and plunged in leaf-soil in a cold frame, where, if kept duly syringed and attended to, it will soon send up a quantity of suckers around the base. These form the future plants, and should be taken off as soon as they have made sufficient root to support themselves. They should be potted singly in 3-in. pots, and afterwards treated precisely the same as seedlings. Years ago few seedlings were grown, and even the named varieties of that time would now be thought little of, so great (as shown by our illustrations) has been the improvement that has taken place in these popular flowers. It is no uncommon thing at the present day to see them with broad thick petals overlapping each other, forming individual blooms larger than a two-shilling piece—a striking advance compared with what they used to be. The new race of doubles that caused such a stir have disappointed many; but, considering what has been done with Cinerarias during the last quarter of a century, there is reason to hope that we have not yet reached the limit to which they may be brought. All progress, however, must be made by seeding from the very best, flowers and no other, and if this be done constantly we may look for still better results in the way of fine blooms.

The accompanying woodcut will give an idea of what the flower of the modern Cineraria are like, whilst that on the opposite page represents a spray from a plant, interesting as being one of the species from which the popular hybrid races of Cineraria have been produced; and it is also interesting to observe the improvement which has been effected in the modern "strains" with regard to the size of the flower-heads, the breadth and length of the ray florets, and the symmetry of form. This species is much earlier in flowering than the ordinary varieties; therefore it is desirable on this account. The colour

of the flowers is a bright purple, and it is altogether a showy plant.

Tuberoses.—These are sold in three varieties: the Italian, the African, and the American Pearl. These last are very dwarf free-bloomers, but the best (and most expensive) are the African. The treatment I pursue, with some success, is as follows:—Plant them in pots, the crowns just showing above the earth, in loam and leaf-mould well sweetened, with a very little peat added. They may be started at any time of the year. As I grow them solely for button-hole purposes, I get them by the half-dozen, and plant one every ten days, and so get a very good and regular succession. Water the plants to settle the soil, and plunge them in a hot-bed, keeping them there without water till they are about 5 in. high. Some growers cover the plants in the hot-bed with cocoa-nut fibre, and though I do not pursue this plan myself, I have no doubt that it is an excellent way. When the plants are 5 in. high I bring them into the conservatory, watering seldom but freely, till the flowers expand, which is generally about two months from the time of starting. I give a night temperature of about 40°—45°, and I always have three or four fully-expanded blooms.—Girofle.

Deutzia Gracilis.—This is an excellent plant for an amateur, for the simple reason that it is so accommodating. Last spring I had in my cold greenhouse four or five well-established plants in 24-sized pots that had been growing in these for two years without a shift. They were wintered without special care, and, as soon as growth set in, the plants were treated to occasional doses of "Clay's Fertiliser." They broke out into a prolific bloom, and were the admiration of all who saw them. This is, perhaps, a haphazard way of doing work, and not to be commended generally. The facility with which this most useful hardy shrub can be cultivated, and the constancy and freedom with which it blooms, makes it a great acquisition to our gardens, though there are many in which plants of much inferior value are grown, while this is overlooked. Deutzia gracilis has one great advantage—it will flower in a young state, and we have seen plenty of it in pots quite tiny in size that were blooming with remarkable freedom. As a pot-plant, its cultivation is simple. It requires to be potted in light soil, moderately rich, in order to encourage a free and healthy growth. One main point in the cultural process is to ensure healthy, well-ripened wood at the proper season, as it is then the dormant flower-buds are formed. It must not be supposed that it requires heat in order to get it into bloom; but with the assistance of heat it may be got into flower any time during the winter and early spring months, and in heat, with a gentle stimulant in the shape of some weak manure water, fine flowers are produced. Then the plant will stand in perfection a long time, if kept a little cool and not too much exposed. The plant can be propagated by cuttings or by division. A well-grown and established plant makes a free growth, and if the plant be divided after flowering, and planted out in good free soil, the divided parts will soon grow into strong plants, and be very useful. They should be allowed to grow in this way for one whole autumn, winter, and spring, and be potted the following autumn. It should be borne in mind that in forcing the plants the shoots should not be cut in in any way, or a loss of blooming wood will result. It is best to cut back the long or decayed wood after blooming, at the same time thinning out the weak shoots.—R. D.

ROSES.

CLIMBING ROSES.

The desire for the varieties of Roses that produce the finest formed individual flowers is so contagious, that in far the greater number of gardens many of the Roses best adapted for particular purposes are completely lost sight of. Even where lists are given of what may be termed garden Roses, it rarely happens that there is anything to be found in them but a selection of the freest-growing Hybrid Perpetuals, with a few Noisettes, Bourbons, &c., a whole host of distinct kinds being left out much more appropriate for planting in many positions in any garden—large or small—than those recommended. Take, for instance, the Banksians, both white and yellow. What can be more beautiful than the innumerable bunches of full, yet not formal, flowers that these produce when well established in a warm situation? but how comparatively rarely are they seen! All they require is either a naturally dry bed, or one that is sufficiently drained to make it so, with plenty of rich soil, and in other respects they should be left undisturbed, except to shorten any over-strong shoots, and to nail or tie others, so as to regularly cover the space which they are required to fill. A good washing two or three times in the spring with Gishurst water, allowed to dry on the leaves, is a great assistance in keeping down red spider and green fly. By the sides of shrubbery walks, away from the more dressed part of the garden, where any particular object has to be covered, the Ayrshire and Boursault Roses are generally very much more in keeping with the surroundings than the kinds that produce finely-shaped flowers.

One of the most effective objects imaginable in such a situation is the trunk of a dead tree, with its upper branches partly shortened and covered with Ivy, from amongst which hang pendant, long, untrained shoots of these Roses in flower, with no further tying in than just sufficient to disperse them irregularly over the upper portion of the stump.

Such a combination is easily obtained where the soil is suitable and plenty of manure is dug in; the Roses must also be well supplied with it afterwards, or the Ivy, being a gross feeder, will impoverish the soil to an extent that will prevent them getting sufficient sustenance. Where this combination is attempted, the Ivy should have two or three years' start, otherwise the Roses are such free growers that they will monopolise the whole space. The same arrangement on a wall looks equally well; but, if a successful effect be expected, the Ivy and the Roses must not be left to fight out a war of extermination; on the contrary, whichever is found to be unduly taking the lead must be kept within bounds, and the Roses must be annually manured, for if this be not done, while the Ivy would grow on without any assistance, the Roses would die of starvation. Even under such conditions, the evergreen Roses (R. sempervirens) alone are often much more suitable than those with finer shaped flowers; they are also well adapted for covering arched trellises over walks, or for divisional screens to shut out anything which it is desirable to hide, or for overrunning wooden fences anywhere not overhung with trees, and where the soil is not only in the first instance made sufficiently rich to promote free growth, but is continuously kept in that condition afterwards.

The Noisettes are equally useful for intermixing in the way above recommended; their great advantage is their disposition to flower profusely late in the autumn. The Teas, Gloire de Dijon, and climbing Devoniensis, are unsurpassed for using in this manner; where they have plenty of head-room, the long, unformal branches of the last, with its great clusters of flowers hanging from the points, and the ever-blooming disposition of the former, are not equalled by anything in their way. In the cases of these, again, the principal matter is to see that the roots are well sustained, and to use the knife as little as possible. Where a single object, like a very large-headed drooping standard Rose, is required in such a position as a corner of a lawn, nothing answers the purpose better than the old variety Blairi; where soil and situation suit it, and a strong support is used, it will grow to a very large size. In its case, again, the knife must be sparingly employed, or the result will sure to be a large crop of shoots but few flowers.

One of the Original Cinerarias (C. cruenta).

ANSWERS TO QUERIES.

3682.—**Leaves of Tropæolums Turning Yellow.**—Poverty is probably the cause of the foliage going off in colour. To obtain good results in the culture of these brilliant climbers—that is to say, for winter flowering—the following points must be attended to:—Strike the cutting early in the spring, or even better perhaps, late in the autumn, so as to be ready for spring. Strengthen in rich compost, so that the plants get well established in 10 in. pots by the middle of September, at which time take them to their winter quarters. It must, however, be borne in mind that these plants, although they may be growing in a cool temperature, are called upon to make considerable growth, through the winter months, for it is upon the wood made during that time that the flowers grow in succession. Therefore, not only keep the soil well moistened, but feed it regularly with weak manure water, or give a dressing of concentrated manure. It is surprising what a difference this makes: the effect upon the foliage is magical, and unless the leaves are far gone into the sere and yellow.

they will quickly assume the deep glossy hue of perfect health and vigour.—J. C. B.

3651.—**Plants for Rooms.**—"H. R." wishes to know what plants can be grown where gas is burnt. I have eight rooms in my house fitted with gas, and my window plants are the admiration of all who see them. I grow all sorts of greenhouse plants. If "H. R." wishes to be successful he must see that all his pipes are in good condition, so that there is no escape of unburnt gas. He must have a light ready at the burner when he turns the tap. It s the unburnt gas that injures the plants. If "H. R." will attend to the above he may grow almost any plant he likes.—S. RHODES, *Gee Cross, near Manchester.*

3699.—**Material for Rockwork.**—Get some ordinary coke in pieces to suit your wants, and soak them in some very thin plaster of Paris and water till they are covered, and then let them dry. I dip them in and out of the solution, which must be kept well mixed to prevent the plaster settling at the bottom, and then place them on boards to dry. When you have sufficient quantity, and they are perfectly dry, place them in the position required, and then pour over them some more of the solution a little thicker than the other; they will stick very firmly and have a very nice appearance. Of course, you can alter the colours from white to a light brown by adding a little cement. If you want to make it stand out from the wall without starting at the ground, you can do so, by first cleaning the wall and then pouring some of the first solution on it, and then, after soaking the coke, make some thick plaster, and, taking each piece separately, place sufficient on the back of it to make it stick to the wall; you will be able to leave out a piece here and there, so as to place the soil for ferns, and put in the piece afterwards. I think you will find this the cheapest and most effective way of making a very nice fernery. I shall be glad if you will give the readers of GARDENING the results, as others may wish to try it; and as I have had some valuable hints through the paper, I am only too happy in giving my experience in this small matter.—M. L. A.

—— Roman cement is of a brown colour, and is as good for forming rockeries as Portland cement.—A. B. N.

3655.—**American Cranberry (Oxycoccus macrocarpus).**—I should think this Cranberry would do well in South India. If properly cultivated it is a very beautiful plant, with delicate trailing purple stems and glossy lace-like foliage. Its flowers are splendid amber, and are followed by crimson-tinted berries. These combine to render it a most interesting as well as ornamental plant. It makes a beautiful pot plant, or may be grown in pans of peat, with a little coarse silver sand added, or even sandy loam will do. Place the pots or pans in 1 in. of water, and as soon as the fruit is set, reduce the quantity of water, and when the fruit begins to ripen, keep the plants nearly dry and well exposed to the sun. Thus treated they will be found very beautiful plants, completely hiding the pots or pans. Many people have endeavoured to cultivate them in England, and have failed, for this reason: Some books class them as aquatic, others as Bog Plants, whilst, in reality, they are neither. They like moisture, but not to the extent of aquatics. In their native habit they are a luxurious weed, and produce a great quantity of fruit, and where the best and largest quantity grows the land is only flooded a little sometimes. During dry summer weather they are exposed to a scorching sun, and appear to be dried up. This shows they are not so fond of water as some people think them to be.—J. P.

3665.—**Rabbits Gnawing Trees.**—I use soot, milk, water, and a little coarse fat of any description. The liquid is heated to melt the fat. Mix as paint, and apply with a brush. I have used it for years with good effect. It requires doing once a year.—J. PRIOR.

3590.—**Cutting Back Hydrangeas.**—I have grown Hydrangeas for many years, and some fine ones too, in pots. I planted a good strong plant in front of a lady's house and it grew well, and bloomed and made good strong wood for the next season. I was surprised one day to find it all cut down by the man that had been to clean up the front of the house. I told the owners they would have no bloom next year, and they found it so. I have known others to do the same with a like result. It is quite right to cut away the old wood that bloomed this year, but leave the new wood for next year's blooming.—T. S.

3653.—**Chinese Miniature Plants.**—In reply to a question on this subject which appeared lately in GARDENING, I copy the following extract from "Fortune's Tea Countries of China," and I shall be glad if my exercise affords acceptable information to your readers—GEORGE OSCAR ANDREWS:—"The gardens of the mandarins in the city of Ning-po are very pretty and unique: they contain a choice selection of the ornamental trees and shrubs of China, and generally a considerable number of dwarf trees. Many of the latter are really curious, and afford another example of the patience and ingenuity of this people. Some of the specimens are only a few inches high, and yet seem hoary with age. Not only are they trained to represent old trees in miniature, but some are made to resemble the fashionable pagodas of the country, and others different kinds of animals, amongst which the deer seems to be the favourite. Junipers are generally chosen for the latter purpose, as they can be more readily bent into the desired form; the eyes and tongue are added afterwards, and the representation altogether is really good. . . . . The dwarfed trees of the Chinese and Japanese have been noticed by every author who has written upon these countries, and all have attempted to give some description of the method by which the effect is produced. The process is in reality a very simple one, and is based upon one of the commonest principles of vegetable physiology. We all know that anything which retards in any way the free circulation of the sap, also prevents to a certain extent the formation of wood and leaves. This may be done by grafting, by confining the roots, withholding water, bending the branches, or in a hundred other ways, which all proceed upon the same principle. This principle is perfectly understood by the Chinese, and they make nature subservient to this particular whim of theirs. We are told that the first part of the process is to select the very smallest seeds from the smallest plants, which is not at all unlikely, but I cannot speak to the fact from my own observations. I have, however, often seen the Chinese gardeners selecting suckers and plants for this purpose from the other plants which were growing in their garden. Stunted varieties were generally chosen, particularly if they had the side branches opposite or regular, for much depends upon this; a one-sided dwarf tree is of no value in the eyes of the Chinese. The main stem was then in most cases twisted in a zigzag form, which process checked the flow of the sap, and at the same time encouraged the production of side branches at those parts of the stem where they were most desired. When these suckers had formed roots in the open ground, or kind of nursery where they were planted, they were looked over and the best taken up for potting. The same principles which I have already noticed were still kept in view, the pots used being narrow and shallow, so that they held but a small quantity of soil compared with the wants of the plants, and no more water being given than what was barely sufficient to keep them alive. Whilst the branches were forming, they were tied down and twisted in various ways; the points of the leaders and strong growing ones were generally nipped out, and every means were taken to discourage the production of young shoots which were possessed of any degree of vigour. Nature generally struggles against this treatment for a while, until her powers seem in a great measure exhausted, when she quietly yields to the power of art. The Chinese gardener, however, must be ever on the watch, for should the roots of the plants get through the pots into the ground, or happen to be liberally supplied with moisture, or should the young shoots be allowed to grow in their natural position for a short time, the vigour of the plant which has so long been lost will be restored, and the fairest specimens of Chinese dwarfing destroyed. Sometimes, as in the case of peach and plum trees, which are often dwarfed, the plants are thrown into a flowering state, and then, as they flower freely year after year, they have little inclination to make vigorous growth. The plants generally used in dwarfing are pines, junipers, cypresses, bamboos, peach and plum trees, and a species of small-leaved elm."

3667.—**Violets in Autumn.**—From this time forward one cannot rely upon a constant supply of Violets, unless the plants are guaranteed against extremes of weather by the shelter of a glass roof. In the first place, however, every necessary attention must have been paid them throughout the summer. For although the Violets will give a percentage of bloom with a minimum of care, good flowers and plenty of them cannot be had without some attempt being made at special culture. The great point is to get highly-developed crowns by the beginning of the autumn; and to effect this, young plants must be set out in well-prepared ground early in spring if possible, although good plants may be obtained by planting out anywhere between March and June. These plants must be taken up in October and planted in a frame and covered in frosty weather, or they may be potted and placed in a cool greenhouse.—J. C. B.

3700.—**Cost of Greenhouse.**—Having just built a very small greenhouse, I can give "Wardsley" an idea of expense. Mine is only 10 ft. by 7 ft., but for same, or nearly same price, I might have made it at least a foot wider, as I had materials over. Total cost just under £12, made as follows:—

Brickwork and concrete floor ...	£2	10s.	0d.
Timber	3	5	0
Glass	1	15	0
Carpenter's time	2	10	0
Sundries — paint, putty, locks, hinges, cane run, &c.	2	0	0
	£12	0	0

I used red pine and 21 oz. glass.—T. D.

—— I built a greenhouse from directions given in GARDENING, 21st June, 1879, the design being modified by circumstances. Mine is a lean-to, 7 ft. 6 in. by 6 ft. 4 in., with a wall at back and at one end, and the door at the other end. The height is 8 ft. at back and 5 ft. 6 in. in front, which gives sufficient fall to keep out the water at the laps of the glass. I used stouter material than that suggested, the corner posts being 3 in. square, and the quartering 3 in. by 2¼ in. I bought the sash bars ready made, and also a second-hand door. With these exceptions I did all the work myself. I glazed the roof and door with 21 oz. glass and the sides with 15 oz., and gave the woodwork three coats of paint. Ventilation was provided for by a hinged light in the roof, and another in front. As my plants got drawn this summer, I came to the conclusion that the air did not circulate freely enough, so have lately made two sliding ventilators in front, below the staging, and two at the back, just under the roof. The back wall being a low one, the upper part was filled in with woodwork. To begin with, I only put staging along the front, 2 ft. wide, but have since added more, and also shelving, the cost of which is not included. The time occupied was about 260 hours, spread over two months, and the outlay £4 5s. 7½d. I shall be pleased to give more details if necessary.—A. MILLARD, 282, *Dalston-lane, E.*

3649.—**Culture of Water Melons.**—The Water Melon may be grown in this country much in the same way as are the ordinary kinds, but the plants must get almost unlimited supplies of water at the root when bearing. In Germany the Water Melon is much grown and succeeds well in the open air; but our climate would not be warm enough for it in ordinary summers unaided by glass. The Water Melon likes a free rich soil, such as the turnings out of hotbeds, and if started with a little bottom heat will thrive amazingly in such a compost, which is preferred by the German gardener to any other for this purpose. There is no need for artificial warmth, the superior climate engendered by the glass roof being all that is required to bring it to perfection.—C.

3663.—**Culture of Zinnias.**—The seed should be sown in gentle warmth about the latter end of March in the following manner:—Well drain 4½-in. pots, and fill them to within ½ in. of the rim with fine sweet soil, consisting of one-third loam and two-thirds leaf-mould, adding then a goodly portion of silver sand. Water the soil, and allow superfluous moisture to drain. Sow the seed on a firm surface, and cover thinly with very fine soil, covering with a pane of glass, and shading until the young

plants appear above ground. When large enough to handle prick them off into pans, boxes, or 6-in. pots, and when they have fairly struck root transfer them to a frame, gradually inuring them to a free circulation of air, pulling off the lights in fine weather, so that by the beginning of June they will be in good order to set out in the open ground. To grow the Zinnia well it must enjoy a free root-run in well-stirred soil, requiring at the same time plenty of good nourishment. The piece of ground intended for their reception should now be selected, with a view of affording a careful preparation. If the natural staple is holding, and consequently unduly retentive of moisture during the winter, lay it up now in ridges, selecting a dry, frosty day for the operation. Allow it to remain in this condition until the middle of March, when it may be levelled, and a good coat of manure forked into it. The dung cannot well be too rotten, as it is important that it be equally distributed throughout the soil and everywhere within reach of the roots. This being accomplished, let it lay until planting time arrives, when it should again be well manipulated with a four-tined fork, breaking every lump, and thoroughly incorporating the dung with the soil. This preparation of the soil is absolutely necessary, and forms the keystone of success, and I may add that without it there is but little chance of bringing this fine annual to anything like perfection of growth. Of course, in the case of light soils this amount of labour is not indispensable, but in their case the addition of a little pulverised clay, loam, or good holding soil would do much to ensure complete success, and where the object is to attain exceptional excellence such a slight amount of labour and expense need not be grudged. The Zinnia is a gross feeder, and must be copiously watered when the need for so doing is observed. There is, however, one point in connection with the culture of this plant which the grower must not overlook—the roots must be well mulched with good manure, or failing this a good dressing of some such manurial ingredient as Clay's Fertiliser may be given, mulching with grass or litter of some kind. In conclusion, let me add that a sunny and airy situation should be selected, for the Zinnia is a child of the sun.—C., *Byfleet.*

3643.—**Draining a Garden.**—The most simple plan by which "W. G." can drain his proposed garden is to sink a hole in the form of a well in the most convenient spot, and lay the pipes to it. The well should be a few feet deeper than the lowest point of the drain, and should be walled round with half bricks set dry; if the soil is not a very strong clay the water will gradually filter away. If the water is of any value a pump could be put in at a small cost. Timber or anything will do to cover the well, upon which the soil can again be placed, and the whole is out of sight.—Architect.

3657.—**Striking Rose Cuttings.**—Roses may certainly be propagated at the present time, but they would not be large enough to be of any decorative value until they had the advantage of a season's growth. A shady situation should be chosen, where the sun does not come in spring, and the cuttings should be firmly inserted in fine sandy soil to quite two-thirds of their depth. Only fine, strong wood of the current season's growth should be taken, and each cutting should be cut to three or four eyes.—J. C. B.

3656.—**Propagating Bougainvilleas.**—These are easily propagated from wood of the current season's growth, taking them off when the shoots are in a somewhat succulent condition, that is to say, before the wood has become hard. Insert them in well-drained pots of sandy peat, surfacing with silver sand to prevent damping, and place them in a close frame in a warm house.

3659.—**Wintering and Propagating Leucophyton Browni.**—This plant may be wintered in a temperature of from 40° to 50°, and the young shoots may be taken off early in the year, and struck in warmth, or they will make root in a cool structure freely enough after April.—B.

3661.—**Clematis Heneryi.**—About the latter end of March shorten back the shoots to two-thirds of their length, and apply a good mulch of strong manure. Water copiously in hot weather, and train the young shoots regularly as they grow.—J. C.

3662.—**Tulips for the Open Air.**—Some of the best single kinds are Duc Van Thol and its rose, scarlet, white, yellow, and red varieties, Pottebakker, Rosa Mundi, and Vermilion Brilliant. Doubles—La Candeur, Rex rubrorum, Duc Van Thol, Tournesol (red and yellow), and Gloria Solis.—B.

2758.—**Creepers for Covering Greenhouse Walls.**—I have a frame in a small hothouse over a 4-in. hot-water pipe and a vaporising pan, which has been used for striking cuttings in, but I am now desirous of planting some climbers in it to cover the end wall (eastern aspect and plenty of light. I have the following climbers in pots: Jasminium sambac fl.-pl., Stephanotis, and Hoya carnosa? Which of the three would give most satisfaction as regards profusion and long continuance of bloom?—W. H. J. [The Stephanotis would probably be the best of the three, but the Jasmine would supply a good crop of flowers. You must make a bed of good soil at least 2 ft. deep and 3 ft. square, if you wish for really good results.]

3776.—**Christmas Roses.**—*Norfolk.*—If for pot culture give good drainage, using turfy loam and leaf mould in equal parts. They will, however, do in any good garden mould with sand added. As you have some charcoal break it up to the size of nuts and add a handful to the soil. If for outdoor culture plant in well-drained soil and let them alone. When in bloom cover them with a frame to throw off rains, &c.

3777.—**Privet Hedges.**—*Privet.*—The present is a good time to plant privet. It is propagated both from seed and cuttings—but your best plan would be to buy young plants from a nursery. They are very cheap, and you will gain a couple of years. Well trench and drain the ground, add plenty of rotten manure, and plant in double lines 18 in. apart. The distance from plant to plant in the row must depend upon the size of the plants you get—that is, if you want a hedge as quickly as possible.

3778.—**Pruning Out-door Vines.**—Is the present a good time to prune an out-door vine? And if so, would it be advisable to cut as much old wood out as possible, as it has never done any good?—Kiko. [Prune any time from now to February. Cut out some of the old wood, and remove all unripened shoots, laying in the best ripened wood, which should be slightly shortened.]

3779.—**Plants for Graves.**—What would be the best plant for those metallic crosses which are placed on graves during the winter?—H. N. [Any of the green stonecrops (Sedums) would do, and a few bulbs of snowdrops or crocuses could also be planted with them.]

3780.—**Tuberoses.**—*Norfolk.*—Several answers as to the culture of these have lately appeared in Gardening.

3781.—**Chrysanthemums.**—*J. V. K.*—Cuttings always make better and healthier plants than old stools which are divided.

3782.—**Potatoe Onions.**—*E. C.*—Plant in January or February in rich soil 3 in. deep. When fairly up, earth up a little like potatoes. If you wish to keep them during winter, remove the earth from them, say, in July, and expose the bulbs to the sun as much as possible.

3783.—**Tulips in Pots.**—*W. H. B.*—Keep them in a cool place out of reach of rain. Although they have been potted a month they may not yet have started growth. Turn a pot out and see if there are any roots.

3784.—**Crown Imperial.**—*Amateur.*—The bulbs should be planted 2 in. deep, and if a little manure can be placed round the plant when well up, it will assist them.

3785.—**Clematis Jackmani.**—*Amateur.*—As the plant is a small one, you had better keep it in the greenhouse till April, and then plant it out—in a cool greenhouse we mean, of course.

3786.—**Chrysanthemum Cuttings.**—*C. P.*—Take the cuttings from the young shoots which spring from the base of the plants after flowering.

3787.—**Jasminium grandiflorum.**—*A. A. M.*—Do not re-pot till spring, when the plant has done flowering. If it is pot-bound give it a little manure water occasionally. The best time to prune is after the plant has done flowering. Keep it close to the glass and exposed to the sun during summer in order to ripen the wood.

3788.—**Maurandya Barcleyana and Œnothera Drummondi.**—*L. B. Heulaugh.*—The Maurandya is a perennial under glass, but out of doors is always used as an annual. Œnothera Drummondi is an annual.

3789.—**Salting Asparagus Beds.**—*A. A. M.*—February is the best time for this operation.

3790.—**Ranunculus in Pots.**—*J. R.*—Plant now in 6-in. pots, using light sandy loam, to which has been added a little well-decomposed manure.

3791.—**Hot Water Apparatus.**—*J. R.*—See our advertisement columns.

3792.—**Fuchsias.**—*Scotus.*—Keep the plant rather dry till spring. When it shows signs of growth prune it in if necessary, and when the young growths are well started shake the soil from the roots, and pot the plants in the same sized pot, using fresh mould. Pot into a larger pot as the summer advances.

3793.—**Auticlea Glauca.**—Will this do in a pot plunged in ashes in cold frame, the winter? [Yes.]

3794.—**Oxalis Bowei.**—Would this do in pots in cold frame? When does it flower? [Yes. It flowers in early summer.]

3795.—**Pruning Young Vines.**—*Thos. Clark.*—If the vines are small, cut them down to within two eyes of the soil—pot into larger pot in spring—using good turfy loam. When growing freely apply liquid manure water occasionally, or top dress with manure.

3796.—**Violets.**—*W. A.*—See article in last week's Gardening.

3797.—**Obtaining Plants.**—*Dr. G. W.*—Any of the plants mentioned in Gardening may be obtained through any respectable London nurserymen, some of whom advertise in our columns.

3798.—**Budded Roses.**—In July I budded some Roses, which began growing at once, and have now shoots from 5 to 10 in. long. I am told they will not live over the winter, but as they are very strong I don't see why they should not. It is said budded briar should not be moved for two years. I want to know if it would be safe to move mine next spring.—T. G. [Protect them with a little common dry fern or straw. They may be moved in April with success, but it would be better to to leave them till autumn.]

3799.—**Chrysanthemums after Flowering.**—I have some large flowering Chrysanthemums in Pots, which have thrown up suckers. What must I do with them? Must the old plants be cut down when done blooming, or will they bloom again next year if left? [Cut them down after blooming, and in spring take off some of the young suckers, 3 in. long, and insert them in small pots of sandy soil in a frame, or later on they would strike out of doors. Pot on as required.]

3800.—**Tuberoses Beganis.**—*C. M. M.*—These will do well in a greenhouse from which frost is excluded, or if kept up to 45 or 50 deg. they will do better and flower earlier. Procure some bulbs in spring, and pot them at once in any light rich soil. Keep the soil just moist, and as the pots get full of roots shift into larger pots. They flower better in comparatively small pots than in large ones if supplied with manure water, or a little artificial manure occasionally.

3801.—**Fuchsia splendens.**—Will Fuchsia splendens flower in a window, or does it require heat?—S. G. [It will flower in a window during summer and autumn but in winter it must have more heat than a window generally affords.]

3802.—**Pruning Clematis.**—Should Clematis Jackmannii be cut down now, or in the spring?—S. G. [Now. Mulch with rotten manure afterwards.]

3803.—**Lapageria Rosea.**—I planted a healthy-looking specimen of Lapegeria rosea at the end of September in a rather dark corner of my greenhouse. It still looks well, but does not grow; is the situation the cause?—C. H. [It will grow well in spring, no doubt. Keep the soil moist.]

3804.—**Planting Pear Trees.**—*Lover of a Garden.*—If the weather is open you may plant at once, but if left till March there will be no harm done.

3805.—**Planting Vines.**—*Indicus.*—Young vines raised from cuttings will do as well as those raised from "eyes," if planted properly.

3806.—**Begonia Leaves Falling Off.**—I have three or four plants of the large-leaved Begonias. I keep them in my porch window or the hall. Now the leaves are beginning to droop, and the stems are soft—what is the reason of this? Last year they were in a cool conservatory, and they went in the same manner till all the leaves came off—is this right?—G. H. M. [Unless you have a temperature of 50° to 60° you cannot keep them growing through the winter. Keep them rather dry, and secure from frost, and they will start afresh in spring.]

3807.—**Soot for Vine Border.**—Is soot a good manure for inside vine border?—J. Ingall. [Yes, if mixed with soil as a top dressing.]

3808.—**Indiarubber Plant.**—I have one of these plants 39 in. high, and for a foot from the pot it has no leaves. Can anything be done to make it throw out the leaves? Can they be made bushy plants of? Are they best kept through the winter in the room with fire and gas, or in a room without either?—A. M. K. [Keep the plant in a warm window till spring, then cut it down to within 3 in. of the pot. When it throws out young shoots, remove all but one, the strongest, if you want an upright plant. If you want a bushy one, leave all the shoots that are produced.]

3809.—**Wire Trellises for Creepers.**—*Enquirer.*—Galvanised wire is said to be detrimental to the growth of plants. Your safest way would be to give the wire a couple of coats of paint.

3810.—**Virginian Creeper.**—I have a Virginian Creeper which has not fastened itself to the brick wall of my house, although throwing out feelers with a small ball at termination, therefore has to be nailed up for training. I understood its habit was similar to Ivy, and did not require support. [Veitch's Virginian Creeper (Ampelopsis Veitchi) requires no support, but the ordinary kind does, except in a small state, and against a damp wall.]

3811.—**Cytisus in Window.**—What had I better do for my Cytisus? It was given me in full blossom in the spring. As soon as it had done blooming I turned it out of doors. About a month ago I brought it in, apparently in a healthy condition; now the leaves have nearly all fallen off, and I fear I shall lose it altogether. Should I prune it at all? I have no glass in which to keep it.—M. J. [It does not get air enough After flowering in spring clip in all the shoots with a pair of scissors. Plunge it out of doors, giving it plenty of water. Give it now a little clear soot water.]

3812.—**Deutzia Gracilis.**—My plant of this has looked well up to within the last week, and now all its leaves have turned yellow, dried up, and fallen off. Can you tell me if it is natural to the plant at this time of year? I bought it in the spring in full flower, and it has been the brightest plant of all in my room, which is looking west. I re-potted it after flowering. The roots are rather above the earth now. Ought they to be so? Should it be cut back, and when? Can it be raised from cuttings or slips?—Deutzia. [It is natural for the Deutzia to lose its leaves at this season. It will doubtless flower in spring if the wood is ripe. After flowering cut back all the old wood to within 3 in. of the pot, and young shoots will be produced from the bottom. Keep it in a sunny window, and when the weather gets warm plunge it out of doors in a sunny position, keeping it well supplied with water. Take it indoors again when it has shed its leaves. Do not train the shoots at all. Deutzias can be raised from cuttings of half-ripened wood in August.]

3813.—**Plants Losing their Leaves.**—I have a small greenhouse, heated by hot-water pipes. The leaves of my Rose trees, Fuchsias, Azaleas, &c., go yellow, and drop off. What is the cause?—Delta. [If the Rose trees have been growing all the summer they are sure to lose their leaves now. The Rose is not an evergreen. The same remarks apply to the Fuchsia. Azaleas often lose some leaves at this season. Perhaps they may be dry at the root. Put the pots in a tub of water, and if air bubbles rise from the soil let them soak for half an hour.]

3814.—**Potatoes Sprouting.**—I have saved some early Ash-leaf Potatoes for planting in spring. On examining them lately I find some have sprouts an inch long or more. I should be glad to know if they are still fit for planting, or if this sprouting has injured them as seed Potatoes?—H. H. R. [Rub off the sprouts, and lay the Potatoes in the coolest place possible, excluding frost of course. They must not be kept in a bag or box in a bulk, but be laid out thinly on a board, in a loft or some dry cellar.]

3815.—**Plants in Wall and Screens.**—Will Cotoneaster Symondsii succeed on a wall which gets the early morning sun only? What treatment does it require beyond training? And also kindly advise me as to a creeper suitable to cover open trellis work in the same situation, which I have erected to hide my outhouses from my garden?—A. D. T. [The Cotoneaster only wants to be kept nailed to the wall. Ivy is the best thing you can have for a screen.]

3816.—**Daisies on Lawns.**—*A. D. I.*—The present is an excellent time for digging daisies out of lawns. The ground being soft the roots will come up easily.

Names of Plants.—*W. T.*—Flower of the Edelwiss. —*Sea-weed.*—Euonymus europæus.—*X. L.*—1, Neprodium (species); 2, Blechnum (species); 3, Pellæa hastata; 4, Adiantum assimile; 5, Polystichum aculeatum.—*Dunedin.*—Cannot name your immature fronds.—*A. McC.*—Plumbago Larpentæ.—*G. W. O., Teignmouth.*—Boussingaultia baselloides.—*G. Y.*—1, Begonia Richardsi; 2, Cyrtomium falcatum; 3, Asplenium Trichomanes; 4, Adiantum reniforme; 5, Asplenium maritimum; 6, Adiantum hispidum—*M. M.*—1, Asplenium bulbiferum; 2, Nephrolepis exaltata; 3, Cryptomium falcatum.—*Moss Side.*—Polystichum aculeatum.—*Eittap*—Funkia undulatifolia. Lift it and pot it, and place it in a frame or window for the winter. Plant out in spring.—*R. H.*—1, Tradescantia zebrina; 2, not recognisable.—*C. B. T.*—1. Justicia speciosa; 2. Centrum auranticum; 3, Salvia splendens.—*Ruby*—Cissus discolor, a stove climber.—*E. W. S.*—Cassia corymbosa.—*Rev. A. C.*—Catillac, one of the best of cooking Pears.

QUERIES.

3817.—**Heating Power of Coil.**—How many feet of 4-in. piping can be kept thoroughly heated by a coil made of 14 ft. of piping, 1 in. bore? The coil is five complete rings.—K. G. W., *Hull.*

3818.—**Winter Treatment of Amaryllis and Agapanthus.**—What is the proper winter treatment of the Scarboro' Lily, Agapanthus, and Amaryllis, as regards watering, re-potting, &c.?—Alpha.

3819.—**Ants in Greenhouses.**—My greenhouses being infested with ants, I should be glad of some information how to eradicate them. I have tried several remedies, but all have failed. A correspondent, p. 418, recommends arsenic mixed with honey as a speedy cure for them. I have tried it, but find they will not touch it.—W. H.

3820.—**Raspberries on North Wall.**—Would Raspberries thrive and fruit well if planted against a north wall, on a border sloping downwards from the wall?—Fidus Achates.

3821.—**Myrtles from Seed.**—I have a Myrtle that has seeded this year. Could any of your readers inform me in what kind of soil I should sow the seeds, and at what time of year?—Ignorance.

3822.—**Plants from Stiff Clay Soil.**—What plants will cover a border, in front of evergreens, on a clay soil, most quickly?—E. S.

3823.—**Glazing without Putty.**—Can any reader inform me, from experience, whether any system of patent glazing without putty answers for a vinery or greenhouse? Are they free from drips, and do they keep the heat in as well as a house glazed with putty?—W.

3824.—**Renovating Beds of Lily of the Valley.**—I have a bed of Lily of the Valley which has very much degenerated. Can any reader suggest a remedy?—Monk.

3825.—**Removing Glass from Greenhouses.**—Can any reader inform me if there is any simpler plan of unglazing glass than the old one of cutting away the hard putty; also, is there any sort of putty, which, although setting hard, could be softened in any way, after some years, so as to allow the unglazing of the glass?—Putty.

3826.—**Vines and Rats.**—My Vines have been getting dreadfully barren—one was eaten off close to soil—and I fear the roots of all are being eaten away, as holes are seen where the rats seem to burrow in the "drainage" of border. They laugh at all traps, and also all bottles and other stuff sold for their destruction. Arsenic mixed with meal used to kill all in Devon, where one could get it by signing one's name, but, in London, druggists seem to fancy that all who apply for such, for rats, are would-be-homicides! Can any one tell me how to exterminate these pests?—C. Mabor.

3827.—**Lavender Culture,**—Information respecting the growth of this and probable expense per acre, &c., will be thankfully received.—South Devon.

3828.—**Preserving Skins of Birds.**—Can any reader inform me the best way of preserving bird skins, to keep the moth from them?—W. W.

3829—**Climbers for Trellis.**—I have a wire trellis arch over a stream about 15 ft. wide, which I wish covered with creepers—what Roses would be best. Also, will Clematis and Honeysuckle do well? It is a damp place, and on one side the roots will be nearly in the water. Should be much obliged for any suggestions.—A. Wilder.

3830.—**Garden Polyanthus.**—In Gardening, Nov. 20, some notice of the old florists' Polyanthus is given, and "A. D." mentions, as good ones, Buck's Geo. IV., Lancer, Exile, Cheshire Favourite, President, and Early Lincoln. He also says that "they should be obtained from some bonâ-fide grower, as there are not a few wretched sorts in commerce under these names." The prices, he tells us, range from 2s. 6d. to 3s. 6d. In a book called "The Flower Garden," published in 1840, Buck's Geo. IV. is priced 1s., while another of his raising, the Marquis of Anglesea, is marked 20s. Geo. IV. is now, I believe, much higher in price, as also is Lancer, which was then 1s. It is difficult, however, to obtain these old fashioned but charming plants, and it would be a boon if your correspondent would help one, who would like to grow a few of them, to some knowledge of the retreats where they lie hid. About seventy named sorts are mentioned in the above-named book, and it is an interesting question—What has become of them?—H. S.

3831.—**Holly for Walking Sticks.**—Will any one inform me the proper time for cutting holly for this purpose, and how to stain the sticks?—Montgomery G.

3832.—**To Grow Mercury.**—Will anyone give me a few directions on the culture of Mercury? I have a bed which has grown too thickly to be of any use.—Montgomery G.

3833.—**Flower for Winter and Spring.**—What could I put in a greenhouse now for decoration at Christmas and early spring? I shall have a fire on all frosty nights, which will keep the house at a moderate degree of temperature. What seeds could be sown for early spring bedding?

3834.—**Planting Roses.**—When is the best time to plant bush roses, and which are the best kinds; also the best time for planting a climbing rose in the greenhouse?—Lover of a Garden.

3835.—**Cineraria Leaves Curling.**—Will some one tell me the reason of Cineraria leaves curling? They are very free from green fly. Would too strong manure water cause it? Thermometer not been below 34.—Anxious.

3836.—**Blanching Celery Indoors.**—At the commencement of November I dug up a couple of roots of green Celery intended for soup, but, by some means, after being placed in a jug of water, they were overlooked for three weeks, at the end of which time it was discovered that the Celery had sprouted, and sent out fresh leaves, but not only was this the case, but the stalks were found to be blanched and crisp. At the same time, though unusually succulent, the flavour was excellent. I shall be glad to know if any readers have made a similar experiment, and with a like success.—B. J. H.

3837.—**Passion Flower Failing in Greenhouse.**—I have a Passiflore cerulea, procured from a nursery this year. Its growth has been good, but no flowers. Can anyone inform me the reason? I have grown it in a 9-in. pot, and treated as directed in Gardening.—G. R.

3838.—**Making a Flower Stand.**—I have an old oak chest, 1¼ yards in length, ¼ yard across, ¾ yard deep, standing under a window facing west, which I wish to convert into a pretty flower stand. Will some one give me an idea how to go about it, and suggest something for training downwards, as well as to fill in the top? It is in a good situation, having plenty of light and afternoon sun.—W. X.

3839.—**Plants for Room.**—I have a small room, without a fire, in which little or no gas is burned, with a N.E. exposure, in which I intend having an oil stove. Will some one say what flowering plants I could cultivate in it—now and in summer?—Dunedin.

3840.—**Wintering Ferns.**—Would some kind reader give me some information as to how I am to keep some Ferns till next year? I have had some Maiden-hair Ferns, Crispis crispendum, and several other Ferns growing in the open room, but now that winter is coming on they are beginning to die down, and I am afraid of losing them altogether. Also some information as to what kind of soil will be best for keeping them in when under cover, as I am having a glass case made for them. Will they come on all right again if I put them into the case, or had I better wait till next spring?—W. J. H.

3841.—**Tropæolum Speciosum.**—I find great difficulty in transplanting Tropæolum speciosum in spring. Would someone kindly state the most satisfactory mode?—A. R. F.

3842.—**Cropping a Kitchen Garden.**—I have just taken a plot of ground for a garden, 78 ft. × 18 ft., and have already turned it up into rough ridges. The soil is a very fair brown loam, and had lime thrown on it about two years ago, when a chapel was built close to it. It is one mile from the sea, on the north-east coast, but sheltered on the east by a hill and a ten-feet wall; the same on the south, and a church on the west, and on the north a terrace of houses about fifty yards away. I want to make a kitchen garden only. What can I plant, and how soon? Also, can I forward any of the seeds, as I have got several boxes with plate and sheet-glass tops, and the bottoms taken out, averaging 24 in. × 18 in., and 15 in. high? What kitchen garden produce is likely to succeed here?—Finem Respice, *South Shields.*

3843.—**Converting Old Lawn into Vegetable Plot.**—Last September I dug up an old lawn of some twenty years' standing, with the intention of converting it into a vegetable bed; but I am at a loss to know how to bring the rank yellow clay into anything like working order. What is the best and quickest way of loosening the clay? Would burnt earth answer the purpose, or should it be thoroughly-rotten manured? It wants something to make it crumble. It is not needed for use until the spring.—W. C. C.

3844.—**The Artillery Plant (Pilea muscosa).**—Will someone tell me the treatment of this plant—the proper soil, watering, temperature, &c.?—S. L.

POULTRY.

Fowls in small Spaces.—I have kept thirty Plymouth Rock Fowls through the summer until the last few weeks. I have reduced them down to eighteen in a house 6 ft. by 3 ft., 5 ft. high, and have not had one death or sign of illness. I clean them out every morning, and sprinkle lime over the house, especially damp parts, and although so crowded I have never seen anything like an insect either in the house or birds. I may add that I make a large hole in the garden, in which I sift the cinders every morning, and they enjoy a bath in the warm ashes, which I have no doubt prevents insects.—R. S.

Food for Geese and Ducks.—In Gardening, Nov. 16, "North Yorkshire" says that he can rear Geese 12 lb. weight in eight weeks, at a cost of 2d. per week, and Ducks at 1½d. Would he kindly say what food he gives to bring on the Geese and Ducks so cheap and quickly? I am anxious to try poultry farming, but don't know what is the best food to use, and should be glad of a hint on the subject.—East Cornwall.

Lameness in Fowls.—Can any reader of Gardening advise me under the following circumstances?—I have a Spanish Pullet, which for some weeks past has been limping about, but she is now quite lame. A careful examination of foot, leg, and thigh, on several occasions, has failed to discover any sore or wound. She feeds well, but is, notwithstanding, a mere bag of bones. I have been recommended to kill her, but should prefer to try some remedy first, if the complaint is one that is amenable to treatment. I may add that my other Pullets (four) seem the picture of health and activity, and to all appearance will shortly begin to lay.—One in a Fix.

Fowls Plucking their Feathers.—Would anyone kindly let me know how to prevent Fowls from plucking the feathers off one another? They make one bleed, and then they all go after it, and we are obliged to take it away. They are penned up.—Subscriber.

HOME PETS.

Silver Grey Rabbits.—Will some reader kindly inform me the average price or value of a buck, doe, and young Rabbits of this breed at six weeks old respectively?—C. H.

Goldfinches.—"W. H. B." probably procured his Goldfinches a little too early in the year. They were too young and not sufficiently strong to withstand cage treatment. I have had some myself which were lost in the same way. Better try older birds next time.—G. F. W.

Different Birds in one Cage.—All the birds that "J. B." alludes to will do in one cage, but the difficulty is in providing proper seed for them all. Mix hemp, rape, canary, linseed, millet, and groats together. If put separate, perhaps the Canaries will eat too much of hemp and linseed, which will not do for them.—G. F.W.

Canary not Singing.—The question which "F. C." asks is the question of many people. The birds have probably been allowed to have a good deal of hemp seed. They will get fat and plump on this seed, but it makes them lazy, and they will not sing. "F. C." had better omit hemp from his usual mixture for a time, and give instead maw seed (a little) and mountain bread.—G. F. W.

Canaries with Long Nails.—I have a Canary which has a long nail on each foot, which causes the bird to stumble. Would some experienced bird-fancier state whether the nail could be cut without injuring the bird?—Amateur.

Curing Rabbit Skins.—Can any reader inform me how to preserve the skins of tame Rabbits without injuring the fur, and so as to prevent smell or decay?—Forester.

Teaching Parrots to Talk.—The grey birds will be most teachable—constancy in teaching, in the same tone of voice, is the secret. A handkerchief thrown over the cage during each lesson keeps his attention fixed. Try the grey Polly first.

Unhealthy Canaries.—Canaries suffering from asthma, which no doubt "W. P." and "C. W. W.'s" are, should have light food, such as sponge cake, bread soaked in milk, chopped egg, as well as their usual food of rape and canary seed (no hemp). Keep out of damp, draughts, and gas. If much oppressed give the following:—Ethereal tincture of lobelia, ten drops; compound tincture of camphor, one drachm; syrup of ginger, three drachms; cinnamon water, one ounce. Put two teaspoonfuls of this mixture to two ounces of water; give it to the birds to drink in the place of their ordinary drinking water; continue till the most distressing symptoms have left, then reduce the dose to one-half, which leave off when well.—P.

Singing Mice.—Can any of our readers inform me where could I procure these pets? I have often heard of them, but never saw any. What sort of singing do they resemble? What is their size and colour?—A. M. R.

Cornish Method of Producing Clotted Cream.—Milk in winter should stand in the pans, after straining, in a cool place full twenty-four hours before placing on a slow *clear* fire, or better still, a hot plate on a close range or kitchener, and must be allowed to remain until a ring forms itself on the cream of the size of the *bottom* of the pan, which will always show itself when sufficiently scalded. Care should be taken to prevent it boiling, or the cream will be spoiled. When ready take it off steadily and carry to a cool place; the slabs or shelves on which it is laid should be slate or marble. The cream can be taken off the following morning or left for twenty-four hours. In summer it must be scalded twelve hours after milking, and cream taken twelve hours after scalding. I consider it a bad practice to disturb the cream to look for air bubbles rising on the milk beneath, as given by "G. N. B." last week. The formation of the ring is a true indicator.—Experience.

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ILLUSTRATED.

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DRACÆNAS.

THESE are very common inmates of plant-stoves and greenhouses, some of the species requiring the former, others the latter kind of protection. They are all exceedingly attractive, some of them having most beautiful and conspicuous foliage, whilst their habit is such as to render them very useful for all kinds of decoration. They are easily grown and difficult to kill, although to bring them down to a ragged unsightly condition (as may often be seen in plants with their bottom leaves half decayed and the younger ones blemished at their points) is a very simple matter. Small plants are generally the most needed and are serviceable for room and vase embellishment; and, when used for this purpose, for which they are more and more in demand, they remain for a long time in perfection. Large plants are required frequently for staircase, balcony, and entrance-hall ornamentation. The drooping foliage of some, and the upright leaves of others, and the tropical appearance of all, render them splendid objects when used in such places. Some of the most tender species are sometimes placed in the sub-tropical bed or garden during the summer. This treatment can only be given them in southern counties. Dracænas should be very extensively cultivated on account of the extreme easiness with which they may be propagated; a single stem 3 ft. in height will produce three dozen young plants. When any plant becomes uselessly tall or bare of foliage, it should be cut into pieces about 1 in. long. These may either be put into a bed of soil on a hotbed, or be placed thickly in pans filled with a mixture of peat and silver sand. After watering the pans should be plunged in a bottom-heat of 85° or 90°; here they should not be allowed to suffer from want of water, although being plunged, the quantity required will not be great. The young plants sometimes come up irregularly, but none should be taken from the pan until they are all fit for removal. As soon as this is the case, the whole panful may be carefully turned out, and potted singly into 3-in. pots, without damaging the young roots. They should again be plunged in the same place, and kept there until they show signs of growing; after that they may be removed, and placed on a shelf or some other hard bottom in the plant stove or propagating frame, where growth should be encouraged until they are ready to be shifted into larger pots. Hitherto, they will have been potted in the same material as that in which they were rooted, but at this shift, peat, sand, loam charcoal, and a little decayed Mushroom dung may be introduced with advantage. The mixture must not be too fine, but sufficiently so to admit of a certain amount of all the in-

ONE OF THE MODERN DRACÆNAS (D. ALBO-MARGINATA).

gredients being put into a 5-in. pot. This size will grow well-furnished plants until they are 18 in. or 2 ft. high; when, if they are wanted of larger dimensions, they must be shifted on, the same mixture being used as that just referred to. After being shifted from the small pots, they generally do not require more root-room for one season than is afforded them in the 5-in. pot, so that the following spring is a suitable time for potting on large plants. Very fine plants can be grown in 5-in. pots, which is the most convenient size for decorative work. Another means of propagating is found in the root. Large plants form a number of thick leading roots at the base of the stem; at the end of each of these there is an eye. If an old stem be cut up these eyes should be cut off, and put in together with the other eyes. In shifting well-grown plants into larger pots, these eyes may be taken off during the operation without injuring or checking the progress of the plant. In this way a fresh stock may be raised without even cutting down a large plant; and when only a few are required, these root-growths are preferable to any other. Sometimes the tops are put in as cuttings, but these seldom make such good or handsome plants as those from eyes. When propagated and in growing order, their daily requirements are few. A slight shading is necessary at all times during strong sunshine. They are particularly sensitive to dryness at the root, which often entails the loss of the lower leaves; and the points of the tender young foliage are sometimes allowed to wither through the same cause. Dracænas are sometimes grown in pans about 10 in. in diameter and 2 in. deep with good effect. The young plants are placed in these pans when quite small, so that the root is easily covered with soil. When this is done, some of the finest kinds of the Selaginellas and the pretty creeping Panicum variegatum are planted on the surface of the pans, a method which produces a remarkably pleasing effect, as the creepers form a cushion of green and white underneath the drooping high-coloured leaves of the Dracæna. As regards varieties, there are now some in commerce which quite eclipse all the old kinds, that is, as far as boldness of character and brilliancy of the leaves are concerned. Mr. Bause has, during the last five years, raised in Mr. Wills' nursery at Anerley (now the General Horticultural Company) many noble kinds of Dracænas, from which we select the following as being among the best:—

Dracæna albo-marginata, which we now figure, is a strong-growing variety of stocky growth, with large, recurved leaves, measuring 4 in. across, of a bright green colour, with a clear, narrow, margin of white.

D. anerleyensis is one of the bold-habited free-growing series, with oblong, spreading leaves, the younger ones more erect. They are of a dark bronzy green, with a very bold and broad variegation, marginal and sectional, of deep rosy-red, which in all the younger stages has a decided purplish tint. This pale purplish hue flushing the greenish-white of the youngest central growth, gives it a very distinct and pleasing aspect, and renders it an effective plant.

D. Barroni is a striking variety. The leaves are oblong, 5½ in. broad, spreading or half-drooping, of a dark bronzy-green, with a broad and irregular edging of mottled magenta on the younger leaves, the edges of the older leaves being of a deep magenta colour. The edges of the leaf-stalks are of a rosy-pink; the young leaves come first of a creamy blush, with a rosy tint on the under-surface, and in some cases they take on this roseate hue on the upper side. It is a fine and noble-habited variety of great beauty.

D. Bausei is a highly-coloured and most effective variety; the growth is free and stocky, the recurved oblong leaves, which are about 4 in. in width, closely overlying each other; the surface is of a dark bronzy hue, the margin being crimson, narrow in the lower leaves, becoming broader and more developed in the upper ones, the youngest and uppermost being broadly and brilliantly edged with deep rose, and the margins of the leaf-stalks also richly coloured.

D. Elizabethæ is a very handsome variety and remarkably distinct, not only on account of its variegation, but also of the tendency of its leaves to curl under volutely. It is of dense habit with broad, strongly recurved leaves, measuring 5 in. across, of a dark green colour, with a dark midrib, and a narrow edge of bright rosy-crimson on the older leaves, and with a broad-margined variegation of deep pink and creamy white on the younger leaves, the leaf-stalks being conspicuously coloured of a rosy tint.

D. Ernesti.—A well-marked variety, of erect slender habit; the leaves are lance-shaped, 1½ in. wide, tapered to a point, drooping or recurved, of a bronzy-green colour, with dark crimson edge; on the young leaves the parts are coloured rosy-pink and creamy-white. It is one of the very best of the narrow-leaved, yet compact kinds, and will become a general favourite for table decoration, being of a very hardy constitution.

D. Gladstonei.—A variety of bold habit, with densely set drooping or recurved oblong leaves 4 in. broad, of a very dark bronze colour, the younger leaves breaking into a deep crimson suffused with salmony-rose. It will form a valuable plant for decorative purposes, being of a very hardy constitution, of very free and erect growth, and calculated to form a tall specimen.

D. ignea.—A very striking variety, of medium stature and development, belonging to the flame-red series. The leaves are arching, with erect, rosy-edged foot-stalk, the blades green, broadly edged with a band ¼ in. wide, of flame colour or deep salmony-red, breaking out into streaks and sectional markings in free young growth. It is extremely effective.

D. Leopoldi.—A fine variety, in which the leaves are of an oblong-elliptic form, drooping or recurved, measuring about 5 in. across, the ground colour a bronzy-green, with bright rosy-crimson edge, the younger parts of a lovely pink, flushed in places with a pale tint of coppery-bronze, which gives it a very distinct appearance. The leaf-stalks are also prettily edged with rose.

D. majestica is a free-growing form, with fine and effective variegation. The leaves are oblong, 4 in. broad, with erect foot-stalks 4 in. to 5 in. long, green, edged with salmony-rose, the leaf-blades being very distinctly bordered with ¼-in. wide band of bright flame-red, most developed at the base. This is one of the very finest of the whole series, and well deserves the name assigned to it.

D. Mrs. Bause.—A very pretty dense-habited variety of moderate growth and wonderful colouring, having the leaves drooping or recurved, 9 in. to 12 in. in length, and nearly 2 in. broad, of a bronzy-green colour, margined and striped with deep crimson, the younger and upper leaves often becoming wholly of a deep rosy-crimson. A very richly-coloured and effective kind, rarely exceeding 18 in. in height.

D. Mrs. Wills.—One of the finest and handsomest of all the varieties with white variegation. The plant is of dwarfish, stocky habit of growth, the leaves about 3½ in. wide, erect spreading, the ground colour bright green, the older leaves being striped with white on the green ground colour, and the younger ones very freely variegated with, and in some cases almost wholly coloured, white.

D. Tellingi is a bold-habited sort. The leaves are oblong, 6 in. broad, drooping or recurved, of a bronzy-green, with an edging of bright rosy-pink, which in the older leaves deepen into crimson, the leaf-stalks being also nicely coloured at the edge. It has the boldest and broadest leaves in the whole series, and they are, moreover, remarkably stout in texture.

D. terminalis alba.—This is a most important acquisition, having quite the habit and character of the well-known favourite, D. terminalis, but with white variegation. The ground colour is bright green, with bold pure white variegation, the upper leaves being white, with here and there a bar or band of green; in some cases large sectional patches are coloured white, while the rather elongated leaf-stalks are also edged with white. It will be a useful variety for general purposes as well as table decoration and for market, being of very free growth and remarkably hardy constitution.

D. regalis.—A bold-habited free-growing vigorous variety, having densely set oblong recurved leaves, of a deep bronzy-green, margined unequally with rosy red, and having the leaf-stalks also similarly edged; the younger central growths are broadly edged with cream colour flushed with pale rose. It forms a fine massive and truly regal plant, and from its free growth and its ample foliage is very effective.

D. salmonea.—A tall, slender-growing, and very distinct variety, with the long-stalked, sparsely set, erect, channelled leaves, of a narrow lanceolate form, tapered to the point, 3½ in. broad, the ground colour deep green, with the edges distinctly marked with salmony-pink, which colour is extended down, and very conspicuous on the edge of the petiole. The salmony-tinted, almost flame-coloured leaves, which are paler in the younger ones, are a very distinct feature, and give the plant a very bright-looking aspect.

D. Sidneyi.—A striking variety of the narrow-leaved series. The leaves are long-stalked, erectly spreading, 1 ft. long, and about 1½ in. wide, dark green, with a deep purple mid-rib, and dark rosy-crimson edge, the younger leaves being wholly of a rosy-crimson colour. The petioles are finely coloured with the same rosy-crimson hue. It is a valuable variety for table decoration, on account of its very early colouring and graceful habit.

D. superba.—This hybrid is one of the slender-foliaged varieties, and from its graceful habit will be most useful for table decoration. The leaves are pendulous, arching, from 12 in. to 18 in. long, by 1½ in. broad, linear-lanceolate, dark bronzy-green, margined and striped with bright crimson; the young leaves are rosy-crimson.

Among the older kinds the following are most worthy of culture:—

D. terminalis is one of the oldest, best known, and most beautiful. The leaves grow from 1 ft. to 2 ft. in length, and 4 in. and 5 in. in width; they are of a dark green colour, richly and profusely shaded with brilliant scarlet; the young leaves and the entire upper part of the plant are sometimes wholly scarlet.

D. Chelsoni makes a fine plant. The leaves are very large; the ground colour is a bronze-green edged with crimson.

D. Cooperi somewhat resembles the first described, but is, if possible, more beautiful in colour and more graceful in habit. It is moderately hardy, and does fairly in the greenhouse during the summer months.

D. Guilfoylei.—A magnificent species, with long narrow leaves beautifully variegated and striped with bright rosy-pink, white, green, and red; the leaf-stalk is also variegated. Being a native of the South Sea Islands, it is somewhat tender, but, like the rest, easily grown.

D. gracilis is an elegant little plant; the leaves are only about 1 in. in breadth, 12 in. in length, and incline nearer to the horizontal line than those of other kinds. The main colour is bright green, margined with purple.

D. Dennisoni is another elegant species, of the deep bronze type; leaves from 12 in. to 15 in. long; habit compact; other characters good.

D. regina is different from any of the preceding, and a fine variety; leaves erect, centre green, edged with creamy white; sometimes the upper half is quite white, which gives a speckled appearance to any collection with which these plants may be intermixed.

D. umbraculifera is quite different from

any of the above; it grows several feet high; the leaves are generally about 3 ft. long and 1 in. broad, and of a rich, glossy green colour; at the top they stand straight out, but the older ones at the bottom droop. The plant, when large, forms a conspicuous object anywhere; it grows rapidly.

D. magnifica.—Leaves about 8 in. in width, and as much again in length. When young the leaves are pink in colour; when old they are of a purple-bronze shade.

D. Draco, D. australis, and D. atro-sanguinea are nearly hardy, and useful for conservatory decoration.

Building a Greenhouse.—Having been a subscriber to GARDENING since its commencement, I have read with much interest, from time to time, the communications of those who have essayed building a greenhouse, but I have not found any who have tried to make a span-roofed one. It sometimes happens that, from situation, or from sanitary considerations, a lean-to house is unsuitable, and for those like myself who find themselves in this fix, perhaps it may be acceptable if I give my experience in the erection of a small span-roofed house. Part of the party-wall which separates my house from my neighbours' is 8 ft. high, and this I made use of for one end of my house, the two sides and door end being on brick walls 2½ ft. high (the inside having to be dug out), the floor of the house being thus on a level with the 5 ft. way separating the one side from the kitchen window. Of course, on the other side, the top of the wall is on a level with the garden, to which, at the door end, a few steps lead up, and by having it thus half sunk I find I can keep up a fair temperature with little artificial heat. When the thermometer lately registered outside from 6° to 8° below freezing, the heat inside, from an oil stove, was 18° above that, even with the ventilator at top slightly open. The size of the house is 11 ft. long, 7 ft. broad, and 8 ft. high in the centre, and 5½ ft. at the eaves, the cost of material being as follows:—Wood, for wall plates, uprights, rafters, 1½ ft. staging all round, shelving at wall end, and wood flooring, £1 11s. 8d.; 450 bricks, and hauling, £1 2s. 6d.; digging out earth, and hauling, 9s. 0d.; paint, at 4½d. per lb., two coats, 7s. 6d.; stove and brackets, 10s. 0d.; glass, £2 2s. 5d.; putty, 4s. 5d.; zinc for gutters, 6s. 2d.; total, £6 13s. 8d. I have not entered into particulars with above items, as it would take up too much space, but I shall be happy to give it to any one who may be contemplating trying his handiwork on a similar structure. I heat with an oil stove, and having two top ventilators, I leave one open a little night and day, a thermometer inside guiding me as to the judiciousness of this. The exposure is south-east.—G. S. C.

Violets in Winter.—The earliest single Violet with which I am acquainted, and at the same time the finest and most valuable, is Lee's Victoria Regina, a variety that ought to be grown in every garden, and would be, did people fully understand what a grand Violet it is. The earliest and best kind, undoubtedly, is Marie Louise; it is a greatly improved Neapolitan, earlier, hardier, and has flowers of a rather deeper hue of colour. Both of these kinds will furnish an abundance of flowers during open weather through the winter, but it would be well to lift a number of strong plants and put them into a frame, keeping them close to the glass. Thus treated, and with a slight amount of protection in bad weather, flowers could always be had. If plants be lifted for this purpose now the side-shoots and runners should be taken off them, and they should be pricked out thickly in a bed for the winter. By the middle of April these will be all well rooted, and can be re-planted in beds from 9 in. to 12 in. apart, where they will develop into strong blooming plants by the ensuing winter. There are few hardy plants more easily cultivated than the Violet, and few better repay any extra care that may be bestowed upon them. On the other hand, however, if there be out-of-the-way spots where other useful plants cannot be got to grow, it is very probable that Violets will do fairly well, always furnishing a good covering of leaves, and in due season a fair sprinkling of flowers, although not so fine as those produced by younger plants.—D.

FRUIT.

Good Bearing Apples.—Although this part of Hampshire is not a noted one for Apple culture, yet a great many sorts are grown hereabouts which are good croppers. Amongst dessert kinds I find the following to be about the best, viz., Summer Golden Pippin, King of the Pippins, Cox's Orange Pippin, Gooseberry Pippin, Golden Winter Pearmain, and Red Russet. The best kitchen sorts are Mank's Codlin, Winter Codlin, Blenheim Orange, Ecklinville, Hawthornden, Northern Greening, Profit, and one or two local sorts for which I cannot find names.—W., *Fawley*.

Coe's Golden Drop and Italian Prune Plums.—The best autumn Plum in cultivation is Coe's Golden Drop, which will keep good for weeks if gathered before it is over-ripe. We

Italian Prune Plum.

have had good fruit of it for dessert in December by keeping it in a dry room. It grows and fruits freely on both east and north walls. We have had no experience of it as a standard, but the tree has a good constitution, and would, no doubt, do well in that form. The Italian Prune, or Quetsche d'Italie, is also another very excellent dessert Plum, having somewhat the same characteristics as the preceding, with the excep-

Coe's Golden Drop Plum.

tion of colour, which is a deep purple. The flesh is yellow and very rich and full flavoured, rendering it a most desirable variety to cultivate. —W. W.

Easy Way of Warming a Frame.—I have a double frame-light, constructed after the ordinary principle, except that one end is left entirely open, but the front and back of the frame is secured by two bars of wood about 3 in. wide and ¾ in. thick, let flush into the perpendicular pieces "to which the back and front are fastened," and secured by four bolts and nuts—thus making the frame perfectly strong. The open end of this frame is placed against the brickwork of a kitchen chimney, and kept in its place by four staples driven into the wall, and the frame secured to them by a nail or screw at the head of the staple. This frame-light is of the following dimensions:—Height at the back, 34 in.; front, 8 in.; and the lights are 6 ft. long by 3 ft. wide. Now, the reason which induced me to have a frame made and placed at the back of my kitchen chimney is told in few words. Having noticed repeatedly, after a heavy rain, which beat at this end of my house, that the portion of brickwork constituting the kitchen chimney appeared to be much drier than any other, consequently I put my hand upon it, and to my surprise found it quite warm. This was about 6 ft. from the base, and lowering my hand I found the heat increase, until I came to exactly the back of the kitchen range, and here the bricks were quite hot. I have had this frame in use for several years, and have never lost any plants or cuttings from frost. This end of my house forms a portion, or one side of an enclosed yard of good size. The aspect of my

frame is due south, but that of the end of my house is due east. I have no houses near or large trees to keep off the influence of the sun, so that the heat in the frame is very often a little too much, and requires ventilating, especially in the spring. Few houses, perhaps, afford the great convenience in this respect that mine does; but where such does exist, I would suggest, instead of a frame-light, that a greenhouse be erected, for it could be easily heated by hot water, simply by inserting two pipes into the boiler of the kitchen range, and then you have it complete. As regards the frame-light, it should be so raised as to receive the greatest amount of heat from the brickwork of the chimney.—A Subscriber.

The Cloche Protector.—Here is a sketch of a simple and inexpensive protection for plants, either under *cloches*, as represented, or grown in the ordinary way. This cover is made of bands of straw, interwoven with cord, so as to make a firm mat, 2 or 3 ft. in width, and of any length that may be found necessary. At each end of a protector of this kind is affixed a wooden jamb or margin, hinged on to a peg, which is sunk into the ground, as shown in our illustration. It will be at once seen that the protector can, by this simple arrangement, be set at any angle, and, from what we know of it, we can recommend it as an efficient protector from both cold and sun, and a useful aid in the raising of seeds, cuttings, and tender crops.—W.

Effect of Lime Water on Plants.—Why "Tried One" should have experienced such disastrous results from the use of lime water is a mystery to me. I have used it to all kinds of tender-rooted plants, such as quickly feel even a slight overdose of clear water, and never in a single instance with ill effects; on the contrary, with it the foliage quickly assumes a darker tint, and the greatest change is observable in the texture of the leaves and the flowers, which acquire, when the applications are frequently given, unwonted substance. I have always considered lime water to be one of the safest manurial agents, for it is a rather curious fact that so much water will only hold so much lime in solution, so that no matter how much lime be put in a vessel the water will remain of one unvarying strength. My plan is to put enough lime in a tub to ensure its growing the desired strength, when the tub is several times refilled, but I take the greatest care to use it perfectly clear. If "Tried One" has not taken this precaution, and has used the liquid at all thick, the affair is at once explained, for the moisture thus used would not only choke the pores of the soil, but would also scald the principal feeding fibres.—J. Cornhill, *Byfleet*.

Plant Protectors.

VEGETABLES.

Mushrooms in Winter and Spring.—Although mushrooms form a valuable addition to our list of kitchen garden productions at all seasons, they are exceptionally welcome from October to May. I doubt, however, if there be not more failures in their culture than in that of any other esculent grown—and these chiefly from kindness rather than from lack of attention. The routine which we adopt with general success is very simple, and varies little from that generally followed, viz.:—Sufficient fresh stable manure is shaken out from the longest litter to make one good large bed. It is carted into a heap, and about one load of fresh turfy soil is added to four of manure; this is turned over two or three times, at intervals of a couple of days, to prevent violent heating, and if very dry and likely to become mouldy, sufficient water is added to ensure a general sweet temperature throughout the heap. When fit for making into a bed it should be about 85° or 90°, and neither wet nor dry, but moist. We make up our beds in dark sheds or cellars, where a close, warm atmosphere, not easily affected by external temperature, is maintained at an average of 60°. Fire heat should be applied with caution, as it is too drying, and when fresh successional beds are in course of formation, the genial warmth given off by them is far more congenial than fire heat. We make the beds from 15 in. to 10 in. deep, and tread them firmly, in order that the heat may be gentle and lasting; after a few days the spawn is inserted in pieces about the size of a hen's egg, 1 ft. apart, just covering it with the manure. Upon the quality of the spawn success depends: if good and fresh, there will be abundance of Mushrooms; if bad, there will be few or none, however well the bed may be made or treated; therefore the spawn should be obtained from a trustworthy source. Use it fresh, or store it in some perfectly dry, airy position until it is required. The beds should be earthed with good fresh loam, beaten down as solid as a spade can make it, and in a month or six weeks the Mushrooms will begin to make their appearance. In gathering, they should be pulled or twisted at the base, so as not to disturb the successional crop. When the beds appear to be dry, a good soaking of weak liquid manure, at the same temperature as that of the house, will assist the development of later crops; but as soon as the produce is not sufficient to be worth gathering, the most economical plan is to remove the old bed and make a fresh one in its place.—G.

Wintering Parsley.—As few herbs are so continuously in demand as Parsley, a plentiful supply of it through the winter is always desirable. A good way to preserve it is to take some flour barrels, get a 2-in. auger and bore their sides with holes 1 ft. apart every way; put 6 in. of soil in the bottom of the barrel, then draw the roots of a good plant through the bottom holes, fill up with soil till the next holes are reached, draw in some more plants, and so on until the barrel is full; then put four or five plants on the top; place the barrels in a cool house where they can get plenty of light. The produce, in both quantity and quality, will be such as will not disappoint any one who gives the method a trial, and such barrels are not unsightly. The plants should be good and strong for this purpose, or the produce will be small.

Ridging up Soil for the Winter.—It is by no means as well known as it should be that digging over ground in the late autumn or early winter months is not only of no real service, but in many cases is positively injurious. Far better let the ground lie untouched, merely clearing off weeds if any such be present, than to merely dig it over. The immediate effect of digging is of course to ensure a fair, neat, even surface during the winter; but however necessary this may be in the pleasure grounds, where neatness is a primary consideration, it can scarcely be considered indispensable in the vegetable garden, where everything should be done to secure a good tilth for growing crops. When a piece of ground remains throughout the autumn fallow and untouched by the spade, it forms a firm surface, through which the rain, however heavy, works gradually, so that the great body of soil remains to a certain extent free and mellow, and is easily brought into good order by a few drying days in spring. In the case of newly-dug soil the effects are very different, as heavy continuous rain washes it into a sour pasty mass—that is to say, in gardener's parlance, it becomes "poached," so that a considerable amount of time is required to aërate it when planting time arrives. This will, however, be at once apparent, that the true way is to throw up the soil into ridges as high as can be conveniently done, thus exposing a maximum of surface to those purifying agents, frost and wind, which are thereby enabled to rush through it and seize hold of every particle, purging it of all impurities and leaving it ready to the hand of the grower in as sweet, fine, mellow condition as he can well desire. It is needless to enlarge upon the advantages accruing to the kitchen gardener by thus having his fallow ground ready as it were to his hand at any desired moment. Whenever he may wish to commit seeds to the ground or set out young plants, he has merely to choose a daytime, and having his manure ready, pull down the ridges, stir the soil well with the fork in putting in the dung, and finish off the work at once; thus oftentimes accomplishing as much in one day as would require a week when the soil has to be prepared and sweetened for the reception of the crops.—John Cornhill.

TREES AND SHRUBS.

SHRUBS FOR SMALL GARDENS.

From their many shades of colour and shapes of growth and foliage, shrubs are at all seasons as beautiful and interesting as flowers; and it must not be forgotten that many shrubs bear very beautiful flowers in addition to beautiful foliage. In almost every garden there is room for improvement in the character of the shrubberies. There is too much sameness, too little variety; everything is reduced to one dead level; group after group is composed of the same materials of the commonest description. In more than one nursery during the last year or two I have seen the quarters filled to repletion with the best kinds of evergreens and flowering shrubs, and but a limited demand for them, whilst the demand for common Laurel, common Yews, Lilacs, &c., could not be met. In the annexed list I have omitted Laurels, for although they are beautiful evergreens that will grow in any soil and situation, they are not so well adapted for such places where it is sought to obtain the best effect in a limited space.

Acer Negundo variegatum
Aucuba japonica
,, mascula viridis
Althæa frutex
Aralia japonica
Arbor-vitæ, Chinese
,, Siberian
,, golden
Arbutus Unedo
Berberis aquifolium
,, Darwini
,, japonica
Box, various
Broom, yellow and white
Buddleia globosa
Catalpa syringæfolia
Cornus mascula variegata
Cotoneaster microphylla
,, Simmonsi
Cupressus Lawsoniana
Deutzia gracilis
,, glabra
Escallonia macrantha
Euonymus japonicus variegatus
Forsythia viridissima
Genista præcox
Ivy, various
Holly, various
Juniperus stricta
,, sabina
,, prostrata
Kerria japonica
Laurustinus
Ligustrum aureum variegatum
Lilac, Persian
Magnolia conspicua
,, purpurea
Osmanthus ilicifolius variegatus
Pæonia Moutana Banksi
Phillyrea cordata
Pyrus japonica
Retinospora ericoides
,, filifera
,, pisifera
,, aurea
Rhus glabra laciniata
Ribes aureum
,, sanguineum
Spiræa ariæfolia
,, Lindleyana
Tamarisk
Taxus baccata aurea
Thujopsis dolobrata variegata
Venetian Sumach

Where space permits there are many beautiful kinds of weeping trees, such as Sophora japonica pendula, &c., and where trees of larger growth are admissible, the Weeping Lime is a fine tree for landscape effect, and one of the most delightful trees to shade a garden seat. Among the large family of Conifers, too, selections might be made of the most beautiful and interesting character.

IMPROVING CLAY SOILS.

Having had considerable experience in the burning of clay soils in East Worcestershire, I can fully confirm the testimony of J. Rogers (given in Gardening Illustrated for Nov. 6) with regard to the beneficial effects of the operation. My plan, however, differs somewhat from

that which he recommends. Coals, in some localities, are more readily obtained than wood, but either will answer the purpose, although I prefer coals—the cheap kind, called "lumps," will do very well. Some fine "slack" also will be necessary, which may be had for about 3s. per cart-load. The tools required will be an old shovel—a good one would soon be spoiled—an iron bar, 4 or 5 ft. long, and a tool similar in shape to the "Burghley Cultivator," figured and described in an early number of GARDENING. I have long used a tool of this description, and find it invaluable in working stiff soils. I made mine from an old three-pronged potato-fork, by simply heating and bending the iron-work in which the handle was inserted, and fixing in it a handle 5 ft. in length. These, with a fork and spade, will be all the tools requisite.

We will now suppose that the top spit of a plot of clay land, say eight yards in width, has to be burned. Fork over one end of the plot the whole width and some six or eight yards in length; then, close to where you left off forking, and on the undug part of the plot, place about ½ cwt. of coals in a conical heap and set them on fire. While this is burning up proceed to build the *hearth* for your first fire, which must be in the centre of the part forked over. The soil should be in a firm state, so that it will break up in lumps or sods. With these sods, which may be about the size of a half-brick, form the outline of a rectangular figure, 6 ft. by 4 ft. Divide the space thus enclosed into six square and equal compartments by laying a partition of sods along the centre, and then intersecting this by two cross ones, each 2 ft. from the end.

Build up perpendicularly, in a wall-like form, both outline and partitions, till they are 1 ft. high. The outer wall, which may be about 6 in. thick, should be laid moderately close and firm, for the double purpose of preventing the egress of heat and the admission of too much air. By this time your heap of coals will be well lighted. Take your old shovel, and place the whole heap carefully in the six compartments, dividing it as equally as you can. Put on each fire a few lumps of coal, backing them up with small sods to keep them in place. While these are igniting build the outside walls—the partitions are now done with—6 or 9 in. higher, and as soon as your fires are all nicely established, cover them over carefully with small sods to the height of the walls. Throw over these a few shovelfuls of finer clay to fill up the interstices, and level the surface. You may now commence to build another hearth, 6 or 8 yds. from the first, but while doing so, keep an eye sometimes on your fire. Should it appear not to be burning freely admit air by thrusting in your iron bar in about half a dozen places at the very bottom of the stack.

As soon as the fire has risen to the top sprinkle over it two or three shovelfuls of slack, and throw on 6 in. more of clay, still keeping the walls erect. Repeat this process as often as the fire reaches the surface; but when "making up" for the night give an extra layer, and cover with 3 or 4 in. of shovelings. Should this prevent the issue of smoke, make with the bar two or three draught holes in the top, and cover each with a sod of clay. In the morning, if all has gone well, the fire will have penetrated the whole mass, and must be at once "drawn out." Take the three-pronged "cultivator" and rake down the walls all round, and then over this the hot ashes from the centre, which will effectually cook any of the partially-burnt sods. Give a good sprinkling of slack, and cover in quickly with sods and shovelings. Build a wall of sods round the outside of the upper edge of the heap, and proceed as before till the whole of the portion forked over has been used up. When this is done draw out the fire well from the centre, and throw in any unburnt sods that remain, which will complete the process.

As I have proved this mode of burning clay soils to be both successful and economical, I can strongly recommend it, and its superiority to the common way of burning in conical heaps will, I think, at once be apparent. If wood be employed instead of coals, it may either be reduced, if too large, to the size of the compartments given above, or these made larger to admit it. Old, uncleavable blocks, stumps, and butts of trees may be utilised in this way by surrounding them with walls of clay, and firing the stack with a shovelful or two of live coals. —J. MARTIN.

Moles, Snails, and Wireworms.—Having seen so many questions asked about moles, wireworms, and snails in GARDENING, allow me to give my experience of them. First the moles. Last year they gave me great trouble, so I set to work to get rid of them. Our cat killed four in one week, and I the rest with iron traps, but the result was I got a worse enemy—the wireworms. I had two very fine beds of Shallots, and the tops were all decaying, so I pulled them up to see the cause, and there were as many as sixteen wireworms at one root. Since then I have encouraged the moles, and I have far less wireworms. Now about the snails. I never had so few as I have had this year; the reason is I got as many toads as possible, and as they feed on snails and slugs they have kept them down. One of your correspondents says he has seen snails crawl under toads and they have not eaten them. He must bear in mind they are not always hungry. I have a toad in the greenhouse that will take a slug or snail from a pointed stick and eat it. —B. B.

GLASSHOUSES & FRAMES.

Alocasia metallica.—This is one of the most distinct and beautiful of fine-foliaged

Alocasia metallica as a vase plant.

hothouse plants, striking in the form of a large specimen, and equally serviceable and effective as a small vase or table plant, the young foliage being especially lustrous and handsome. For very large specimens, we select five or six of the strongest crowns or root-stocks, and taking some 15-in. pots, fill them one-third full of crocks, over which is placed a good layer of fresh Sphagnum Moss, to keep the soil from being washed down and blocking up the drainage, as, during the growing season, abundance of water, both at the roots and overhead, is required. The compost which we use consists of fibry turf, peat, charcoal, broken potsherds, and chopped Sphagnum Moss. The crowns or root-stocks, which are long in shape, are raised well up in the centre, packing the soil amongst them, so as to form a cone. If potted in February, they will throw up a quantity of flower-spathes before the foliage, but these should be broken off as soon as they appear, in order to direct the whole energy of the plants to the formation of fine foliage. Smaller crowns, placed three in a 6-in. pot, make fine vase plants in autumn and winter, and single crowns in 3-in. pots are also highly effective in table and plant stands, their polished, shield-like leaves contrasting well with whatever they may be associated. A moist temperature of 70° in spring suits them best; but in winter 55° will be ample. They may be increase rapidly by means of small root offsets. They are not liable to attacks from insects, but a sponging occasionally ensures cleanliness, and greatly enhances the beauty of their leaves.—J. G. H.

Tropæolums for Winter.—Where cut flowers are in demand, few plants are more serviceable than the scarlet-flowered Tropæolum. Pots are unnecessary, as by planting out vigorous young plants in summer, and training them under the rafts of any cool house, abundance of flowers may be gathered from them throughout ithe winter. In addition to their value for yielding cut-flowers, the plants themselves, when well studded with blossoms, have a bright appearance at a season when good flowers are scarce.—S.

Propagating Harrison's Musk (Mimulus moschatus Harrisoni).—Those who wish to get a good stock of this Musk, and have only a few plants, should adopt the following method, which I have practised with success, namely: Take all the points of the shoots off the old plants at the third or fourth joint; these should be cut again at the second joint, put into 3-in. pots, and plunged in bottom-heat. That portion which is cut off the cutting should be treated as follows: Remove each leaf with a "heel," and dibble them into a compost of leaf-mould and sand, when they will readily strike root. I had two plants sent by post, and in about six weeks I struck three dozen and a half by the method I have just indicated; not one failed.—W. S.

Creeping Fig (Ficus repens) **as a Curtain Plant.**—Large numbers of plants of this are grown in some of the large nurseries to a length of 4 ft. or so from the pot. In small 5-in. pots these are placed along the edges of the central beds and hang down to the ground, gracefully draping the walls. Being easily moved, they are also useful for forming similar curtains in rooms.

Stephanotis floribunda.—It is not generally known, we believe, but it is a fact, nevertheless, that there are two varieties of the Stephanotis—one which is a profuse flowerer, and the other not. We at one time possessed large plants of both, and grew them under the same conditions, and while one flowered profusely, the other scarcely flowered at all. Nurserymen profess to distinguish between the two varieties by their leaves, but we never could discern much difference in that respect. There is no doubt, however, of the superiority of the one over the other for flowering, and buyers should take care they get the right sort. The Stephanotis does well in pure loam and sand and a little well-rotted manure mixed, and likes a stove temperature, but will succeed nearly as well in an intermediate house. —J. S.

Eucharis amazonica.—A short time ago I saw what I think to be an excellent plan of growing this beautiful Amazon Lily to perfection. This is generally grown in a stove-house and in a high temperature, but the plants I refer to were cultivated under the following treatment:—The bulbs were placed in a suitable mould, and then put on long planks of wood (supported by bricks), just over the pipes, which ran through a bed in a moderately heated greenhouse, and then small oblong boxes of tin, curved in the centre like a saddle, made to just fit over the top of the pipes, were placed under the rows of Eucharis. These boxes were kept constantly filled with water, and the heat of the flues caused a continual heat and moisture to surround the plants. Certainly I never saw a finer-looking lot of this splendid Lily, and they, one and all, were as healthy as could be desired, after a long period of profuse blooming.—W. A. G.

Jasminum grandiflorum.—I was pleased to see this delightfully-scented variety of the Jasmine figured in GARDENING ILLUSTRATED lately. I find it succeed either as a climber or pot plant, and thrive in the greenhouse all the year round. Propagation is effected by cuttings in spring under a bell-glass and in a little heat; but as the plants can be bought so cheaply at the nursery, and at this season coming freely into flower, let me recommend no one to propagate their own. Loam, peat, or well-rotted leaf-mould, sand, and a little Standen's Manure make a good compost for it; and potting should be performed in spring before the summer's growth is much advanced. Pot plants will require cutting back a little when straggly, after which their growth must not be interfered with, as the flowers are

produced in trusses at the ends of the shoots, and continue to unfold in succession for some months. Climbers may be pruned also before starting into growth, and if they are allowed space to grow, and light, and are not hampered too much by tying and training, they will make a good quantity of fresh wood, and produce abundance of flowers. It is one of the best sweet-scented greenhouse plants—not much inferior, indeed, to the Stephanotis—and is little troubled with insects or disease.—S. W.

Ixias in Pots. — Few spring-flowering bulbs give so little trouble and are at the same time so full of grace and beauty as these ; either in pots in the greenhouse or in frames, or in protected beds merely for their flowers for cutting they are alike valuable. They may be potted firmly now, six bulbs in a 5-in. pot, in sandy loam and leaf-mould ; place the pots in a cold frame or on a shelf in a cold part of the greenhouse ; keep the soil dry at first, but give water more freely when the plants are in full growth. In April most of the varieties will flower, and will be very useful, as they are quite different in appearance from most plants at this season. When they have done flowering gradually dry them off, and allow them to rest till autumn, when they should be re-potted as before.—H.

Flowering Stephanotis in Small Pots. —Few sweet-scented flowers are more appreciated than those of the Stephanotis, either in a cut state or on the plants, and to have them in abundance on plants grown in 6-in. pots is desirable. This may be accomplished by obtaining strong young plants and growing them on in a moderate temperature, where they can obtain abundance of light, sun, and air. In summer they may be placed out of doors in a sunny spot, where the wood will get well ripened. The side shoots should be spurred in to within 1 in. of the main stem, and, when bad weather sets in, the plants should be removed indoors and their shoots tied up to a trellis near the glass. If a little heat be applied in November, shoots will be emitted at every joint, all of which will flower profusely. Large plants may of course be treated in the same way ; all that is required is to treat them exactly as one would Vines on the spur system, and abundance of flowers will be the result.—S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 13.—Putting Cypripedium spectabile in a large pan in Sphagnum, peat, and sand, and placing it in a cold house, keeping it wet ; planting Souvenir de la Malmaison Roses in front of houses for autumn flowers, also Box hedge for shelter; putting in more forcing materials, including plants for cut flowers, and Sweet Briers and Roses for stands ; beginning to place show Pelargoniums in their flowering pots, using a compost consisting of loam, manure, and sand, and stopping them ; putting a few Fuchsias into heat for cuttings ; beginning to paint Peach trees in orchard house ; mulching all young fruit trees with manure ; looking over Pelargoniums, and picking off damaged foliage ; beginning to clear up Mint, Horseradish, and other beds.

Dec. 14.—Planting Seakale to produce seed next year ; bringing out of Seakale shed some Hyacinths which are pushing freely, and plunging them in Vinery ; putting in Deutzia gracilis, Anne Boleyn Pinks, and fancy Pelargoniums to force ; putting Endive under cover, and ashes over Peas to protect from birds.

Dec. 15.—Forking over in a shallow manner Raspberry ground ; putting Lilium auratum into peat and sand ; planting Stephanotis in loam and peat ; getting Fig trees into heat, 58° at night, and 63° by day, and plunging them ; putting in more Mint and Balm to force ; putting into heat Roses, Pinks, Cyclamens, and Heliotropes ; pruning and cleaning among Roses used for distillation.

Dec. 16.—Inserting Fuchsia cuttings ; putting in Dielytra to force, and a fourth batch of Asparagus ; tying up Yew trees, Cedars, &c., in order that snow shall not break them down ; finishing, painting, and tying orchard house trees.

Dec. 17.—Potting off late-sown Calceolarias, also Canterbury Bell and Cucumber plants ; putting a few white-flowered Pelargoniums into more heat, in order to induce them to open purer in colour ; shifting herbaceous Calceolarias ; putting litter over Parsnips, Seakale, Artichokes, Celery, Carrots, &c., in order to be able to get them up during frost ; sponging Palms, and Orange trees ; emptying a pit and refilling it for Potatoes ; putting manure on Asparagus beds ; thinning Mignonette and Nemophila.

Dec. 18.—Potting Isolepis gracilis for drawing-room decoration, also Vallota in peat and loam, and Dendrochilum filiforme in peat fibre and Moss ; placing in Peach house Daphne indica to force ; putting in also more Seakale and Rhubarb for the same purpose ; placing mats over hand-glass Cauliflowers during severe frost ; extra-strawing Lettuces and Calceolarias, and also Vine borders ; examining Orchids in little baskets twice a week to see if water be needed, those in large baskets once a week, watering those in pots at intervals of from seven to fourteen days ; putting ashes over Chervil seed.

Glasshouses.

Eucharis amazonica.—There is no particular season for the flowering of this plant, as with sufficient stock and the help of houses with different temperatures, it may be had almost continuously in bloom. Strong vigorous plants that have been well grown, and had a short rest, if now put into the forcing pit, and plunged in bottom-heat, will very soon throw up flowers. The best way to secure a continuous supply of these flowers is to vary the times of growth and rest with different portions of the stock, so as always to have at command some that are in a fit condition for introducing to a brisk temperature. This will be much better than treating the plants to a more uniform season of growth and rest.

Lily of the Valley.—This plant is a general favourite, yet it is frequently not near so well done as it might be, often through the use of home-grown roots, the cultivation of which has not been such as to impart the strength to them necessary to ensure a full crop of flowers ; though, where a suitable position is chosen, and the little attention required is given, it may be grown as well as the fine roots so largely imported, the crowns of which, under fair treatment, will not one in a hundred fail to produce flowers. It is well in the case of home-grown roots to select the strongest in the same way that is practised with those imported, leaving the weaker portion for replanting until they have acquired strength sufficient. There is nothing gained by giving the crowns of this plant intended for forcing more pot room than just sufficient to hold the roots without too much compression. Pots 5 in. or 6 in. in diameter are better than larger, as if the plants are wanted when in flower for decorative purposes, the small pots give facilities for them, standing where larger ones could not be admitted, and small examples are little inferior in effect. The roots, as soon as potted, may be at once placed in bottom-heat of from 70° to 75°, plunging the pots sufficiently deep to admit of 1 in. or 2 in. of material, such as old tan or leaf-mould, being put over them, which covering will help them to move much quicker. In the course of about a fortnight the crowns may be expected to have advanced sufficiently to admit of their being taken out, as if allowed to remain too long in this position they will become drawn. When taken from the bottom-heat, they should be stood in the body of the house or pit, and covered with two or three thicknesses of paper, such as will subdue the light, gradually removing the paper as they will bear full exposure to the light, for, like Hyacinths and plants of similar description, if the young growth, whilst in a blanched condition, is suddenly exposed to the light, its effects are injurious. Where a temperature of 65° to 70° can be kept up, the flowers will progress apace, and may be looked for being in for use in a month from the time the roots were put into heat. These details are given, as they may be of use to many who have hitherto treated this plant in a way that used to be common, the results of which were often unsatisfactory.

Hyacinths, Narcissi, and Tulips.—These may be introduced to a warm pit or greenhouse as soon as they have made enough root progress, but until in this condition it is no use subjecting them to heat, as, however strong the bulbs may be, unless they possess enough feeding fibres, the flowers will not come strong. It is not well to hurry plants of this description so early in the season as this, and as soon as the crowns have got gradually inured to bear light they should be placed sufficiently near the glass to prevent their leaves being drawn. Hyacinths and Narcissi are frequently seen with lengthened foliage, so weak as not to be able to support itself, and the flower-stems similarly elongated ; in this way they have not a pleasing appearance, to say nothing of the flowers under such conditions being very much sooner over than they should be.

Crocuses, Snowdrops, and Scillas.—The former of these has been long used in quantities for forcing, and the two latter are equally suitable and give variety, all coming on with less heat proportionate to their natural disposition in blooming early with a low temperature ; but where Scillas are forced, strong stout roots should be used, the flowers produced by which will be found very different to those forthcoming from weaker examples.

Lilac.—This is undoubtedly one of the finest of all forced winter flowers, especially manageable in the size of the plants, where these have been grown and properly prepared for forcing, as other shrubs more generally used for the purpose. It will bear more heat without in any way weakening or rendering the flowers liable to flag than any other plant usually employed for forcing ; but to have the bloom white, such as the Continental growers produce, the plants must be darkened whilst being brought on into flower ; it should be kept moist, the plants being freely syringed.

Such subjects as the double Prunus and Deutzia gracilis may also be placed in a warm temperature, and if plants are available that have been forced in previous years, particularly of the Deutzia, which, after flowering last season, were allowed to make growth in some heat, say a Vinery or Peach house at work, the growth will have been early matured, and they will bloom much better with little forcing than those that have made their growth in the open air. As this is one of the best and most useful of all forced shrubs, or, in fact, plants of any kind for winter flowering, it should be grown in sufficient quantity to keep up a succession until the spring. Any Rhododendrons are put into warmth so early as this, it should only be the kinds that bloom naturally early and too soon in the open air to escape frost.

Flower Garden.

Auriculas.—Compost may be prepared for surface dressing the plants when the time comes. As much as is likely to be required may be prepared and stored in a dry place. The compost for this purpose should be much richer than that required for potting purposes—say two parts of good loam to one of rotted manure, with a small portion of leaf-mould, sharp sand, and pounded charcoal. Many growers are very careful to frequently turn over the compost which it is intended to use for potting purposes during the winter, but more harm may be done in this way than by allowing the heap to remain undisturbed. Stack the loam in a heap, so that the wet can be thrown off ; have the compost mixed and laid up in the shed about three months before using it. The labels are apt to be defaced by exposure, and it may be well now to see to renewing them.

Hollyhocks.—These need little attention at present ; they are quite safe where planted out in cold frames. Those on shelves near the glass in a cool house, from which frost is excluded, will require water when they are dry, but the plants do not like much wet at this season.

Pansies in Pots.—These are also at rest. We plunged the pots this year in dry Cocoa-nut fibre refuse in preference to placing them on a stage. The plants were not so early established as they ought to have been for such an early winter. In all cases where an early bloom of any of these hardy flowers is required, it is very desirable to propagate the young stock early and pot the plants some time before there is any chance of severe frost.

Fruit.

If frosty weather prevails grub up old fruit trees, cut out all the dead wood in orchard plantations, and otherwise thin out the branches, particularly such as are crowded and intersect each other. All Moss or Lichen should also be rubbed off them, and if afterwards they can have a good splash over with newly-slaked lime, this will prevent the Lichen from growing again for a long time to come, and so put an end to a convenient harbour for insects. Usually, such orchards are on Grass, and, in the matter of manure, are left to take their chance, a circumstance more attributable to custom than to any real feeling that manure is not required, which it most certainly is, in order to ensure fine fruit.

A good dressing of stable manure ought to be given every alternate year, and if this be scarce, soot and wood-ashes form a most excellent substitute, and should be applied now, in order that the winter rains may wash them down to the roots before growth commences. By thus annually devoting a few days' labour to old orchards, they might be made much more remunerative.

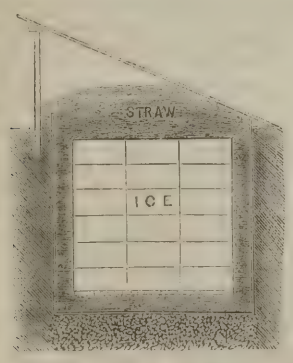
If the sorts are not the best, and the trees are healthy, this can soon be remedied by grafting; and when pruning good kinds the shoots should be saved for grafts, and heeled in at the base of the trees till required in March. The trees that have to be grafted may be headed down at once. Cut off all ground suckers with a spade. Whilst the ground is hard through frost let all wheeling of manure and soil on to the fruit quarters be done; also clear up all prunings, hedge-clippings, and vegetable refuse of every kind for burning, the ashes from which is a valuable fertiliser for any crop. Though it seems wrong to prune trees in frosty weather, we have never noted any ill-effects from it; but we would recommend that only the commoner and hardier kinds be done, and this solely with the view of forwarding the work. Currants, Gooseberries, and Raspberries may all be done in such weather as that we are now experiencing without any risk of danger whatever.

In order to effectually cleanse the trees from American blight, much pains will have to be taken to first of all wash it off with hot soapy water, and then to paint over the affected parts with a strong solution (8 oz. to the gallon) of Gishurst Compound, or a strong solution of soft-soap water and ½ pint of paraffin oil added to 3 gallons of the solution is equally effective. A greater quantity of the oil might prove fatal, but this amount we have proved to be both safe and a sure destroyer of the insect.

Amongst all hardy fruits, Peaches and Cherries are the most subject to attacks of aphis early in summer, and, by way of prevention, these should always have a winter dressing of the solution just named. Cherries may have it as strong as recommended for American blight, but Peaches should have the Gishurst at but 4 oz. to the gallon of water. The walls as well as the trees require dressing, and these we do with soapsuds fresh from the laundry applied with the garden engine. Such an annual dressing, by preventing attacks of aphis, saves a large amount of labour and annoyance in the early summer months, when, through pressure of other work, it is difficult to find time to attend to them. As soon as the frost disappears, push to a close all arrears of draining, trenching, and forming fruit tree borders, in order that the ground may get consolidated before planting the trees, which ought now to be delayed till February. See that recently-planted trees are securely staked, and that both these and all that require manurial aid should at once have a thick covering of the best manure at command.

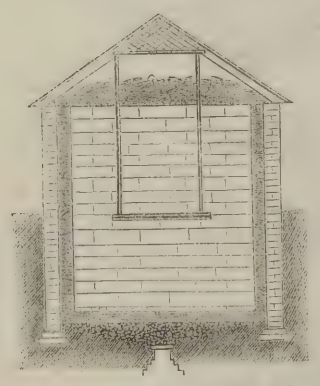
CHEAP ICE HOUSES.

I HAVE seen an ice-house (if, indeed, it was worthy of being called a house) made by excavating a pit 8 ft. square, and 8 ft. deep, into a bank of gravel that was so porous that the drainage from the ice was amply provided for. The sides of this pit were lined with 2-in. plank; the bottom covered with fine spruce boughs, and



Section of an Ice house.

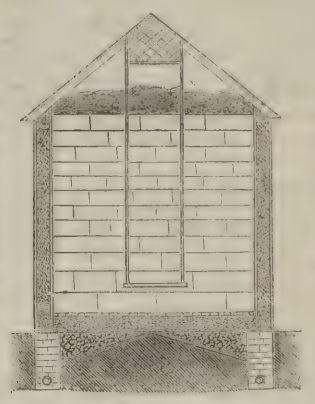
wheat straw to the depth of a foot. On this strips of old fence boards were laid, covering, perhaps, one-third of the whole surface. On these boards a cube of ice, 6 ft. on all its sides, was placed. The ice was cut in cakes 2 ft. square, and carefully laid, and having square edges, and being of uniform thickness, there was but little air between them. Over this 6-ft. cube of ice a foot or more of straw was placed, and the space between the ice and the plank on all of the sides of the pit was also filled with firmly packed straw. To keep out the rain some boards were placed over all, one end on the ground, the other on a piece of slanting supported by stakes driven into the ground, and about 4 ft. high. The ends and one side of this slanting roof of boards were open to the weather, and the winds blew freely over the straw that covered the ice. In this rude affair the ice kept well, and supplied the family all the summer with all they wanted. I do not say that this ice-house of least cost is the best that can be made, but, cheap as it was, it was made so as to comply with the great requisites involved, and it did perfectly envelop the ice in a good non-conductor of heat, and it kept that non-conductor dry by good drainage at bottom, and a free circulation of air on top. Sawdust is better than straw, but sawdust was not so conveniently had, and the difference between the two substances is not so great as is generally supposed. I have tried both straw and sawdust for many years, and now think that the principal value of sawdust over straw for packing ice is to be found in the convenience of handling, and in its lasting qualities. Sawdust may be used, if properly managed, over and over for many years. There is considerable difference of opinion in regard to whether the ice-house is best when all above the surface or all below. In reality there is nothing in this point, and each person will suit his convenience in regard to it. In a clayey soil, where drainage is difficult, it may be best to build all above ground,



Ice house –partly below ground.

and in large structures it may be best to put them all above ground, but for a small ice-house, intended to supply only a few families, and which is to be filled by the hands of men, without the aid of horses or steam engines, convenience in filling will be promoted by having a part of the ice-house below the level of the surface of the ground. The sill of the door should be just level with the top of the sled that brings the ice, and the door sill should be half way from the bottom to the top of the ice when the house is full. In this mode of construction, half the ice will be lowered to its place, and the other half raised. The door should be 3½ ft. wide, and reach to the roof. The air should circulate freely over the top of the sawdust or straw, or whatever substance is placed on the top of the ice. If this point is not regarded, the moisture that will rise up from the ice, or that will condense from the air, will in hot weather make the covering damp, and if damp it will decay, and cease to be the good non-conductor it was, and the ice will waste from the top.

Wooden Ice Houses.—Planks rot out very soon when used for the walls of an ice-house, and when the house is partly under ground the decay of timber is so rapid that brick or stone will generally be found more economical—not that a stone-house keeps the ice any better than one of wood, but it lasts longer. Some twenty years ago I constructed an ice-house for the use of several families, that I consider so well adapted to ordinary people's use that I give herewith a drawing that will enable any person to make one like it. Between the stone walls and the ice is a space of 1 ft. that is to be filled with sawdust, and the bottom is made, as shown in the drawing, by giving the natural earth a hopper-form, and in the middle sinking a well into the gravel several feet, and stoning it up so that its top is covered by a flag, and over this is placed loose stones, principally the spalls made from the walls in the course of their construction. When so levelled up, the whole was covered 1 ft. deep with spruce fir boughs, laid with some care, and enough of them to be 1 ft. thick when loaded by the ice. On these boughs



Wooden house—all above ground.

were laid narrow boards to make all even, but with wide cracks between, covering about two-thirds of the whole space. The roof is simply an ordinary shingled affair, with no attempt to keep the heat from going through it. Nor is there any shade-tree to keep off the sun, but there is over the door an open lattice-work, and in the back end of the building another that allows a free circulation of air, but does not allow birds or other like unwelcome guests to go in.

How the Ice House is Filled.—For convenience in filling, the door is taken off the hinges and placed out of the way. In the centre of the roof a hook is placed, in which a single tackle-block is fastened, and a rope passes through it, one end having strong ice-tongs attached that grasp a cake of ice on the sled, and men on the "fall" hoist, and others on the sled push, and the cake is swung in and placed without breaking. On the bottom described we place the cakes, 3 ft. long and 2 ft. wide; twenty-four of them make one layer. Having raised the ice 2 ft. or so high, we place sawdust around it and tramp it down hard, filling the space of 1 ft. thick between the ice and wall as solid as we can. More ice is then placed, and the filling goes on, the sawdust being kept along with the ice until the cube of 12 ft. of ice is completed. Over the whole sawdust or straw is filled, so as only to leave space for entrance to get ice and for circulation of air. In the door-jambs cleats are fastened, against which short moveable boards are placed as the ice is put in to hold the sawdust against the ice in the doorway. These short boards are taken out as the ice is used in summer. This ice-house has been filled the twentieth time, as far as memory serves me; the bottom, of spruce fir boughs, has never been moved or replaced, and there has never been a time when the house did not have ice in it, except when we have cleared out some cord or two each winter to make room for a new supply, and we use the same sawdust over, having generally to renew each season about as much as a waggon load—say 40 bushels—to make up for waste. The only change made has been to remove a lining that was originally put in. This lining was simply inch boards nailed to wide studs, and was intended to hold the sawdust of the sides in place. In about three years the boards had so rotted that we renewed them and the frame to which they were fastened, and since then we have placed our ice and filled around it as described. I have only mentioned this attempt to line the ice-house with boards to show how vain the effort proved to save the labour of moving the sawdust out and then taking it back each year.

Ice House above Ground.—Ice-houses all above ground are, in places where drainage of one partly underground would be difficult, perhaps the best. Their construction is perfectly simple, if made of stone or brick—and if made of wood are quite satisfactory as long as they last. The directions that follow will be sufficient. Studs, 12 in. wide, and 2 in. thick, and

12 ft. high, are placed on 2-in. plank sills of the width of the studs; these sills being placed on the top of gable wall that fills a trench 2 or 3 ft. deep, give the outlines of the frame. Board on these studs, both sides, with well-nailed inch boards. Fill the spaces between the boarding and studs with well-rammed sawdust reaching from sills to top of studs. Make a floor as described for stone ice-house, partly under ground—only reversing the form of the earth under—that is, making the centre higher than the sides, that the water that forms from the ice may run freely outward to the drains under the sills. An ice-house so constructed will be filled out to the boarding of the sides, and covered over with sawdust or other non-conducting substance.

Packing Ice.—This point is of less importance than is usually thought. Convenience of handling requires that the cake should not be much over 8 in. or 10 in. thick, and half that thickness will keep well in summer if properly packed and cared for. The dealers of ice generally place the cakes on their edges, as they are every day, during the season of consumption, taking out of the house large quantities, and it is convenient to take hold of the cakes with the ice-hooks when they are standing on edge. But for ordinary family use, I always prefer placing the large ice cakes flat-wise, as, by removing the covering, it is easy, having a proper tool, to cut the cakes as they are found into convenient pieces for use, exposing but little surface to the air while taking out the supply. I think the ice keeps better when the widest parts of the cakes rest on each other. Less air finds its way between. But this is principally a matter of convenience. Persons who have not tried freezing the whole mass of ice into one solid body are often giving advice to use water on a cold day to freeze the cakes, and fill up all spaces between them with ice thus made. Quite likely such a solid mass will keep well, but the difficulties attending chopping it out, and breaking it into chips and splinters as used, are so great that such a mass of ice is of very little value. I have tried this plan, and have made ice in the house by using a jet of water that froze as it fell, and formed a solid mass, that the next summer was of very little value, as it could not be taken out in any convenient form, and the labour of chopping it out was more than would have been required to cut, draw, and place in the house. And I have tried freezing the cakes into a solid mass by using chips and water in a cold day, and have given up all such notions.—*Tribune.*

FLOWER GARDENING.

A very decided change has lately set in with regard to small flower gardens attached to villa residences, that proves how much more powerful example is than precept. For I now find that owners of these little gardens take note of the changes they see in public gardens, or such as by the liberality of their owners are thrown open to the public for certain portions of the year, and are copying the prevailing fashion of turfing over unnecessary beds and walks, and throwing the additional space into the lawn or Grass plot. Generally a bed or border all round is now the fashion, for under the shelter of the dwelling house many comparatively tender plants may be grown, and by the roadside or exposed ends some rather tall shrubs are desired for to ensure privacy, and in front of these herbaceous plants and bulbs with annuals in summer make an effective display. Where the turf was for years cut up with a lot of sharp-pointed, angular figures that no one could fill properly, much more cut the Grass in the niches of turf left without injury to the flowers, one or two good-sized beds of simple outline have replaced them, so that the little mowing machine may pick up every particle of Grass without damaging the contents of the beds. I find, too, that the plan of getting a few shapely little Conifers from the nurseries for furnishing the beds in winter is taking the place of having bare beds for half the year, and by planting common bulbs and surfacing the soil with Forget-me-nots, Silenes, or Pansies a very pretty effect is produced in spring. A good specimen Holly or other evergreen shrub now generally marks the site where the beds have been turfed over, not only with advantage to the labour of keeping in good order, but also for the general effect at all seasons. J. G.

Linton.

A Winter-flowering Honeysuckle.—Flowers that are so delicately perfumed as those of the Honeysuckle have a special value in winter, and as Honeysuckles can be easily forced and had in bloom at that season, the wonder is that they are not more largely grown for the purpose. There is one variety, however, I think not generally known that flowers naturally about Christmas, the name of which is Lonicera fragrantissima, and although not so large and showy as some, it is of great value for working into bouquets or using for button-holes, for either of which purposes its pale, highly-perfumed blossoms are particularly adapted. If grown in pots and kept pinched in so as to induce a lot of small twiggy shoots, it is very floriferous, as also when trained to a wall having a sunny aspect, and treated in the same manner, as every joint or bud then emits blooms, which are produced for some time in succession. The great advantage of growing this particular kind is, that without any artificial heat whatever the sweet odours of this favourite class of plant may be enjoyed at a dull time of year, as all it requires is a little shelter from the wintry blast, and, with this afforded, quantities of flowers may be gathered from it. The best way to treat it when used as a pot plant is to spur or prune it back a little every spring just before the young growth commences, so as to get as many fresh shoots as possible, the heads of which, nipped out well, as above mentioned, cause them to break again and form fine bushy heads. Two or three of these placed in a greenhouse would quite scent the air, and last till any of the other varieties can be got in. The best of these for forcing are the shrubby kinds, such as Ledebouri, præcox, odoratissima, and Xylosteum, but most of the climbing varieties are amenable to the same treatment, and when somewhat stunted in pots partake a good deal of the habit of the former. All the different sorts of the Honeysuckle may be propagated in several different ways, and cuttings put in now of the half-ripened young wood will strike freely under glasses in sandy soil on any open border, or they may readily be increased by layers, but these take a year to root sufficiently to be severed from the parent plant. Short pieces of the tender growths taken off with a heel in the spring and placed in moist heat soon make plants, and this is the most expeditious mode of working up a stock.—S.

Winter-flowering Honeysuckle (Lonicera fragrantissima).

East Lothian Stock.—This is one of the very best hardy flowering plants which we possess. It has many good qualities to recommend it, being pretty in colour, sweet-scented, and of easy culture. When cut it will last eight or ten days, provided the water is changed occasionally. A good bed of it is most useful where cut flowers are in request. We have a row of it which up to the present time has been a mass of bloom, and they have been in that condition since July, notwithstanding that baskets of flowers have been cut from them for decorative purposes. The seed was sown in boxes in February and put into heat; when the seedlings were well up they were removed to a warm, light pit, and gradually hardened off until May, when they were planted about 15 in. apart, alternate plants being of different colours, consisting of scarlet, white, and purple. They very soon established themselves, and grew rapidly until July, when they met in the rows, and began to bloom profusely, with scarcely a percentage of single ones among them. They now look like a dwarf hedge, 18 in. high and as much across, and, as has just been stated, they are a blaze of flowers, and have the appearance of continuing in blossom till Christmas, should the weather keep open.—W. W.

Fuchsias for Planting Out-of-doors.—It is much to be regretted that growers of Fuchsias limit themselves almost exclusively to hybrids of garden origin, disregarding, or nearly so, the important species which we have had so long; for instance, it is seldom one meets with that fine old plant Fuchsia fulgens, and still seldomer do we see F. corymbiflora in good condition. Many years ago I met with both these in a garden a few miles from Windsor, planted out in beds in the flower garden, the first-named being from 6 ft. to 7 ft. high, the last one still higher. I think they were taken up in autumn and stowed away after the manner of Dahlias, and they well repaid the trouble, as the flowers, like those of all the section, being of a pendent character, are not so effective when seen on small plants as on large ones, and both kinds can be raised from seeds. There is also a small variety very seldom met with, and for many years I lost sight of it altogether, but I eventually ran against it in an old garden in Surrey. It used to be called F. parviflora or F. microphylla. It is a pretty little kind, and ought to be more generally grown than it is, as it is a most abundant bloomer. There are also, I believe, one or two other species distinct enough for ordinary hybrids to be entitled to a place in collections, but the kinds which I have named are pre-eminently so.—A Retired Gardener.

Canterbury Bells.—I have lately filled a border, about 120 ft. in length and 7 ft. in width, with nearly 300 strong plants of this fine hardy biennial. That such a mass of it will give a rich and varied effect next summer I have no doubt. The only drawback is the hot, dry weather that generally prevails in June and July—the blooming period—which is apt to affect this Campanula. It is therefore well to give the individual plants plenty of room, in order that they may have all the moisture possible when most required. If seed be sown in pans or boxes in the month of April, the young plants so produced will develop fine compact heads of foliage, and in this way will be quite ornamental in the borders during the winter. The flowers of the Canterbury Bell are most useful for house decoration, and, being borne individually on stems from 4 in. to 6 in. in length, are specially adapted for cutting. Some of the blooms are drooping, but in a good strain, where there is an abundance of the double forms of flowers, the blooms are more erect, and work well into nosegays, or are useful for any purpose. It is not difficult now to obtain some twenty or more distinct hues of colour in a number of plants, ranging from pure white to blue and purple, the rose-coloured tints especially being exceedingly handsome.

The plants also lift into pots easily, and when so treated, and plenty of water given them, will hold their flowers for a long time. When in pots they are exceedingly ornamental for the decoration of verandahs, corridors, halls, and other cool places.

Showy White-flowered Bramble (Rubus deliciosus).—This, though a very old plant, is not often seen in private gardens, but it is well worth culture, as one of the most striking of early-flowering shrubs. Our illustration was prepared from a finely-flowered plant in the Royal Botanic Garden, Regent's Park. Its large, white-Rose-like blossoms are succeeded by reddish-purple, Blackberry-looking fruits, which possess an agreeable flavour. The plant is perfectly hardy, and, like all other species of Rubus, may be readily increased by root cuttings. It may, we think, be obtained from Mr. Ware, of Tottenham, in whose nursery we have seen it finely in flower.

TOWN GARDENING.

Carnations.

These comprise two great classes, the tree or perpetual, and the ordinary garden kinds. The former grow to a great size, and are generally regarded as greenhouse plants, as, with proper treatment and in a genial temperature, they may be induced to produce their beautiful flowers in winter. But it is very difficult to get them to do so in a town; and as we are now dealing with out-of-door plants, we confine our observations to the ordinary Carnations which are by far the most suitable for the open border. Though it must be remarked, that if you have a low-roofed glass house without fire-heat in which you can grow and flower these lovely flowers in pots, you will succeed far better than by keeping them exposed. When planted out during summer they must be wintered in a cold frame or other suitable quarter; a sitting-room window will do.

Out-door Culture.—We will take the out-door culture first, and then give instructions for growing in pots for the benefit of those who have the conveniences for doing so. Nice healthy plants should be obtained about May; it is not advisable to plant out before the beginning of this month in towns. We prefer those that have been potted separately and kept through the winter in large 3-in. pots, or if forward, they may have had a shift into 5-in. or 6-in. early in spring, and be planted out from these. Choose a nice sunny position, sheltered from cutting winds, and prepare the border by digging it deeply, and incorporating a good quantity of thoroughly rotted manure; anything that has been burned in any way, especially such as charred turf, may be added in liberal quantities to the soil with advantage. But be careful to see that there are no wireworms in the soil, for these are deadly enemies to Carnations, and indeed to all the Pink or Dianthus family. Put the plants in firmly, and make the soil solid all around them. Water in dry weather, and when they run up for bloom, tie the stems neatly to slight, but sufficiently strong stakes. They will flower in July or August.

Propagating.—This is done in two ways, by layers and cuttings, or pipings. The first is the most simple and general. In August, as early as possible, take the "Grass" or shoots that have no show of flower upon them, and prepare a place for each by making as many shallow holes or "scoops" in the soil close round the old plant as there are shoots to be layered; and prepare them by putting a good handful of sweet, fresh, sandy loam, with a little leaf-mould mixed with it in the hollow for the layer to root into. Then, having some silver sand and a supply of large hair-pins or hooked twigs cut from Pea sticks or the like, take each shoot and with a sharp knife cut half-way through it in a sloping direction, and from underneath, just where it makes the bend upwards, or where the strong green leaves begin to cease, and the stem looks brown and shrunken. Put a little sand for it to rest on, and peg it down carefully into its place, putting a little sand round the cut, and a handful of the loam on the top; press all firm, and give a good watering to settle the soil. They must not be disturbed till November, when they will be rooted, and should be carefully lifted with balls of soil, and potted singly in 3-in. pots, using rich sandy loam. Keep them rather dry in a cold frame during the winter, with plenty of air on all favourable occasions, but keeping close shut up and well matted in hard frost. In spring plant out again as before directed. Cuttings should be taken earlier, and if any quantity are wanted, prepare a small frame for them by setting it on a bed of nice, sweet, mild, fermenting materials that will ensure a gentle and steady heat. Place a few inches of drainage in the frame, and on that some nice sandy loam. The cuttings should be 3 in. or 4 in. long, cut neatly just below a joint, or pulled out at the joint, and any film or fibre trimmed off with a sharp knife. Set these in the bed pretty thickly, and give a good watering, enough to make the soil like so much mud. Let the leaves dry, and then shut the frame up close, and admit little or no air until they are well rooted, which every one will be, if properly done, in about six weeks; then pot off singly in 3-in. pots. Keep close for a short time, then harden well, and keep through the winter the same as plants from layers.

Culture in Pots.—Good, strong plants, such as those described above, always choosing the best, should be taken about March, and potted direct into the pots in which they are to bloom. These may be 7 in. or 8 in. wide for one very strong one, or two or three, or even four may be put in a pot from 8 in. to 11 in. wide. The soil should consist of three parts good turfy loam that has been either partially burned or well exposed to the action of the frost out of doors, and one part of well-rotted manure, with a little crushed charcoal, and some sand if needed. Pot the plants very firmly, give a moderate watering, and place in a low, airy, and very light house—either a span-roof or lean-to will do, but the former, running north and south, is preferable. Give abundance of air and no shade. Water only when the soil is dry, and as the flower-buds expand give liquid manure twice or thrice a week. Thin out the buds if numerous; the first, or top bud, the third, and fourth or fifth, or sometimes both, are best to leave, as a rule. Stake as required. When the flowers are over remove from the house, and stand out of doors on boards or slates, to keep worms from entering the pots. To take layers from the plants prepare as many 3-in. pots as are required by putting drainage in them, and filling up with sandy loam. Arrange these round the old plant, and if all are plunged in some open material so much the better. Proceed exactly as for layering out of doors, but instead of a peg, a stone placed on each shoot just over the cut is generally used. When rooted, separate from the parent, and treat in the ordinary way.

Raising from Seed.—Carnations may be raised successfully from seeds. Obtain a good strain, and sow in spring or early summer in wide boxes of sandy loam and leaf-mould. Prick off and pot as required; they will bloom either in pots or the open ground the next autumn. The seed-pans and the young plants should be kept in cold frames till they are strong.

Picotees are generally associated with Carnations, but we do not recommend their being attempted in anything like impure air, as they are far more delicate and susceptible to climate than the Carnation.

Chrysanthemums.

There are several distinct varieties of this popular plant. The old fashioned early recurved (*i.e.*, having the petals turning outwards from the centre) comprising only a few varieties, of which the best known and most useful are the ordinary yellow, white, and red, are the most suitable for culture in towns where no protection can be given them. Not only are these hardier than the newer and more fashionable incurved kinds, but they come into flower much earlier, a great advantage, as the later ones almost always get cut off by early frosts if left exposed; moreover, it must be borne in mind that as the winter draws on the air gets more and more loaded with smoke and dirt every day, so that even if late flowers could be induced to open out-of-doors, they would be so dirty as not to be presentable. These early kinds require very little care. The ground should be well dug and manured for the reception of the plants, and once planted they will last for years, the only attention needed being to cut off the old stem down to the ground as the flowers wither, thin the shoots when they appear in spring, stake them as required, and give them a good soaking of liquid manure in dry weather in late summer and autumn. When the stools get very old it is advisable to separate and replant them, or get a stock of young plants from cuttings, and throw the old ones away.

There are also the beautiful new show varieties, many of which are incurved—that is, having the petals overlapping each other, and pointing inwards. These are by far the most beautiful, and should be grown by everyone who can afford them protection of some kind when in flower, but they will not do much good without. The flowers of some of these are as large and regularly formed as a Dahlia, and far more delicately beautiful.

Next come the Japanese varieties, some of which bloom even later than the last-mentioned, and thus keep up a succession of flowers far into the New Year. The blooms of these are certainly not so neat as those of the incurved, and almost deserve the epithet so often applied

Showy White-flowered Bramble (Rubus deliciosus).

to them by their non-admirers, of "ragged." Still, in their way, they are very beautiful, or at least some of them; the colours are very rich, and the flowers of several of an enormous size.

Then there are the Anemone-flowered Chrysanthemums, which we do not recommend, unless as a variation where a large collection is grown. And lastly, the Pompons claim a place. Many of these can be grown in towns, even entirely in the open, with as good results as the larger kinds, but the flowers are relatively small, and as a rule not very good in colour; still, grow a few if you have room.

Annual Chrysanthemums.—Besides all these, however, there are the very early or summer-flowering kinds (perennials) and the annual kinds, all of which do equally well. The former flower in July, August, and September, and are extremely bright and effective. We strongly recommend them. A few are Aigle d'Or, Cassy, General Canrobert, Illustration, Madame Picorel, and Scarlet Gem. The annual kinds are hardy, and should be sown and treated the same as other hardy annuals. The best are C. tricolor, C. Burridgeanum, C. hybridum, and double snow-white and golden. There are also two very good new kinds—"Lord Beaconsfield" and the "Sultan." Chrysanthemum frutescens, also known as Paris Daisies, or Marguerites, are very pretty and suitable for town culture.

Protecting from Frost.—If you have a greenhouse, or a few spare frame sashes or lights, by all means grow a few of the incurved kinds in pots, or even, if you have a bed or border facing south, and can rig up a framework over it, on which calico can be stretched, just to keep off the cold winds and soot, &c. In this latter case, do not bother with pots, but plant them out in deep rich soil as directed for the early ones, and in October get the framework ready, and stretch the calico, or whatever you have, over as soon as early frosts or cold winds warn you that the protection is needed. Anything will do to go round the sides—old sacks, so that there are no holes in them, or oilcloth; but for the top, which should be about 6 in. or 8 in. from the tops of the plants, as transparent a material as you can provide should be used. Glass is best, of course—the lights of frames not in use at this season coming in admirably. The covering must be partially removed, so as to admit air, whenever safe, especially if it is not glass, so as to give light as well, and on the fine, bright, and clear days we sometimes experience, remove the top altogether, and the sides, too, if it is very fine.

Incurved Varieties.—A dozen of the finest of the incurved varieties are:—Empress of India, blush white, very large; Eve, sulphur white, fine; Fingal, deep rose; General Bainbridge, amber; Jardin des Plantes, intense yellow; Mr. G. Glenny, pale yellow, splendid; Mrs. Dixon, deep golden yellow, fine; Mrs. G. Rundle, pure white, a superb flower; Pink Perfection, pink; Prince Alfred, rose crimson, fine; Venus, lilac; and White Venus, waxy white.

Culture in Pots.—In order to obtain fine large plants and flowers, if you can give them room, take your cuttings in autumn, but spring-struck plants are very good for ordinary display. In the former case take off the young suckers from the surface of the pots when they are about 3 in. long, just as the flowers are over, in the autumn—say November—and put five or six round the sides of a 3-in. pot, using a mixture of sand, loam, and leaf-mould. They will root freely in a warm greenhouse or frame, or they will do so in a cold frame if it is shut up close, and only a little air given on fine days, and well matted up in frosty weather. In this latter case the cuttings will take several weeks to root, but will make as good plants as the others.

Potting-soil, &c.—When they are rooted, which can be seen by turning the plants out of the pots, pot them off singly into 3-in. pots, using the same soil but not so sandy as for the cuttings. Keep them close for a little time after this operation, and if they can have a little gentle heat they will root out more freely; then accustom them to plenty of air. When the roots touch the sides of the pots shift them into 5 in. ones, using a mixture of turfy loam 3 parts, manure and leaf-mould 1 part each, with a little crushed charcoal and coarse-grained sand. This compost will be suitable for every shift onward from this stage. Continue shifting them on as they require it—that is, whenever the roots begin to coil round the sides of the pot rather plentifully, it is time to give them more room; remember, if you want fine freely-grown plants and large flowers, these plants must never become what is termed pot-bound—at least until the pots in which they are to bloom are reached; it is advisable that these should be full of roots by the time the plants show flower. From the 5-in. pots they should be shifted into 7-in., and from these into 9-in. or 10-in.; and, if early, they may have yet another shift into 11 or 12-in. pots; but they should all be in their blooming pots by the end of June, so that whatever size is reached by that time there let them stay. The plants must be kept under glass until the middle or end of April, when they may be placed out of doors, but must be kept from frost. When set permanently out in the open air the pots must be plunged two-thirds or three-fourths of their depth, or even right up to the rim, if possible, either in the ground or in a bed of tan, cocoa-nut fibre refuse, ashes, or other suitable material. This keeps the sun from the sides of the pots, or the roots inside would suffer, also to prevent the necessity for so frequent waterings as would be necessary if the pots were free all round. If the pots are simply stood upon the ground and the ashes or tan heaped round them, each one must stand on ashes 3-in. or 4 in. deep, or on a piece of slate, to keep worms from entering through the drainage hole; if sunk in the ground, make a tapering hole with the trowel only just large enough to take the pot up to the rim, but going down about 6 in. deeper, so as to leave a hollow space beneath for the same purpose. From the first the plants should have all the light and air possible, and plenty of room as well, and when put out of doors they must have an open and airy position, exposed to the full sun. Do not attempt to crowd them at all, but rather have only a few plants, if the room is limited, than too many for the space. Large plants in 10-in. or 11-in. pots ought to be at least 2 ft. 6 in. apart in a row, and if more than one row these should be 3 ft. apart, and, if possible, more. For unless the growth is made under these conditions, and so well ripened or matured, you will have but a few poor flowers, or perhaps none at all.

Stopping the Shoots, &c.—When the young plants, which should only have one stem, are 6 in. or 8 in. high, pinch out the top, so as to induce the formation of three or four side shoots. Do not do this immediately before or after a potting, but wait until the plant has become well established in its pot (we generally do this when in the 3-in.), then take out only just the extreme point, giving rather less water and air until it has "broken" well, and then more again; and when the young shoots are 1 in. or 1½ in. long, shift into the next size. Remember to keep rather drier and a little closer after each shift for a little while, until the roots are working freely in the fresh soil. The points of the shoots may be pinched out as often as they attain such a length, at the third joint, up to the middle or end of July, if you want to make the plants very bushy; but bear in mind that five or six stems are quite enough for a 9 or 10-in. pot to carry, so that, in general, twice stopping will be sufficient; also, that the less the plants are pinched, and the longer and taller the individual shoots have grown by blooming time, the larger and finer will be the flowers, though there will, of course, be fewer of them than if the plants had been pinched oftener. So that if you want dwarf, bushy plants, with plenty of flowers upon them, without so much regard to quality, pinch often; but if, on the contrary, you aim at getting a few fine flowers, and do not mind the plants being tall, only stop once or twice.

Watering.—Give plenty of water in all stages of growth; these plants should never be allowed to flag, and syringe or sprinkle overhead once or twice every day in bright weather, morning and evening being the best times. Manure water is not needed, if the soil is tolerably rich, until the flower buds appear, though some give it as soon as the flowering pots are full of roots; and if the plants appear to need it at this stage give some, but not before the pots are well filled with roots. Give the manure water, which may be a decoction of fresh horse or cow-dung, guano water, or anything suitable, alternately with clear water. Begin with it weak, and by degrees increase the strength to a moderate extent, as Chrysanthemums are gross feeders; reduce the strength, however, again as the days get shorter, in October, and discontinue it altogether when the flowers open.

Thinning the Buds.—When large enough to get hold of, thin the flower buds to two or three, or even one, on each stem, if you want extra fine blooms, for you cannot have quality and quantity at once. As soon as there is any danger of frost, or when the air gets dull and dirty, remove the plants under cover. A light, airy greenhouse, with little or no fire heat, is the best place, but a few spare frame lights, fixed sloping against a wall, 4 ft. or 5 ft. from the ground, or high enough to take the plants nicely, or even calico strained tight on a framework, for the top, and boards, old sacks, canvas, or anything fixed along the front, will make a suitable shelter, as before advised. Of course a light sitting-room window will take a few small plants, but beware of gas in the room—if used the flowers will never open.

Treated as above directed some of the earlier kinds will begin to open early in November, or even the end of October, and the flowers, either cut and placed in water, in which they will last for weeks, especially if covered with a bell glass or shade, or left on the plants, will delight yourself and your friends for a long time, and if a suitable selection is made, and some of the Japanese kinds are included, you will not want for flowers till the end of January or later.

The directions given above apply equally well to the cultivation of the Japanese and Anemone kinds, as well as the Pompon and Incurved varieties, all requiring almost exactly the same treatment, the only difference being that the Pompons do not need such large pots in which to flower as the larger kinds, and the late Japanese kinds need not be quite so forward as the others.

Of course when plants in pots are removed under protection they may be stood much closer together than when growing; indeed they will not hurt touching each other. This is one great advantage of growing in pots, as they may be grown with as much space, and packed as close when in flower, as you please; whereas those in beds must stay as they are. It is a good plan, if there is a south wall, to plant good Chrysanthemums close at the foot of it, and nail them up against the wall like a creeper. In this way they grow very well, and can easily be protected.

B. C. R.

(To be continued.)

ANSWERS TO QUERIES

3769.—**Cockscombs in the Dwelling.**—Our advice would be not to try to grow the Cockscomb in the dwelling. It is a plant that requires a large amount of heat and moisture early in the year, and there are so many fine subjects for window culture, that it is scarcely worth while to attempt the culture of one which requires conditions of growth of a rather peculiar nature. The same, to a certain extent, may be said of the Sensitive-plant, but if you sow the seed in a warm room in April, you would probably get fair-sized plants by the end of the summer. Sow in sandy peat, keep the soil moist until the plants are well up, and pot them off when large enough into small pots.—J. C.

3764.—**Pruning Marechal Niel Rose.**—This requires but little pruning, the operation being confined to thinning out all weakly shoots and shortening back the strong ones to about two-thirds of their length. Each eye left produces a shoot, which gives a truss of bloom, so that the longer and stronger the shoots the more flowers. There are two points to observe in the culture of this Rose. In the first place, it must be encouraged to make a strong growth every year; and secondly, as soon as the flowers have faded, the plant should be cut back hard, so that fresh, free, strong wood be again formed for the ensuing year. This is the only way to get fine blooms, and plenty of them, and accounts for the fact of so many failing to obtain good flowers after the first year or so, for when the old wood is retained the side shoots proceeding

from it are deficient in vigour, so that they cannot by any means give bloom of the finest quality. Maréchal Niel is really only fit for culture under glass, as, when growing in the open air, there is, except in very warm districts, scarcely time enough for the new wood to be made and matured after flowering. In the case of plants grown in pots, the best way is to train the young growths round some stakes inserted round the edge of the pot. When the flowers are faded, cut the shoots hard back, and either shift into the next sized pot, getting away as much of the old soil as possible, or top-dress with some concentrated manure. When growth is completed turn the plants out into the open for a time to harden them. Bring them in about the beginning of November, and prune them at once. Early pruning induces early flowering. —J. C. B.

3755.—**Culture of Lilium Washingtonianum.**—It does not follow because a plant comes from a country where the winter is severe that it is necessary, or even advisable, to expose it to the vicissitudes of our English climate, which is often characterised by periods of excessive moisture, followed by hard frosts, differing in that respect from the winters in many lands, which, although severe, may be more or less dry. Besides, it must be remembered that there is no comparison between a plant in a pot and one in the open ground, the conditions under which they exist being quite different ; so much so, indeed, that no good practical grower would think of leaving even the hardiest plant, when in a pot, unprotected throughout the winter. Keep the Lily in a cold frame, maintaining the soil in a moist condition until it begins to grow, when more water may be given. The fact of the summer being hot where the plant grows naturally will sufficiently indicate the general treatment. Ensure to the p ant a genial climate by keeping it under glass until the middle of June, giving plenty of air ; then place it in some sheltered situation. When coming into flower place it under glass, and allow it to remain there until the foliage dies off, then shift into the next sized pot and treat as before.—C.

3578.—**Ferns for Miniature Fernery.**—The following are all pretty dwarf-growing species : Asplenium trichomanes, Adiantum nigrum and viridis, Ceterach officinarum, Allosorus crispus, Woodsia alpina and ilvensis, Polypodium phegopteris and dryopteris, and the common Maiden-hair (Adiantum Capillus-veneris), which would in all probability thrive when protected by a glass roof. Selaginella helvetica and Kraussiana are two Club Mosses which require no artificial heat, and these might form a carpet from which the Ferns might spring forth. The best way is to plant them out in suitable compost, which should consist of half peat and loam, mixing with it some pieces of sandstone, brick, charcoal, or anything of a like nature, for these small-growing Ferns are not so vigorous of roots as the tall-growing kinds, and every care must therefore be taken to ensure the most perfect drainage. Raise the bed of compost well above the level of the ground, and let some of the larger stones peep out here and there through the soil, forming as it were pockets in which to plant. Many of the more miffy kinds love to find themselves close to a little stone boulder, and will often thrive well when thus situated much better than when placed out in free exposure. If the Fernery is to have a glass roof it should not be enclosed on all sides. Cover say the top and glass up the two ends, leaving it quite open in the front, which will allow of the inmates being inspected when required. Hardy Ferns love a cool, moist atmosphere and partial shade, but they do not like to be in confined quarters. Nothing is gained by shutting them in closely. There is a class of Ferns called hardy exotics, which will thrive under glass without artificial heat, but they are mostly of tolerably strong growth. Lastrea Standishi and opaca and Onychium japonicum might, however, be tried, placing them in the back line.—J. C.

3772.—**Roses in Pots.**—The plants in question may be brought into heat at any time between now and March. The first thing to do is to prune them, the next is to repot them if the pots appear to be full of roots, otherwise top-dress with concentrated manure. Gloire de Dijon must not be pruned back too hard ; strong shoots should have four eyes left on them, and Maréchal Niel should only have the strong wood shortened back a little, cutting out weakly shoots. The other kinds mentioned may be cut back to two eyes.—C.

3762.—**Climbers for Trellis.** — There can be nothing better for forming an evergreen screen than Ivy, which remains summer and winter fresh and green, and which forms a dense eye-proof mass. Regner's and the Irish are the best green kinds, and you might mix with them the clouded white. If Ivy is not wished for, then take any of the evergreen Roses, Cotoneaster microphylla, and golden variegated Euonymus. The best arrangement would be, we think—at any rate what we should adopt in a similar case—to plant in the first place some free-growing hardy climbers, such as evergreen and Orleans Roses, Clematis Jackmani, rubella, lanuginosa, candida, montana, and flammula, golden variegated Honeysuckle, Dutch Honeysuckle, Jasminum revolutum and nudiflorum at regular intervals along the trellis some twelve months before planting the Ivy. Rake the ground well, mulch with dung, and water well in dry weather, so that the climbers are encouraged to make a free growth. They will then run up to the top of the trellis, and may then be allowed free development. The Ivy will clothe all the lower portion of the trellis, and the climbers will keep possession of the higher part, and will bloom freely at their appointed time, thus affording a pleasing contrast.—J. C.

3773.—**Cropping a Garden.**—The following are among the best plants for producing cut flowers : Roses, Carnations, Picotees, Pinks, Pyrethrums, Delphiniums, Sweet Williams, Wallflowers, Stocks, double Zinnias, Asters, Paris Daisies, Anemones, English Iris, Astilbe japonica, Chinese Pinks, Phloxes, Lilium candidum, Geraniums, &c. As regards the vegetable portion, the only chance of making much profit is to have things early or late ; thus early Radishes, Lettuces, Potatoes, Rhubarb, Asparagus, Cauliflowers, &c., will be cleared off easily, but the midseason things when everybody has them will be a drug. Read the calendars carefully ; there's no royal road to knowledge. —E. H.

3742.—**Protecting Budded Roses.**—Procure sone Broom, and for dwarf Roses stick a few pieces in the soil all round the plant, and then bring the tops together and tie them firmly. The plants will have sufficient light and air, and be protected from the frost and cold winds. For standard Roses, fasten the thick ends of Broom tightly round the stock just below the buds, and tie the tops together. Such is the way I protect mine and seldom lose one, although only half-a-mile from the sea, and have very cold winds to contend with, which I find causes more mischief to the young shoots than frost.—H. E. B.

3771.—**Anemones.**—If Anemones are set a couple of inches deep, they do very well ; but there should be two plantings of them—one in November and the other in February. The finest flowers are generally produced the first spring after a new sowing. This will prolong their blooming season in spring, and by planting or sowing at different seasons they may be had in flower nearly all the year round. Both double and single require a light, rich, loamy soil, with a mixture of sea-sand. If sea-sand is not to hand, silver sand and some salt sprinkled with it will answer the purpose very well.—Bill-o'-the-Wisp.

3761.—**Hyacinthus candicans.**—I have kept this for three seasons in winter in sand in a pot successfully. It is said to be perfectly hardy.

3768.—**Spent Dyewoods.**—These are of no value for plants ; they might do to form drainage for bulbs and plants used some inches deep at bottom of trench.—W. B.

3766.—**Preventing Tree Stumps from Growing.**—To destroy the vitality of tree stumps is very difficult, as when the upper portion is killed they will often break out below. I once killed a number in this way ; I smeared them thickly with gas tar, and set fire to the tar ; the heat destroyed all the latent buds.—E. H.

—— Bore a hole in the heart with a large-sized auger, and insert an ounce or two of vitriol ; then cover with a small piece of slate and turf ; or if there are no trees near a heavy dressing of coarse salt will answer same purpose.—R. W.

3760.—**Forget-me-nots for Pot Culture.**—The best Forget-me-not for pot culture is dissitiflora. It should be grown thinly either from seeds or cuttings—with me the former plan does best—on a border in the open air till just before the flower-spikes push up, then potted, and brought forward in a cool, light, well-ventilated house or pit. Strong plants potted now and placed in a well-ventilated cool pit will flower well in the greenhouse or window in early spring.—E.

3761.—**Wintering Hyacinthus candicans.**—As the plants have grown so strongly, it would be a pity to take them up. This plant is hardy in light warm soils, but you may ensure its safety by covering the crowns with ashes, placing them in the form of a mound, so that they will throw off heavy rains.

3774.—**Passiflora cœrulea.**—Prune it back to about three-fourths of its length, and in the spring, just when growth is commencing, shift it into the next sized pot, unless the soil does not appear to be full of roots, in which case a top-dressing of concentrated manure will suffice. Loam, leaf-mould, and a little peat is the best soil. Give plenty of air in the summer.

3770.—**Anemones.**—Anemones are easily cultivated, and may be planted any time in open weather during the autumn and winter months, but as a rule the sooner they are planted after November the better. Plant 3 in. deep and about 5 in. apart. Keep the surface of the bed stirred when the young foliage appear, and look sharp after snails, &c.—E. H.

3767.—**Unfruitful Walnut and Mulberry Trees.**—Neither Walnut nor Mulberry trees bear well in a young state. They seldom bear much before they are twenty years old. Pruning their roots a little will probably throw them into bearing ; just cutting off their extremities on two sides will suffice.—H.

3699.—**Constructing a Fernery.**—In constructing a Fernery, I should advise "R. W. G." to be very liberal in the use of rough blocks of sand, stone, burrs, &c. Let it appear as natural as possible, and not as if done for effect. Wish regard to the cement and its colour, I should advise him to mix it with some red ochre for bricks, and for stone red ochre and lamp black, so as to have the cement to match the brick or stone, as the case may be. I have done so with very fine effect.—Bill-o'-the Wisp.

3642.—**Draining a Garden.**—Sink a shaft in the centre of your piece of ground, about 5 ft. or 6 ft. in diameter, and 6 ft. or 8 ft. deep, or till you come to sand, gravel, or some stratum that will absorb moisture ; fill the shaft with sound or broken pipes to within 4 ft., of the surface of the ground, then make your drains with 4 in. drain pipes from every direction to fall towards the shaft, letting all the shafts meet on the centre of the broken shreds. Then level your garden, but if your soil should be stiff clay you will require a copious admixture of brick rubbish or fine gravel worked into it in order to avoid the surface water.—J. Winter Wood.

3845.—**Moving Bulbs, &c.**—I have my garden planted with a miscellaneous lot of bulbs, such as Snowdrops, Anemones, Tulips, Winter Aconites, Tritonias, Scillas, &c. I am going to move in about January or early part of February. Will these bulbs stand moving ? if so, would it be advisable to take them up with a ball of soil to each, or detached from the soil ? Also, will it hurt perennials to move them so early in the spring ? I have also Pæonies and Rose trees I wish to take with me. —Thos. Percival. [All the above may be moved with safety at the time stated provided the weather is open. Of course, the more soil you can get with the roots the better, but this is not of so much importance as carefully avoiding breaking the roots.]

3846.—**Gooseberries for Exhibition.**—*A Cottager.* —The following are the best kinds of Gooseberries for exhibition : Reds—London, Dan's Mistake, and Clayton. Yellows—Leveller, Drill, and Catherine. Greens—Stockwell, Telegraph, and Shiner. Whites—Antagonist, Careless, and Hero of the Nile.

3847.—**Oxalis rosea and O. rosea floribunda.**—*W. B.*—These are very similar ; floribunda is a slight improvement on the type.

3848.—**Dividing Orchids.**—*L. L., Peckham.*—Cypripedium insigne should be divided in spring after flowering if you wish to increase your stock.

3849.—**Lilium umbellatum.**—*Aston Cross.*—This may be grown either in pots or the open ground. It likes light sandy loam or peat, but it will grow in any ordinary good garden mould.

3850.—**Watering Ferns**—Should deciduous Ferns be kept moist, or allowed to remain absolutely dry through the winter ?—R. C. C. [Keep the soil moist, but not wet.]

4851.—**Monkshood.**—In looking over a list of plants for a mixed border, given in Gardening, Oct. 9, I find amongst the list Aconitum, or Monkshood, and thought it would be of service to some of your readers to know that it is a deadly poison. I think it would also be advisable to make it known if there are any other poisonous plants in the list, so that they could be left out if any one was intending to grow them if they could not be grown with safety.—W. W. G. [It is advisable oftentimes to exclude berry-bearing plants of a poisonous nature from gardens to which children have access, but we do not see why poisonous-rooted plants should be omitted. Of course, if Monkshood is planted in the Horseradish bed bad results might follow, but we have never heard of any one being poisoned by eating the flowers they grow to look at.]

3852.—**Wintering Sparaxis.**—I sent for a dozen Sparaxis bulbs as an experiment this year (as Ixias succeed well in my little garden), and planted them with my other bulbs. Now I find I should have kept them till February, and they are already 3 in. or 4 in. high green and flourishing. What can I do to save them ? Will protection from frost be enough ? or must I pot them and take them in ? I have no greenhouse.—Junia. [Put a mat over them during severe frost, but do not keep them covered up only when absolutely necessary ; a glass frame is the best.]

3853.—**Rhubarb, Gooseberries, and Asparagus.**—*Pitman.*—Plant Rhubarb at any time from September to March. If a large growing sort, you must allow quite 4 ft. from plant to plant, but if a small sort 3 ft. will be plenty. Gooseberry trees may be planted 2½ ft. or 3 ft. apart each way. When they get too big, each alternate one may be removed. Asparagus is best planted in March.

3854.—**Moving Holly Hedge.**—*J. L.*—A Holly hedge which has only been planted two years may be removed with safety at any time from September till

April if the weather is open. Deep sandy soil well enriched with manure suits the Holly best.

3855.—**Radstock Beauty and Blanchard Potatoes.**—*W. J. K.*—There ought to be no difficulty in distinguishing Radstock Beauty from Blanchard, although both are flattish-round and similar in shape. Radstock Beauty is less depressed at the eye end of the tuber, and the blotching is a bright reddish-carmine. When cooked the flesh is yellowish-white and of first-rate table quality. The haulm is spreading, and the stalk paler than is that of Blanchard. This latter has very distinctive purple markings, and may easily now be distinguished, because tubers that have once been exposed to the light will show a purple hue all over, and it is not often that it can be exhibited twice for this reason, whilst Radstock Beauty keeps fresh for a long time. The two best mottled rounds are these you have; the two handsomest and best red rounds are Triumph and Grampian; the two best purple rounds, Vicar of Laleham and Scotch Blue; the best white rounds, Schoolmaster and Porter's Excelsior. Thus you get light rounds that will be found in every prize collection, and taking prizes everywhere at single dishes. At Birmingham Cattle show, Grampian and the Vicar of Laleham were the best coloured rounds, and Porter's Excelsior and Schoolmaster the best whites. Dividing Kidneys in the same way, the best two whites are Woodstock Kidney and International; the best reds are Mr. Bresee and Garibaldi; the best purples, American Purple and Purple Ashleaf; and the best mottled kinds, Heather Bell and Baron's Perfection.—A. D.

3856.—**Manure Water.**—I shall be glad to know whether a bushel of the manure is the correct quantity to use to 12 gallons of water for making liquid manure? I wish to use it for Pelargoniums, Fuchsias, Calceolarias, and other ordinary greenhouse plants when necessary. The above quantities are given in the first volume of GARDENING, but the proportion of manure seems so enormous for the water, that I have never ventured to use it.—E. E. K. [At first put have liquid manure and half clear water, and gradually increase the strength as the plants gain vigour. The tub must be filled up from time to time.]

3857.—**Pyrethrums.**—*J. B. S.*—These are best planted in September; you had better now wait till March. There are hundreds of spring-flowering plants, and you do not say what kind of plants you need.

3858.—**Treatment of Musk.**—*Amateur.*—Musk is a perennial, although it may be used as an annual by sowing seed every spring. If you take up the roots in spring and divide them, you can increase your stock to any extent.

3859.—**Pruning Moss Roses.**—*J. N.*—Cut out most of the old wood close to the ground, and also remove any weakly young shoots, and slightly shorten back any that are long and straggling. Prune now.

3860.—**Exposing Manure to the Air.**—*E.*—If the manure is covered with soil, the ammonia will not be so likely to escape, but there is no advantage in burying manure in a pit, as it cannot be conveniently turned when necessary.

3861.—**Culture of Cyprus Grass.**—*E.*—If you mean Cyperus alternifolius, use rich turfy loam and leafmould with plenty of sand added. Place in a temperature of 50° to 60°, and give plenty of water.

Names of Plants.—*We cannot undertake to name what are termed florists' flowers, which include Pelargoniums, Fuchsias, Roses, Chrysanthemums, &c. These can only be named by specialists who have the means of comparison at hand.*——*Novice.*—1, Phyllocactus (species); 3, Echeveria metallica; 5, Kalosanthes coccinea; 6, Sedum carneum variegatum; 7, Coronilla glauca; 8, Saxifraga sarmentosa; 9, Sedum Sieboldi.——*N. M. R.*—New Hawthornden.——*Mrs. D. Eaton.*—1, Schezœa dichotoma.——*W. W. B.*—Hairy Crowfoot (Ranunculus hirsutus); dig out the roots whilst the ground is soft.——*W. W.*—Eribotrya japonica, the Loquat or Japanese Medlar.——*E. M. R.*—Eupatorium of some kind.

QUERIES.

3862.—**Hedge for Garden.**—The west side of my garden is bare. What sort of hedge can I plant on the bank near a pond that would soon grow and keep off the boisterous west winds. Some of my friends recommend Willow, but would not that be rather unsightly?—PITMAN.

3863.—**Vegetables for Exhibition.**—Will some experienced reader inform me what are the best kinds of vegetables for competition, viz.:—Celery, Onions, Leeks, Beet, Turnip, early and late Carrot, Rhubarb, Greens, early and late Cabbage, Savoy, Cauliflower, Parsnip?—W. B.

3864.—**Covering a Vine Border.**—Our man having heard me read the article in GARDENING ILLUSTRATED on "How to make and plant a Vine border," thought he would thatch our border, which is outside, and the Vines, which are about ten years old and taken through the brickwork, are bearing a fair crop and nearly ripe, yet the foliage was green. Instead of using dry straw he put a coating of about 1 ft. thick of hot long stable manure, the ground being frozen hard at the time. The result is that all the leaves of the Vines were scorched up in one day, and the fruit begins to look shrivelled. Can any one tell the reason? House heated with hot water, kept to between 60° to 70°. What must we do with the Grapes?—EDITH.

3865.—**Iris Kæmpferi.**—Does this require any special protection when planted a month ago? and will good rooted plants blossom next year?—W. B.

3866.—**Romneya Coulteri.**—Can any one enlighten me on the culture of this plant?—W. B.

3867.—**Malformed Chrysanthemum Flowers.**—I shall be obliged if any one will inform me the reason of my Chrysanthemum flowers being small and malformed. In some cases the malformed blooms are the centre ones on a branch, and in other cases there are very good blooms on the same plant. Manure water was regularly administered until the plants showed colour. I have done a fair amount of disbudding.—F. J.

3868.—**Mulberry Tree not Fruiting.**—There is a Mulberry tree in my garden which I have never seen showing any bloom or bearing any fruit; it is thirty or thirty-five years old, and looks in a healthy condition; it is the only tree of the sort in the garden, and was transplanted about ten years ago. Any advice about it will much oblige.—O. V. J.

3869.—**Raising Seeds.**—I have received a packet of seeds from Sydney containing Clianthus Dampieri, Kennedya rubicunda, Swainsonia coccinea, Cape Broom, Eucalyptus (Blue Gum). Having a cool greenhouse, I would be glad to know if these seeds could be successfully brought on without bottom-heat; and if so, at what time they may be sown, and in what soil.—SUBSCRIBER.

3870.—**Tomatoes under Glass.**—Referring to a most useful article on the Tomato by "H. H." (p. 437, GARDENING ILLUSTRATED, November 13), will that gentleman still further oblige by saying if the top of his Peach house is covered with trees? I once tried Tomatoes on the back wall of a Vinery and they were a complete failure; I suppose in consequence of the shade. Will "H. H." also say if he pinches the shoots as is usually recommended? If so, how does he get such large plants 70 or 80 sq. ft.? I have nearly fifty fine plants here this year against a south wall, and gathered about two dozen fruit.—F. S.

3871.—**Violets in Winter.**—Is it natural for Violets carefully planted as recommended in an article in GARDENING, November 27, to lose their leaves during the recent frosts when planted out-of-doors? Will they, if thoroughly protected with fine ashes, send out fresh leaves and flower in the spring? What description of Violet will stand out-of-doors a winter like our last one?—PANSY.

3872.—**Roses not Flowering.**—I have several large Gloire de Bordeaux Rose trees which make an immense amount of wood and foliage, but produce no Roses. Can any reader inform me what is best to do to produce plenty of Roses and not so much wood and foliage?—J. LACEY.

3873.—**Holes for Fruit Trees.**—I have planted 200 Apple, Pear, and Plum trees in an old orchard, the soil of which is good fibry loam. The holes were dug about 2 ft. 6 in. across and 1 ft. 6 in. deep, the bottom dug up and mixed with good rotten manure. The orchard lies dry. I am told by a friend I shall lose all my trees, because I have not dug the holes 5 ft. across. Will some one oblige me with their opinion on the subject?—A. S. V. P.

3874.—**Pruning and Training Vine.**—I have recently purchased a Black Hamburgh Vine; it is what is called a fruiting cane, and consists of a single rod about 8 ft. long. I have planted it outside a small unheated, lean-to house (8 ft. 6 in. by 5 ft. and 6 ft. high in front). It is drawn through under the sill, and I intend training it under the roof. Being an entire novice in the art of Vine growing, I should be obliged if some reader of GARDENING will kindly instruct me how to proceed in the matter of pruning and training.—J. G. SMITH.

3875.—**Foxgloves.**—Having transplanted June-sown seedling Foxgloves about two months since, so as to procure a show next season, I should be glad to know if they are likely to survive the winter, as the late rains and frosts have entirely blackened and partially destroyed the foliage, and what were fine healthy plants a short time since are now wretched objects. They are planted in a broad bed facing south-west in ordinary black garden mould in which such subjects as Gladioli, Japanese Maize, &c., do well.—S. H. G.

3876.—**Insects Eating Ferns.**—The young fronds of my Maiden-hair Ferns appear to be bitten off by an insect as soon as they come up. Can any one kindly tell me how I should treat them? they appear to be in good health, and I cannot discover any insects about them.—F. C. H.

3877.—**Old Roses.**—Can any one inform me where I can obtain some plants of old Roses, such as Alba moschata, Austrian Brier, villosa, &c.?—S. E.

3878.—**Camellias from Cuttings.**—Should these be placed in an ordinary pit with heat? Should they be cut down to two or three joints, or be taken from the main stem? Notes on the above by some experienced contributor would no doubt prove beneficial to many.—AMATEUR.

3879.—**Pruning of Rosa rugosa** (old Macartney Rose).—Will any reader inform me when and how to prune a strong-growing plant (small bush) of this in the open border? also, where I can get a strong plant of the white variety? It seems to be scarce.—H. S. L.

3880.—**Lilium giganteum and Lilium Washingtonianum.**—I have failed with both of these fine Lilies. Will any one who has been more fortunate favour me with practical directions for their culture? Is not their alleged hardiness (unless in favoured localities) a myth?—H. S. L.

3881.—**Unfruitful Cherry Tree.**—I have a large White Heart Cherry tree which does not bear any fruit. It seems healthy, but the spurs die away every year. It is a very fine tree, and it is trained to a west wall, and here we do not get such severe winters as in England. I should be glad to know the cause of its unfruitfulness and the remedy.—H. G., *Guernsey*.

3882.—**Keeping Frost from Evergreens.**—Will some reader of GARDENING kindly give me instruction how to protect from frost my Laurels and Bay trees, as I had several cut down with frost last winter and some killed; they are from 3 ft. to 8 ft. high; the soil is wet and heavy.—F. C.

3883.—**Lilies and Forget-me-nots.**—I have had great pleasure from following a plan, often recommended in GARDENING ILLUSTRATED, of growing bulbs in a bed carpeted with low-growing plants, and have been very successful with Tulips and Silene pendula. I want to plant Lilies in a bed of Myosotis dissitiflora. Will not the yearly replanting which I am told is desirable for the Myosotis be very injurious in disturbing the Lilies? Can this difficulty be overcome?

3884.—**Draining a Garden.**—I lately formed a garden on what had previously been a bit of waste ground, 25 yds. by 18 yds., well sheltered by buildings from north, east, and even south winds, but bounded on the west side (25 yds.) by an old pool 10 ft. deep, which stretched from one end to the other. As the old piece of ground was only a few inches above the water, I had a very large amount of good soil hauled on to it, raising it to about 22 in. above the surface of the pool, and have had some good crops from it this summer. It, however, wants draining. Is 22 in. not deep enough, so that I could drain it into the pool? Or, if I made a blind well in the middle of he garden and drained into that, would not the water from the pool (9 yds. off) percolate and enter the well?—PITMAN

3885.—**Pruning Climbing Roses.**—I have several climbing Roses which I wish to train on walls and pillars; they were planted last year and during last summer, and have made considerable growth, some of the shoots being 6 ft. long. The late frosts have in some cases nipped the ends of the shoots. Should I prune them? if so, to what extent and when should I do so?—A. W.S.

3886.—**Plants for Hanging Baskets.**—Will any one give me a list of Ferns and plants most suitable for hanging baskets for spring, summer, autumn, and winter?—R. W. W., *Belfast*.

AQUARIA.

FISH DYING IN AQUARIUMS.

I DO not gather from "A New Reader's" circumstantial account of his aquarium, p. 458, that he has fulfilled the first requisite in its arrangement—viz., growing plants. If he had supplied these, instead of daily changing the water, which need only be done once in six months, he would have had better results, as plants, fish, and mollusca supply all the essentials of healthy life in an aquarium—each giving out what the other lacks, the snails acting as scavengers, clearing off the superfluous growth of vegetable matter.

In the artificial state in which "A New Reader" keeps his fish it is impossible to ensure healthy life, as, although a daily change of water may be refreshing to the fish, it is a spasmodic and unnatural excitement, which cannot contribute to longevity.

It is perfectly useless to "throw in a handful of weeds or watercress." Your correspondent might just as well throw on his flower-bed a handful of daisies and marigolds and call it a flower garden! Water plants, like any other plants, require planting in the sand or gravel forming the bed of the tank, when they will grow luxuriantly, simply requiring cutting occasionally to keep them within bounds. I have kept gold fish for years in conjunction with water plants, only changing the water when the plants and rockwork require rearrangement.

From my experience, fish do not need much feeding, although I sometimes gave my fish, by way of treat, a few bloodworms or pieces of raw beef cut very small. Vermicelli is unobjectionable, except that it tinges the water with a milkiness, but bread should never be given to fish, as it is very injurious.

I should be sorry to "paint" my fish with bichloride of mercury, or any other chemical. If I did I should not be at all surprised at their remaining dormant for a fortnight or any other period. When gold fish become furred with fungus or slime the simple remedy is to place them in a shallow vessel of water and throw a handful of silver sand on them, when their own efforts to rid themselves of this will at the same time remove the fungus.

I should recommend "New Reader" to place at the bottom of his aquarium a layer 2 in. deep of well-washed shingle, or coarse sand, and plant Vallisneria spiralis, Chara vulgaris, or Myriophyllum spicatum. The common Anacharis is very pretty, but it grows so rapidly that it requires constant pruning, and therefore a very small quantity will suffice. I should allow on an average one water plant to two fish. In planting it is well to tie the ends of the plant to a stone, burying it in the shingle, otherwise they are apt to get loose and float to the top. It is not necessary for the plants to have roots, as most water plants rapidly strike root when placed in sand or gravel, and they can be divided *ad infinitum*. A few small eels, about 3 in. long, which can be purchased in London for a penny each, will be found a lively and interesting addition to an aquarium.—FRANCOIS, *Enfield*.

To Preserve Eggs.—One pound of quick lime, one pound of salt, three ounces of saltpetre, one gallon of water. Boil fifteen minutes, put it into a crock or vessel lined with lead; when cold put the eggs in, place in a cold cellar, and they will keep twelve months.—J. INGALL.

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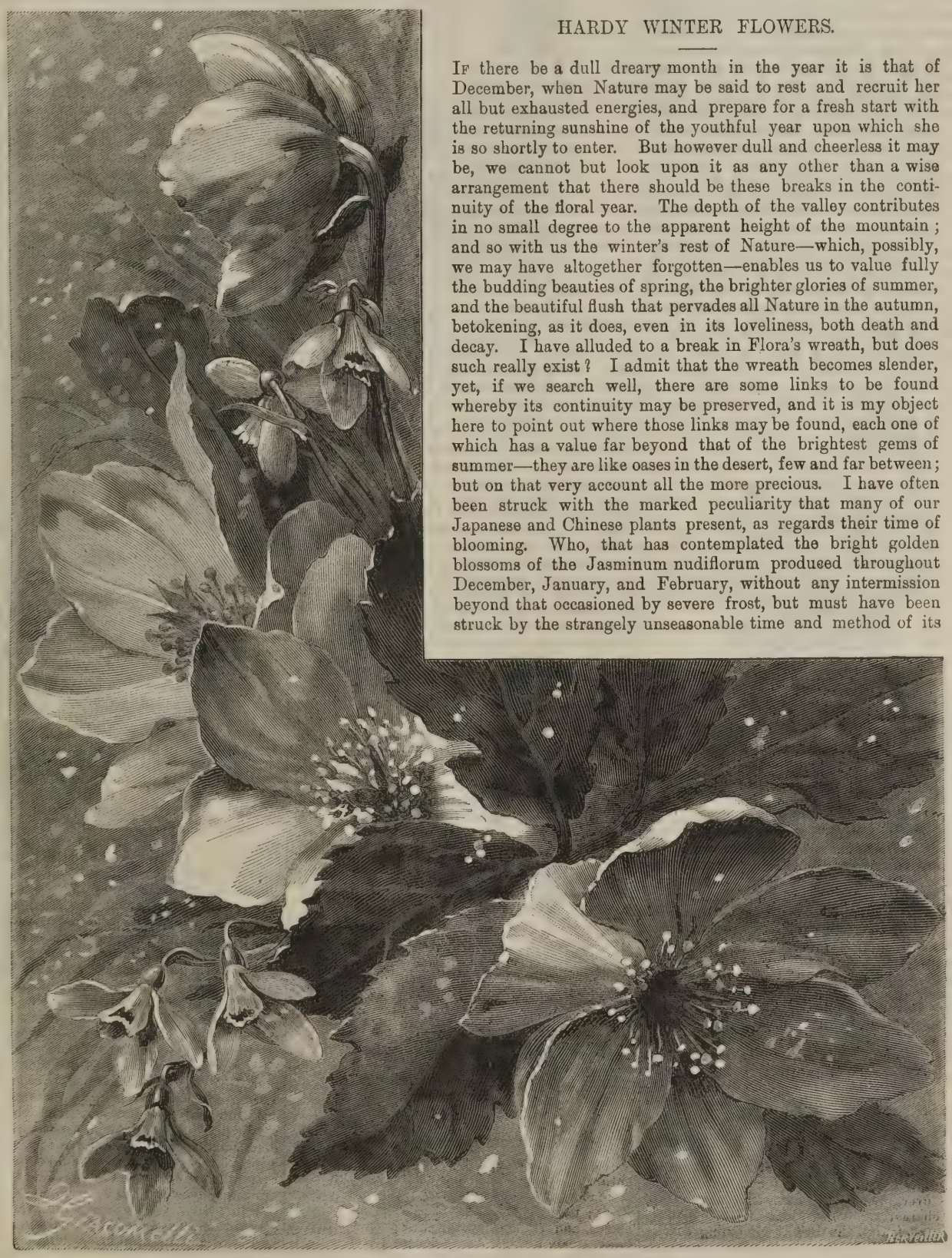

HARDY WINTER FLOWERS—CHRISTMAS ROSES AND SNOWDROPS.

HARDY WINTER FLOWERS.

If there be a dull dreary month in the year it is that of December, when Nature may be said to rest and recruit her all but exhausted energies, and prepare for a fresh start with the returning sunshine of the youthful year upon which she is so shortly to enter. But however dull and cheerless it may be, we cannot but look upon it as any other than a wise arrangement that there should be these breaks in the continuity of the floral year. The depth of the valley contributes in no small degree to the apparent height of the mountain; and so with us the winter's rest of Nature—which, possibly, we may have altogether forgotten—enables us to value fully the budding beauties of spring, the brighter glories of summer, and the beautiful flush that pervades all Nature in the autumn, betokening, as it does, even in its loveliness, both death and decay. I have alluded to a break in Flora's wreath, but does such really exist? I admit that the wreath becomes slender, yet, if we search well, there are some links to be found whereby its continuity may be preserved, and it is my object here to point out where those links may be found, each one of which has a value far beyond that of the brightest gems of summer—they are like oases in the desert, few and far between; but on that very account all the more precious. I have often been struck with the marked peculiarity that many of our Japanese and Chinese plants present, as regards their time of blooming. Who, that has contemplated the bright golden blossoms of the Jasminum nudiflorum produced throughout December, January, and February, without any intermission beyond that occasioned by severe frost, but must have been struck by the strangely unseasonable time and method of its

blooming? Again, the Chimonanthus, in its fragrant, large-flowered and other varieties, if they lack in brightness of colour, certainly acquire ample compensation in the delicious perfume their flowers possess—these may be reckoned as links in the December chain. Again, our more familiar Chrysanthemums are of similar origin, and I am sure none will deny their value, or the important place they claim in the floral wreath. Still further, we have Saxifraga Fortunei, a winter species amongst a host of spring-flowering congeners. Cydonia japonica and Forsythia viridissima are amongst our early spring flowers, and both claim an extreme Eastern origin. Is it that the Chinese have, with their horticultural skill, exercised for centuries, been enabled to influence them to such an extent that, as regards the period of their flowering, the plants have become moulded, as it were, to their whim and fancy; and that even when imported into this country they retain their foreign peculiarities of blooming intact? These questions have suggested themselves to me, and without attempting a reply, I leave it to your readers to form their own opinion, contenting myself by saying, that to China and Japan we are

Common Christmas Rose.

indebted for some of our very best December flowering plants—plants that appear to belong, florally speaking, to the darkest and dreariest months of the year—an inherited peculiarity for which, come how it may, we have reason to be thankful.

From Southern Europe, we have in the Arbutus and Laurustinus a brace of plants, whose value for winter-blooming it would be difficult to overrate, the more so as, associated with the beauty of the blossoms, there is, in brilliant rivalry, the beauty of the fruit; in the one case, we have pendent crimson globes, deep coloured, bright crimson or yellow, according to their degrees of ripeness, hanging beneath the lovely wax-like blossoms, which seem to unite, associated with the bright green leaves, in one tree a mass of beauty; in the other, we have not unfrequently, along with the ample expanse of rosy-white blossoms, the deep metallic blue fruit of the previous season. This is especially marked in the more rigid form of the Laurustinus.

We have also one of the most graceful plants in Garrya elliptica, whose pendent spikes of bloom, simple as they may be, constitute an element of decoration that has few equals out-of-doors in the month of December. This is a contribution from the New World, and one that is doubly welcome, not only for its flowers, but for its evergreen and, comparatively speaking, hardy character.

Amongst fruits, the bright glistening scarlet berries of the Holly, and the pearl-drops which bedeck the Mistletoe, are so familiar, and so happy in their associations, that their mere mention will suffice; nor must we omit the Pyracantha, whose gorgeous and massive clusters of Orange-coloured berries, if protected from the attacks of birds, will retain their beauty far into the New Year. Our old friend, the Aucuba, with which many are familiar under the title of the Variegated Laurel, after the introduction of the male variety, promised to be one of our most prolific and important berry-bearing plants; but though years have elapsed since then, it is rare to see a plant out-of-doors whose berries have been successfully fertilised.

Dwarfer in stature, and less general in cultivation, are the Pernettyas; in P. mucronata, when planted in a sheltered and sun-exposed

Purple Christmas Rose.

position on the rockery, the deep crimson berries are freely produced, and contrast beautifully with the dark green foliage; in P. candida, a more recent introduction, and quite dwarf in habit, we have charming pearly-white fruit, suffused with a rosy tint, in happy association with which might be named the North American Gaultheria procumbens, whose highly-tinted leaves all but rival in colour the scarlet berries which peep from their clustered masses.

If there is one flower more than another to which the title of "December's glory" might rightly be applied it is the Christmas Rose—the Helleborus niger—and most especially is it applicable to that form well named grandiflorus, and sometimes called the Scotch variety. The flowers are produced in twos or threes on stout, erect stems fully 8 in. long; they are 4 in. across at least, and, rising well above the soil, in addition to the natural protection afforded by the autumnal leaves lying on the surface of the ground, the broad expanded cups of lovely whiteness remain unsullied by even a speck of the closely adjacent soil. I ought to mention that the flowers do not all expand at one time, but follow each other in rotation. The foot-stalk is of a lovely marbled-pink colour, which colour, by the way, expands in gradually softening tints over the entire upper portion of the sepals, giving to the flower, as viewed externally, a charmingly delicate roseate hue that is never met with in the old species. Though I have written thus

Winter Heliotrope (Tussilago fragrans).

enthusiastically about this variety, I do not for one moment wish to disparage the old species itself; though blooming a little later, it still comes, and comes naturally, at a time when it has scarcely a rival. It is one of the few legitimate December-flowering plants that is able to stand all sorts of weather. Helleborus atrorubens and purpurascens, in mild seasons or in sheltered localities, may be sometimes reckoned as December flowers, but their claim to this title, like those of others I shall have now to name, hinges much upon the very uncertain conditions of season and weather.

On the one hand, a mild protracted autumn extends the blooming period of some plants even to Christmas, and the very same conditions excite another set into premature activity; while a month or six weeks of frost and snow, which we in the north, at least, sometimes experience, suspends active life altogether, and when this occurs, you may rely upon it that the first comers of the new year will have much the advantage over the latest-blooming varieties of that which has passed away. Thus our December flowers naturally group themselves accordingly—as mementoes of the past on the one hand, and as hopeful harbingers of the future on the other.

Amongst the former we have the tall Aster grandiflorus and the dwarf Asters Reevsi and versicolor; latest of all, the Michaelmas Daisies, still gay after their respective fashions. The ever-flowering Vittadenia trilobata—lovely with its simple Daisy-like flowers—the Rock Speedwell (Veronica rupestris), whose dense dwarf tufts are rarely seen undecorated by a few spikes of its deep amethyst-blue flowers. The summer-blooming Gentiana acaulis, rich in its cobalt tint, under favourable conditions, not unfrequently bids an adieu to the parting year, and makes, so to speak, an acquaintance with his vernal relation G. verna, whose flowers, if smaller, are more intensely blue. Somewhat similarly related are the Cyclamens, the late-blooming C. europæum having scarcely cast its flowers ere it is succeeded by the small bright crimson blooms of C. coum; more appropriate

Winter Aconite (Eranthis hyemalis).

and lovely plants for a sunny nook at the foot of a rockery—their pretty mottled leaves rising in over-lapping masses above the surface of the Grass—cannot, it will readily be admitted, be found.

The Japanese Honeysuckle (Lonicera japonica), when allowed to ramble unrestrainedly, not unfrequently yields a few sweet-scented blooms even thus late in the season, sufficient to render it worthy of mention as one of our December flowers. Too often under the restricted conditions of wall culture, where we generally meet with this plant, its autumnal display is sacrificed to neatness and tidiness as regards the appearance of the conservative wall. Under the same conditions we sometimes meet with Clematis cirrhosa, its blooms suffering from a similarly restrictive policy. Where free development is allowed, such as is possible on a sunny slope formed of old roots, among which these creepers will find ample support, not only does their true autumn-blooming character become perfected, but the possibility of an addendum of winter flowers is also secured.

Schizostylis coccinea, an Iridaceous plant of great beauty, from the Cape, when well managed produces its flowers throughout the whole month. They are borne on slender stems about 12 in. high, have the aspect of a Gladiolus, and are bright crimson in colour; the plant is perfectly hardy. Why, then, do we so often find it represented by a large patch of grassy foliage with possibly only a solitary flower-spike. The reason is, that amid the myriads of offsets it produces, none of them come to maturity. Were the tuft divided in spring, and the strongest planted separately on the sunny south wall border of a garden, 6 in. apart in the row, in light soil, and a little care and attention given the months of November and December would find each individual tuft producing two or three spikes of lovely flowers, that remind one of the peculiar tint of crimson we have in the Linum grandiflorum, alike valuable for cutting as for

the general decoration of the garden. When thus planted, in the event of a severe frost setting in, a movable frame might readily be placed over them for protection.

Mentioning the frame reminds me that there is a great similarity between the culture I have recommended for this plant and that at present adopted for winter-blooming Violets, whose right to rank amongst the sweetest of our December flowers no one will deny.

Amongst the Tritomas we have some of the less highly-coloured varieties that are strongly endowed with winter-blooming proclivities.

The Primulas, both double and single, in the Primrose, as well as in the Polyanthus form, give us a few blooms in November and December. Nor is it unusual to see the spring time anticipated, as it were, by scattered flowers here and there on our Alpine Auriculas. This is more especially the case with seedlings which have been planted out in early spring. These autumn flowers appear to act as a sort of safety-valve, whereby the plants are enabled to throw off their superabundant vigour. The winter-flowering Violas or Pansies were, in olden time, few and far between, but they are now more numerous. The white, crimson, and intermediate forms of the double Daisy, including as well those with golden mottled leaves, often anticipate their spring glory by a few mid-winter blooms sufficient to claim recognition.

In favoured localities, amongst the advance guards of spring, we find the Winter Aconite (Eranthus hyemalis) peering out from its sheltered home beneath the leaves to give welcome to the Christmas morn. So also the Bulbocodium vernum, whose similarity of bloom, both in style and colour, at once attests its close relationship to the Autumn Crocuses, or Meadow Saffrons, as they are called. The Gladwin (Iris fœtidissima) long known to lovers of hardy flowers as a bright-fruited native plant, has lately become popular in Covent Garden, where piles of its curious fruit may now be seen.

Amongst trees I may mention the Japanese Witch Hazel (Corylopsis spicata), whose large-flowered pendent catkins are freely produced fully two months in advance of our common Hazel. I had almost forgotten my special favourite the fragrant Coltsfoot (Tussilago fragrans), or, as it is sometimes called, the Winter Heliotrope, a very happy name, originating in its delicious perfume, which appears to combine those of the Heliotrope and Hawthorn, produced by the most modest and unpretentious of grey flowers. In growth it is a vagabond, but is well worthy of a good corner in some plantation, where it may gratify its rambling propensities unrestrained, as, under those conditions, it produces its flowers in greatest abundance.

I have purposely omitted here many plants which, in the extreme south of England and Ireland, may be found in bloom in December; we must look upon these localities as exceptionally favoured. I am fully aware that there are places where material might be found to treble the list I have given; but for one person that rejoices in such happy conditions, there are ten who have to battle with Nature under more disadvantageous circumstances, and to such I must be considered as addressing myself. I trust I may be found to have fairly established the claim for dull December with which I started—that even it can boast of its Christmas Rose of greatest beauty, and can, and does, contribute at least a few gems well worthy of a place in Flora's diadem. J. C. N.

Cheap Basket for Ferns, &c.—Few baskets can be made more quickly or cheaply than those formed of virgin cork. Suitable pieces, cut in equal lengths, can easily be made into a round basket by means of strong wire, and a bottom may be fixed in a like manner. Club Mosses and Ficus minima grow readily on cork, and an elegant green basket can thus be obtained, which, if filled with Orchids, Ferns, or similar plants when suspended from the roof, has a fine appearance.—S.

Peat as an Antiseptic.—It seems to me to be a great pity that so many bulbs should rot every year when such a catastrophe may be so easily averted by using peat with the compost. The antiseptic qualities of peat are of course well known, and a handful mixed with a 5-in. potful of the compost in which the bulbs are planted would save many a fine bulb, which is otherwise lost. I pursue this plan myself, and in the case of Roman Hyacinths, which are so very subject to decay, especially I consider peat to be a most valuable adjunct to the compost.—Girofle.

TOWN GARDENING.

Cineraria maritima and candidissima.

This plant is very useful for the flower garden. It seems to do better in town air than any other white or silver-leaved plant, though the elegant Centaurea will do fairly, with care. It should be treated as an annual—*i.e.*, sown early in spring, in boxes of light soil, pricked off, and planted out at the end of May. There is no necessity to pot these plants, and a very gentle heat just to germinate the seed, and while the plants are young, is sufficient. It is a strong

Cineraria maritima in flower.

rooting plant, and likes rather a loamy soil, more so than the Golden Feather, or Pyrethrum, which requires similar treatment. Old plants are much whiter in the hue of the foliage than young ones, but as the winter always kills these, the only way to keep them is to pot carefully, and give the protection of a cool greenhouse, or a well-protected cold frame. But it is hardly possible to find room for many plants in such places; however, a few may be tried, as a fine old plant makes the best possible centre for a bed of scarlet geraniums. The variety candidissima is much more effective than the type.

Dahlias.

The Dahlia is so easily grown, and blooms so well even in densely-populated towns, that if there is room a few plants should always be grown. They look especially well at the back of a mixed border of flowers, but they do best in open beds.

Culture.—This is very simple. Procure as many young plants as you require about the end of May; good named varieties (spring-struck cuttings) can be purchased for 3s. or 4s. per dozen. They are usually in small 3-in. pots, and are quite as good as older plants for ordinary purposes. Dig the ground for them deeply and well, working a quantity of manure especially at the bottom, and when settled set the plants in their places, pressing the soil firmly round them, and tie each one to a small stake, as they are easily broken by wind. They should have a sunny position, and beyond replacing the small stake by one 3 ft. or 4 ft. long when the plants get large enough to need it, and giving a good soaking of water and liquid manure occasionally, in dry weather, they will need but little attention. There is seldom any need to pinch out the tops, as most of the varieties will branch out quite naturally if in an open and airy situation. They should be frequently syringed overhead, or have a good shower from a watering-pot to keep the foliage clean. Always prefer the syringe if you have one, as the water is driven more forcibly against the surface of the plant, and this brings dirt and dust off more effectually. When the foliage has become dirty we find it a good plan to give the plants a gentle shower over in the evening when the sun has set, just to damp and loosen the dirt, and then come round again in a quarter or half an hour and give a thorough syringing to wash it off. The plants will produce numbers of beautiful flowers in August and September, and we have even cut good blossoms in November, not far from London Bridge.

Lifting and Storing.—As soon as the tops are cut down by frost, and the roots well ripened, but before the ground gets frozen, cut off the stems down to the ground; take up the roots carefully, so as not to injure the embyro roots round the collar of the plants, dry them gently for a few days, and then pack them in sand, light dry soil, or cocoa-nut fibre, in pots or boxes, and stow away in a cellar or other place where they will be safe from frost. They will hardly need any water through the winter, but must not get so dry as to shrivel.

Propagating.—In spring the old roots may be planted, as soon as all danger of frost is over, as they are, in which case they will make fine bushes, or each tuber may be taken off with an eye or two, potted, and started in a gentle heat. But the best way to increase the stock, if required to do so, is to remove the roots, just as they are in the pots or boxes, to a warm greenhouse in February or March, give a little water as they begin to grow, and as soon as the young shoots that spring up round the stem get 3 in. long take them off with a sharp knife, put each singly into 3-in. or 3½-in. pots, or four or five round a large one in very light and sandy soil, and place them in a gentle hot-bed of 65° or 70°, keeping close. Here they will readily strike root, when they may be hardened off and planted out as before directed. Where extra fine plants are required, shift them as soon as well rooted in the small pots to others 5 in. or 6 in. across, place in a cold frame early in May, and plant out from these.

Helichrysums (Everlasting Flowers).

These are so easily grown, so pretty, and the flowers when dried last so long, that we strongly recommend them. The double dwarf kinds, and especially a variety called "monstrosum," are by far the best; separate colours can be had if desired. Sow the seed in the first week in April, in equal parts of loam, leaf-mould, and sand, or any light, rich soil, but the compost of course gives the best plants. Cover the pans or boxes with glass, and place in a frame, with gentle heat, if possible, or a window or cold frame, or even a box out of doors covered with glass will do. When large enough prick out into boxes, or into nursery beds out of doors, and when good sturdy plants, three or four inches high, set out in their places. They may be planted either singly in

Everlasting Flower (Helichrysum bracteatum).

mixed borders, or will make a fine bed by themselves. We, however, generally put three in a group, triangularly, the plants about 6 in. or 8 in. apart. This makes a pretty group. Give them rich soil and plenty of water if you want fine flowers, yet few things will stand so much drought uninjured. For drying, cut the flowers when just opened, and hang up by the stalks, head downwards, in a sunny window; when thoroughly dry, store away for winter use, or make up into bouquets at once. A few dried Grasses, such as Stipa pennata (Feather Grass), Panicum virgatum and fimbriatum, Agrostis nebulosa, Briza gracilis, or others, mixed with them, are a great improvement, and if you have not sufficient variety of brilliancy of colour, use Judson's dyes to deepen or contrast them. It is almost needless to say that these dried grasses and flowers must not be placed in water; on the contrary, they must be kept as dry as possible.

Lobelias.

These are so useful for edgings, baskets, window-boxes, and almost numberless purposes of display, that they should be grown by everyone. Great difficulty will be experienced in

keeping these through a town winter, and the easiest and best way is to grow them fresh from seed each year.

Sowing.—Sow the seeds either in autumn or in January or February, as a great mistake is made by some people in sowing so late that they have to be forced rapidly on in heat; while, if they have plenty of time to grow in, they will do far better under cold treatment. Sow in pans or boxes, using a light soil of loam, leaf mould, and sand, in nearly equal parts—the top ¼ in. finely sifted. The seed will germinate in any ordinary greenhouse if a sheet of glass is placed over the box, or even a sitting-room window will do. If in a greenhouse the pan should be placed on a sunny shelf, and if a heat of about 60° can be afforded all the better; but the heat must not be continued too long.

Potting.—As soon as they are large enough to handle, or ½ in. to ¾ in. in height, prick off into boxes 1 in. or 1½ in. apart. Keep close, and a little heat would be advisable at this stage, to induce them to root well; then, when strong, either pot singly in small 60-sized pots, or take out every other one and transplant into other boxes or cold frames. Where a large quantity are needed it is advisable to prepare a frame by putting 2 in. or 3 in. of nice light rich soil in the bottom, with a little heating material underneath, just to give them a start, and prick out 2 in. or 3 in. apart into this from the seed-pan. From such beds or boxes they may be planted out where they are to flower, taking them up with good balls of earth, and planting about 6 in. apart in the row. This saves the bother of potting, which is not by any means necessary.

Raising in Windows.—For those who have no convenience of frames or greenhouse, sow the seed, covering with a sheet of glass, as above directed, and keep in the window of a kitchen or sitting-room, and when large enough prick out into boxes covered with glass out-of-doors. These are very useful in many ways. We find the Swiss milk cases, to be had at any oilman's or grocer's, a very useful size. They are about 20 in. by 14 in., so that two sheets of glass, 14 in. by 20 in., costing about 4d., will cover them nicely. Place them in a warm, sheltered, and sunny place, put 3 in. of broken bricks or ballast, or even ashes, at the bottom, on this an inch or two of spent hops, and fill up to 3 in. or 4 in. of the top with nice fine rich soil. Into this you can prick out Lobelias, Petunias, Verbenas, and many other things quite safely about the middle of April. Keep the glass on closely at first, and as the weather gets warmer, and your plants stronger, expose them more and more till the glass is dispensed with altogether. You have thus a month or six weeks for your things to grow in before planting out, and, being so close to the glass, they will be fine and strong. One of these boxes will contain enough plants to fill a moderate-sized flower-bed.

Marvel of Peru (Mirabilis jalapa).

This makes a well-shaped bush, and no situation is too hot and dry for it to grow in. Sow the seed in March in heat, or out of doors in May, and the plants will bloom the same summer. The old bulbs must be taken up when the stems die down at the approach of winter, and stored in a cellar or other dry place, safe from frost. Old plants that flowered early will frequently be found to have seedlings sprung up around them in the autumn, and if these are carefully taken up and stored away in a little earth they will make good plants for next year. Although they stand drought so well, yet, like all other plants, they will succeed better if planted in rich soil and kept fairly moist.

Mimulus (Monkey Flowers).

These should be treated precisely the same as Lobelias; give them plenty of water, and as little heat as possible. There are many named kinds now in commerce, but a packet of seed of a good strain will produce as good flowers as anyone can wish to see; these plants come very true to colour and shape, &c., from seed. They may be planted out about 6 in. apart in any open border in May. Sandy loam and a somewhat shaded situation suits them best, though they will do better in the full blaze of the sun than in a very shady or gloomy place. The soil need not be rich, and it is astonishing how little soil they will grow in, and, in fact, they flower far better when cramped at the root. About the best place for them is on rockwork, round a fountain in the sun, where they will have plenty of water, sun, and air, and but little earth to grow in.

Œnotheras (Evening Primroses).

There are several varieties of these, all of which are more or less adapted for town culture. The Œnothera grandiflora, or Lamarckiana, is, however, much the hardiest and most free-flowering. It is commonly known as the Evening Primrose. These plants have bright yellow flowers, which open in the evening, and it is very interesting to watch them expand, which they do quite suddenly, unfolding their petals in much the same way, and in about the same time, as one would open an umbrella. They grow from 3 ft. to 4 ft. in height, and seem to flourish equally well in a bed of rubbish, or on a dry rockery, as in deep rich loam. They are propagated by seed, which may be sown at almost any time—it is sure to come up. If sown early in spring, in the open border, it will bloom late in the autumn, but the plants that make the best display are seedlings of the last year, which will stand the winter out of doors, and come into bloom in July. They prefer a sunny situation.

Phlox Drummondi.

Petunias.

We think it a great pity that these showy plants are not more generally cultivated. One often meets with people, and people who are fond of their gardens too, who do not know what Petunias are. They would not think the garden complete without a bed of Verbenas, and though universally admired, when they are seen, no one seems to think of growing Petunias. Yet the flowers are of great size, a single bloom usually being larger than a whole truss of Verbenas, the colours are unequalled, the markings are found of almost unlimited variety, and the plants themselves are extremely easy to grow, and will often succeed well in soils totally unfit for Verbenas. A bed of mixed colours is extremely effective, and in this case seedlings may be used, and for general purposes these are preferable to plants from cuttings, as they are more easily grown and much more vigorous.

From Cuttings.—If separate colours must be had cuttings must be taken. Strike them early, in July or August, and label them carefully, as the effect of a bed is often lost through getting the varieties mixed up. They will strike easily in a cold frame, kept close. When rooted, pot off singly in 3½-in. pots. These should be kept through the winter in a light airy greenhouse, if possible, or in a sunny window of a warm room. Keep them slowly growing, if possible, and pinch out the tops, so as to have a nice lot of young shoots about 3 in. long by March, or whenever you can strike them. When your hot-bed is about 70°, and nice and sweet, take off the cuttings, trim them, and insert five or six round the sides of a 3 in. or 3½-in. pot, using loam, leaf-mould, and sand in equal parts; give them a sprinkle, then stand aside till dry, and place in the frame; give only a little air till struck, then increase the quantity, and when a little hardened pot off singly in 3-in. pots, using light loam with a little leaf-mould and sand. Keep close a few days, then harden off gradually; plant out the last week in May. Soil—almost anything will do, it need not be very rich, as the plants are robust growers generally. They do best in a light soil, and when well established need but little water at the root; though in towns it is advisable to give them a fair amount of manure, and also a good showering overhead morning and evening, to keep the foliage clean, and do not let them get very dry at the root. The plants may be either trained upright on sticks, pinched in so as to form a compact bush, or pegged down like Verbenas.

From Seed.—For mixed beds seedlings are best; get a packet of seed of a good strain, and sow either in September without heat, and prick off into store pots or boxes for the winter, or sow in a gentle heat in February or March, say 60° or 65°, or simply in the greenhouse; or a sunny window will do after the end of March, covering the pot or pan with a sheet of glass till the seedlings are up. Early sown seed makes the best plants. The best soil for seed-sowing is leaf-mould and sand, with the surface sifted fine, and a little loam in the rougher stuff below. As soon as it is possible, prick off the seedlings singly in boxes, about 2 in. apart, and they would be the better of a gentle heat at this stage to induce them to root freely, and if at all late to make growth. In any case the boxes must be kept close for a few days, then admit air, and when the plants touch each other pot off singly in 3-in. pots, harden off, and plant out as before directed. Or if they are pricked out or transplanted to 3 in. apart in boxes instead of 2 in. and have 2½ in., or 3 in. of soil, the potting may be dispensed with, and the plants taken up with good balls, and put direct out into the beds.

Single varieties of Petunias should always be used for beds, as, though the double ones are very fine, the rain spoils the blooms, so that they should be kept for pots indoors.

Phlox Drummondi.

This is another extremely valuable town flower. Its colours surpass even the Verbena in brilliancy, and the trusses are much larger. The new grandiflora varieties far surpass the older ones in the size of both plant and flower; but they are somewhat taller and more straggling in growth, and we fancy they do not bloom quite so freely. Sow the seed in light rich soil in gentle heat in March; cold frames early in April, or at the end of April out-of-doors. The plants do as well or better, becoming more robust and dwarf when sown out-of-doors than by the other method; but as they are rather slow in making a start, the season is rather far advanced before they come into bloom. So that, where it is possible to do so, it is better to sow under glass, in a greenhouse, frame, or warm window, as for other half hardy things; prick off singly in boxes, 2 in. apart, when ready, and plant out 8 in. or 10 in. apart in good rich soil. The plants may, if early enough, be potted singly when pretty well advanced, and when well rooted out, be planted from these into the beds and borders; in this way the roots do not get injured as they sometimes do if left too long in boxes. If good fresh seed can be had, and the plants are grown with plenty of room, air, and light, they will be so strong that they will shoot out laterally at the base, and may be pegged down like Verbenas; but if at all weak they will leave only a single stem, and had better be planted rather close, and tied up to neat stakes. Like all other annuals, these delight in a good deep rich soil in which to grow, and it should be light rather than heavy in texture. They need plenty of sun to do well.—B. C. R.

To Get Rid of Slugs.—Take a bull's-eye lantern and a small phial of liquid ammonia

(hartshorn), go round your borders after dark, and with a feather put a drop of the ammonia on every slug you see. This is a cleanly and effective method of killing the pests.—A. J. S.

MY COTTAGE GARDEN.

In an out-of-the-way corner of Dorset will be found the above. The cottage used to be much admired, chiefly, I think, on account of its being literally covered with an ancient Vine, at all events on three sides, and it might have easily been trained all round; but it was found that on the north side Grapes would not ripen, therefore the Vine was cut; but to make matters harmonious, on the eastern corner I planted a climbing Rose, which now, after ten or twelve years, lies on the roof, and in June a wheelbarrowful of dark crimson Roses may easily be had, and at such time the scent of them may be well said to load the air. What this Rose, is called I do not know, but it is a common kind in the southern counties; it is scarcely ever pruned or dressed except with a reaping hook, but is little the worse for its age, and the secret of its immense size is that the roots are exactly over the drain from the cottage pump. In front of the house, across the public road, is an orchard, a lovely sight in spring, a sea of scarlet and white blossoms, and in autumn the glories of Pomona in yellow and red hang in ropes when the season is favourable. As if it were an adjunct, three or four old Apple trees stand in the cottage garden, venerable sires, and yet annually young, as for twenty-five years they have never failed with a crop, and yet they are covered with horrors that would drive a modern horticulturist mad. They are grey with Lichens and green with Moss, and masses of American blight all over them. We are told to use a stiff brush and Gishurst Compound. You might as well try to Gishurst Compound the Monument. I tried once to paraffinise one of them, but found it labour in vain.

These trees never send forth any apparent shoots; no young wood is ever seen; yet from the horny-knotted extremities every season come the delicate tresses of flowers and the surrounding leaves. There is no better Apple anywhere; they are all the same kind, and called the Pitcher, good either for the table or cooking. How old are they? Well, it is impossible to say; but, hazarding a guess, they look as old as I am—sixty-eight years. Beneath these trees are spring flowers, double Primroses, Violets, the latter a weed in the garden (I tried to eradicate them, but gave it up in despair, so now they have their own way), Daffodils of several kinds, two fine groups of the White Lily, and a great bush of the China Rose as old as the Apple trees. This shows what will grow under trees, for the same arrangement goes on from year to year with success, and all attempts to introduce change have signally failed. All they require is occasional digging up of the tubers and replanting, and in autumn a liberal cover of old stable dung, which is forked in when the frost is over. The reader will find the moral of this article stated at the end of it; all I now wish to observe is, I wish I had known the drift of it twenty-five years ago.

About 100 yards to the north is a small, swift-flowing river, sparkling and clear in summer where the swallows skim and gambol all day over the water and the meadows beyond, but at times of flood frightful to look at; the bridge over it shakes with the force of the water. My cottage stands on the highest bank, therefore I am not in danger of being flooded, but the reader will perceive that the situation is low and does not lack moisture. From the river above came a small stream of water which went half round the orchard at the side of the road till a few years ago, when the sanitary authorities enclosed it in pipes; so that for anything the wayfarer knows, it does not exist. In my opinion this step was useless, and was the cause of the death of my Vine, whose roots penetrated under the narrow road into it. So we will return to the Vine, which I will endeavour to describe. This was planted just inside the garden wall and nearest the streamlet across the road; it was arranged very judiciously in two branches, one nailed horizontally close to the ground, so that the rods went up a large extent of wall without windows, and to this I applied the rod system, viz., removing old rods occasionally to allow a new one to spring from the base. The other branch was led over the wall and made a deep, heavy knee, and then was led in various branches over the door and round the windows till the front was one mass of foliage in summer.

In this part the spur system was followed, *i. e.*, a Vine forms as it gets old large knots, from which spring vast numbers of buds in spring. From the great trouble it occasioned it was allowed to show bloom before disbudding all but once. With the exception of the trouble, I preferred this latter system, as the Grapes were much finer, though the aspect was to the west. Here they ripened in former years as well as under glass, and as rich in colour, a brown yellow, the true colour of the Chasselas. After the streamlet was confined the entire Vine lost its beauty; blight seized upon it; so that very sorrowfully I had the whole front part removed, though part of the garden side still remains. At that time I found it to be an independent Vine, for at a certain bend near the ground it had rooted itself deeply into the border.

Dorset. W. T.

Marvel of Peru (Mirabilis jalapa).

Large Flowered Christmas Rose (Helleborus altifolius).—This, in addition to being larger and finer than the ordinary Christmas Rose, is certainly an earlier bloomer, and for those who value cut flowers, or flowering-plants in pots, during winter, and who have but a limited amount of heated glass structures, I do not know of a more valuable plant than this is; it only needs the protection of a glass covering to keep its blossoms from being dashed by heavy rains, and it will be in full flower during the dullest and darkest days of the year. Last season I procured half-a-dozen clumps of this variety, and planted them on a well-prepared border, in two rows, in such a way that an ordinary two-light frame would cover them. They have already produced blooms in abundance; there are large quantities of buds yet to open for succession. They are admirably adapted for furnishing vases, as, if cut in the bud state, they readily expand in water, and last as long as any flower with which I am acquainted. I would recommend any one beginning to grow this useful plant to give the soil a good preparation, choosing an open sunny aspect for it, where the crowns can be well ripened, and every season the plants will produce great quantities of flower. If well trenched and manured they would not require re-planting for at least seven years; but a top-dressing of well-decayed manure, and a little liquid manure, might be given during the growing season when the plants are making their foliage, as upon the size and substance of the leaves will depend the size of the flowers. If required for pot culture, care should be taken to protect the foliage from injury; when the blooming season is over, they should be protected by a frame until genial weather permits them to be plunged into the open air. Hardy subjects like the Christmas Rose frequently suffer when removed from under glass, for although hardy enough to withstand our severest winters when continuously exposed, their growth, made under more exciting circumstances, will not withstand any sudden variations of temperature. For this reason it is advisable to keep them in as cool a position as possible when in flower, so that the growth of young foliage may not be excited before its natural season.—J. G.

White Flowers for Christmas.—The inevitable demand for flowers at our great winter festival has largely been instrumental in promoting an increase in kinds of plants suitable for the production of winter flowers, and in some establishments the chief energies of the winter seem devoted to the production of a huge lot of flowers for decoration at that season. One of the easiest, because hardiest, of plants to produce white flowers is the Chrysanthemum, and the latest and best kind is Princess Teck, a large, French, white, incurved kind. The flowers of this Chrysanthemum are in great demand for church decoration, as they can be produced far more cheaply than Camellias or Gardenias. These latter are the choicest of white flowers, but owing to the expense incidental to their production in mid-winter are necessarily costly. White Cyclamen blooms may be had in great

abundance, large plants of these having from thirty to fifty blooms expanded at once. The Cyclamen is grown for the London market literally by hundreds of thousands, and now that its culture is better understood, few plants are perhaps more easily grown. One of the best of white flowers for bouquets is the double white Chinese Primrose. In some gardens these are kept by hundreds for the supply of cut flowers alone. The Tuberose is a delightful winter flower, delicately perfumed, and the individual flowers are fixed on wires in the making of bouquets. Then there is the beautiful Eucharis amazonica, the flowers of which are large, cup-shaped, and of the purest white. Under careful culture this can be induced to bloom almost at any season. Then there are white Roses and Christmas Roses, white Narcissi, Roman Hyacinths, and Tulips—in fact, plants that will produce white flowers at Christmas are plentiful enough.—A. D.

Hose-in-Hose Polyanthuses.—This section of hardy, spring-flowering plants would seem to be amongst the earliest of all to flower, as several kinds are now more or less in bloom. Golden Gem, a remarkably effective yellow kind, is a very robust grower, and will, without doubt, prove to be a fine spring bedding plant. The flowers are large, and, like a true Hose-in-Hose, are produced on the stems in couples of rows of petals separated by a short interval. This is a pin-eyed variety, but this naturally detracts nothing from its decorative qualities. Golden Queen is the duplicate of the former, except that the flowers are thrum-eyed and a shade richer in colour. Cloth of Gold is a deeper hue still, but this is also pin-eyed. The finest white Hose-in-Hose is Avalanche, the flowers of which are large, pure in colour, and borne in large, compact trusses. The old white Hose-in-Hose has large flowers of a fresh white tint, and is a most valuable hardy spring flower Perhaps one of the most effective kinds for massing is the crimson Hose-in-Hose, as dark rich hues are in great request in the early spring garden. This is also a very robust grower, and stands the summer drought well. The fancy section of Duplex Polyanthuses gives a great variety of novel and curiously-marked flowers, all of which are exceedingly attractive whether used in beds or planted singly in borders. It will probably soon be possible to select at least a dozen good distinct bedding kinds of these early Hose-in-Hose varieties.—B.

Lilium longiflorum.—Lilies are becoming so popular, and so many are wishing to take up their culture, that it may not be amiss to direct attention to this fine species. It is one of the most manageable and least capricious members of this fine family, and I therefore counsel all embarking in Lily culture to include it in their list. Its large white, trumpet-shaped blooms are very handsome, and as the plant itself is a moderate grower, that is to say, although not deficient in vigour, the flower-stalks do not run up so high, as is the case with many kinds, the flowers are not so liable to become bruised in stormy weather. This Lily likes a good sound loam to grow in, and, like the rest of the family, prefers a partially shaded, somewhat cool situation. There are many varieties of it, some of which are as yet comparatively rare; but the typical form is very cheap, good bulbs costing only about 4d. each, so that it lies in the power of all to grow this beautiful species.—J. C., *Byfleet.*

FRUIT.

PRUNING VINES.

Amateurs seldom attempt forcing Vines early, and, as a rule, it is better that they should not do so, for, unless a certain amount of practical experience is brought to bear on the matter, failure would be likely to be the result. Even in the case of thoroughly established, strong Vines in fruitful condition, Grape-growing that entails the necessity of starting the Vines, even at the close of the year, is a very different operation, requiring a great deal more skill and watchful attention than hastening the natural spring growth by the application of fire-heat towards the end of February or during March. Nevertheless, now that the leaves will have all, or nearly all, fallen, and where the fruit has all been cut, it is better to prune at once. To make sure in a way that gives the wood sufficient time to heal up the cells severed in pruning, two months should elapse before the Vines are either excited by fire-heat, or come on of their own accord. Another advantage gained by early pruning is, that plants wintered in the houses under the Vines receive so much more light by the removal of the shoots. In the matter of pruning, two distinct methods are practised; one is known as the long-rod system, and the other the spur.

The Long-rod System consists in taking up one or two young canes from near the base of the Vine each year, which, at the time of pruning, are shortened back to from two-thirds to one-third of their entire length, the crop being borne on the young rod or rods from the bottom up to where they are cut back, and on the old cane that has produced them above where they were severed, except in cases in which it was cut away as soon as the fruit was removed; in that case the young one is generally left nearly the entire length of the rafter; but this method is now comparatively little practised, and never had very much to recommend it, although by it larger bunches are often produced than by the other system. Amateurs are more likely to succeed under

The Spur System, though the Vines in time, owing to the length which the spurs assume in the course of years, have a less sightly appearance than in the case of the long-rod system. This is a fault which can, however, be avoided by yearly cutting from each rod a few of the spurs completely; young shoots will spring from the base where these have been removed, and will take their place, though it often happens that such shoots do not show fruit freely the year after they have been formed. It is, however, always better to prune with a view to a crop than for mere appearance sake, and I should not recommend any bearing wood ever being shortened closer than to where a good plump eye can be retained, even should this be the second above the base of where the current season's shoot had sprung, and in no case to sever the shoot too near the eye that is retained. The advantage of pruning in this fashion is, that the second eye may produce a good stout bunch, wherein the usually weaker bud at the base of the shoot may show no bunch, or one that is a sort of half bunch, half tendril; and if the lower eye shows fruit satisfactorily, then the shoot from the second eye can be removed altogether.

Where Vines are strong enough to bear freely, there is little to be feared in their showing a sufficient crop, provided the wood has been fully ripened, unless where over-cropping has been practised, or they have been so grossly neglected as to allow them to become a prey to red spider or thrips early in the season, long before the leaves had fulfilled their allotted functions.

There is one other point to which I would direct the attention of amateurs in Vine-pruning, and that is not to retain too many spurs on each rod; it is a common occurrence to see a spur retained at the greatest number of the joints of the rods first made, which is much too close, crowding the roof with small half-developed leaves; whereas, if the spurs be from 1 ft. to 15 in. apart, they are quite near enough.

Winter Dressing.—In the case of Vines that are pruned now with a view to their being started more or less early during the winter, it will be as well to give them their winter dressing at once. Before applying this, it is usual to strip off some of the outer bark, but in this operation I would especially urge amateurs to be cautious, and only take off such as is quite loose and hanging in a dead, stringy condition; the unnatural practice of close scraping, so as to remove the whole of the outer covering almost down to the living inner bark, polishing the rods off smooth like a knotted walking stick, is fatal in its effects, preventing the Vines ever growing and thickening as they ought to do. This scraping process I am aware is often done with the intention of removing the eggs of red spider, thrips, and other noxious insects deposited in the inequalities of the bark, but in this case the cure becomes worse than the disease. After removing just the loose outer portion as above described, dress at once with the usual mixture of clay, sulphur, a little Gishurst and soot, and fresh cow manure, the latter to help the dressing to stick, stirring all well together, and using it about the consistency of thick paint, brushing it in thoroughly to get it into every crevice, especially about the base of the spurs. After they are dressed, the rods may either be tied up in their places under the rafters, or across the house over the front path, if there happens to be one; in this way most light will be admitted to whatever plants occupy the house during the winter. T. B. S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 20.—Sowing Cucumber seeds to produce plants for March; introducing another batch of Keen's Seedling Strawberry plants into a heat of 58°; turning walks where gravel has become discoloured; preparing pit for Madame Falcot Roses; tying down Pelargoniums after potting and stopping them. Plants in flower—Cytisus canariensis and Attleana, Epacris Eclipse, Monochætum ensifolium, Cinerarias, Lily of the Valley, Begonia incarnata, Goldfussia isophylla, Thyrsacanthus rutilans, Roses, Poinsettia, Tom Thumb Pelargonium, Tydæa splendens, Schizostylis, Erica gracilis autumnalis, Salvia splendens, Primulas, Euphorbias, Callas, and several kinds of bulbs.

Dec. 21.—Putting Schizanthus in pots; getting up Rhubarb for forcing; pruning and nailing Cotoneaster; plunging Fig trees in pots in a hotbed of leaves; wheeling manure on to vacant land; making a new Mushroom bed, the fourth this season; pruning trees, and white-washing walls and cleaning woodwork and glass of third Peach-house.

Dec. 22.—Potting Gladiolus in one-third loam, scarcely one-third manure, and rather over one-third peat and sand; also more Mint; putting into force some Lily of the Valley, a few Ghent Azaleas and Deutzias, a batch of Jules Margottin Roses, a few Dielytras, some Cinerarias, and also Azalea vittata punctata—temperature 55° to 60° at night, and from 60° to 65° during the day; tying Fig trees after whitewashing the walls and cleaning the trellis; also Raspberry canes; staking late-sown Mignonette; putting cases over Watercresses to protect them from frost.

Dec. 23.—Sowing seed of Bromham Hall Melon and placing it in bottom-heat; planting some standard kitchen Apples; putting in Vine eyes; pruning Apple trees in orchard; clipping tops off shrubs in pleasure-grounds where too high; cleaning Violets in frames; also herb beds.

Dec. 24.—Sowing fifty pots of Nemophila; potting in Sphagnum Odontoglossum coronarium, which requires to be grown cool and shady; also second batch of Potatoes for forcing; shifting young tree Mignonette into 6-in. pots; dividing Irises and planting them again in border; planting and staking Cherry and Plum trees; getting Endive into heat twice a week, so as to have it well blanched and fresh; re-filling baskets for conservatory with Nemophila and Silene; putting Alyssum and old Verbenas into Vinery for cuttings; placing all Mignonette from pits on late Vinery shelves, so as to get it in the sun; examining pot Carnations for fly; washing Gardenias.

Glasshouses.

Epacrises.—Although these are strictly greenhouse plants, and will succeed through the winter in a temperature just above freezing, still, where a good stock exists, it will be found useful to have a portion in bloom early, which may easily be accomplished by keeping some amongst such of the greenhouse plants as require the most warmth, say 45° or 46° at night, with something more than this in the daytime. For this purpose those should be selected that made their growth first, and were turned out correspondingly early in the open air, as these plants at once set their flowers as soon as put outside in the summer, and by this are influenced in their time of blooming. The large-flowered, upright-habited varieties are the most useful for blooming early, and they are also the best for general use, especially for providing cut flowers, as every shoot of the preceding season's growth may be cut without injuring the plants; in fact, to keep the erect-growing kinds from getting too tall and thin, it is necessary to shorten the whole of the shoots to within a few inches of where they were cut back to the year previous. It seems strange that there are not more of these most serviceable plants grown than there are, so easy are they to manage, and not subject to get into a bad condition in the way that many of the more tender hard-wooded plants are; added to which their leaves are so stout as to almost defy the attacks of the generality of insects, another important consideration.

Large-flowered and Fancy Pelargoniums.—Those plants of the large-flowered section that were shaken out the latest after being cut back and treated in the usual way, should by this time have made sufficient new roots to permit of their being moved into their

blooming pots, which should be about 8 in. in diameter. All Pelargoniums are better hard-potted, but for this section particularly the soil should be made very solid ; it should also be in a medium condition as to moisture, and little water should be given until the roots have had time to fully establish themselves. There is no description of soft-wooded plant which makes any growth through the winter that from this time to the end of February requires to be kept with the soil so dry as these and the fancy varieties, without which they never can be grown satisfactorily. They should have all the light possible, and be kept at a temperature of about 40° at night, with a little air every mild day, but not exposed to keen winds. The dwarf-growing, free, early-flowering, decorative kinds so largely cultivated by market growers, and which are the most useful by far for general purposes, as they will bear enough heat through the winter to have them in bloom by the beginning of March, should be kept now at a temperature of 45° or 46° at night, with sufficient warmth in the daytime to permit of a free admission of air, which prevents their becoming drawn. As soon as the flowers show freely, which they ought to do by this time, the plants will bear a little liquid manure once a fortnight or so, but they must not have it over strong, or it will cause them to run too much to leaf. They ought to be kept close to the glass in the lightest house available, and especial care should be taken to see that they are free from aphides, on the first appearance of which they ought to be fumigated.

Fruit.

Vines.—Late Vines, being quite clear of foliage, there will be little now to engender a damp atmosphere, particularly if internal borders are, as they should be, covered with mats or dry straw, so that if the fruit has been well ripened, it would keep in plump condition on the Vines for at least three months ; but this is undesirable, taking into account the future well-being of the Vines ; provision should therefore be made for keeping the bunches in bottles of water, and all should be cut about the second week in January. We have never experienced any difficulty in keeping Grapes in good condition till June, except once, when they were left on the Vines until the middle of February. In that case, when placed in water, the sap having become active by the mild winter of that year, the berries cracked, and, as a matter of course, decayed, so that under no circumstances should harvesting of the fruit be deferred beyond the second week in the New Year ; Vines should then be at once pruned and otherwise afforded the proper conditions of rest. Proceed slowly with the forcing of early houses, preferring rather to make up lost time after the Grapes are set than to risk the production of tendril-like "shows" by hard forcing. Pot Vines, if placed, as they often are, close to hot-water pipes, will need a large amount of water. When practicable, it is always best to plunge the pots in a bed of leaves, both to save watering and afford a slight bottom-heat.

Peaches and Nectarines.—Pruning, tying, cleaning of houses, &c., should all be now completed. See that inside borders are well moistened through, and kept so by the application of tepid water whenever necessary. A thick mulching of litter or Oak leaves not only keeps the borders in an equable state, both as to moisture and warmth, but gives off ammonia, which, till the trees come into flower, is beneficial, and prevents the necessity of constant syringing to maintain the proper amount of moisture.

Figs.—As soon as the pot trees that are to yield the first supply of fruit have begun to expand their terminal buds, increase the temperature and air-moisture, and let the trees have an abundant supply of warm manure water, and in the absence of litter or leaves to give off the desirable ammoniacal vapour, the floors and walls may also be occasionally syringed with the same. Keep the glass clean, and the trees as close to it as circumstances will permit. The earliest planted-out trees may now also be started by the turning on of sufficient heat to maintain a night temperature of 45°. Syringe the trees in dry or mild weather, but the floors and walls only in frosty or damp weather. Complete the pruning, tying, dressing, and cleansing of houses and top-dressing of borders at the earliest period, and to effectually rest the trees, keep them well supplied with air till the time arrives for starting them.

Strawberries.—The plants that are being started on shelves in Vineries, Peach houses, &c., ought to be regularly syringed till they come into bloom, as a preventive against red spider. It is on this account—liability to attacks of spider—that we prefer to start them in a frame filled with leaves, for though plenty of both top and root moisture will keep away spider, some plants are almost sure to escape notice and get dry, and then its advent is a certainty. When first placing them in forcing quarters examine them to see that the drainage is clear and the balls free from worms. Rub off any mossy vegetation that may have formed on the surface, but on no account break up the surface soil, for to do this is simply to destroy many of the best roots. Those plants that from want of frame room must perforce remain in open quarters should at least have sufficient protection to prevent the pots being smashed by the action of frost, and felt, boards, or tarpaulin should be used to throw off rain and snow.

Vegetables.

It will now be necessary to go over plots of Greens and remove all decaying leaves. Such vegetable refuse makes a valuable manure when it can be dug in whilst in a green state, but if this cannot be done it should be thrown together and intermixed with a little fresh lime, which will add to its value as a manure. Potatoes should be carefully examined ; all the early seed tubers should be laid in single file to sprout, on floors or shelves, free from frost. Some of the first earlies may now be put in shallow boxes of leaf soil, and placed in frames to start them ; and as soon as fairly rooted into the mould, they should be finally planted in forcing pits or pots ; we find the latter a very convenient mode of growing the earliest batch, as they can be moved from place to place as circumstances demand. Myatt's Ashleaf Kidney and Fenn's early Market Round are both excellent varieties for pot culture. If not yet done, Asparagus plantations should have a thick covering of well-rotted manure, but no alleys should be scooped out to cover it ; such a proceeding is not only useless, but hurtful. New plantations of Horseradish and Rhubarb may now be made at any time, and established plots should be manured and dug over. Still keep Globe Artichokes well protected, though if time can be afforded, the protecting material should be removed when there is no likelihood of frost, and again applied on the first indic tions of it. Let all vacant plots of ground be manured, and dug, trenched, or ridged up as soon as possible, in order that they may have the fullest exposure to the ameliorating influences of the weather. A plan of cropping for the forthcoming season should at once be decided on, and in making it out see that the various plots have the crops varied as much as possible from those of last year. Taking the same crop twice consecutively from the same ground not only impoverishes it more than it otherwise would be, but the produce is less, the only exception being when the ground is deeply trenched.

The Codling Moth and Apple Grub.

GARDEN ENEMIES.

THE CODLING MOTH.

(CARPOCAPSA POMONANA.)

THERE are few persons to whom the grub of this little moth is unknown, as it is found only too commonly in Apples and Pears, and at times in such abundance as to seriously injure the crop. It is very difficult to keep in check, and, unfortunately, its natural enemies are not very numerous, Many of the moths are killed by birds, and if the weather be cold and damp about the time they make their first appearance, many, no doubt, perish before they have laid their eggs. As the fruit containing grubs generally ripens and falls some time before the sound portion of the crop, it should be collected and destroyed, for each Apple or Pear is nearly sure to contain a grub. In gardens where there are espaliers or dwarf trees, the fruit on them should be carefully looked over from time to time, particularly in May and June, and any showing signs of a grub being within should be gathered and destroyed ; these may be known by their having a black or reddish-brown spot on them, which is the entrance to the gallery the grub is forming. In the spring any rough loose bark on the stems should be scraped off, and any chrysalides which may be found destroyed. The moths should be killed whenever they are detected. The moth makes its appearance in the month of May, and shortly afterwards begins to lay its eggs, generally depositing them in the eyes of the Apples or in the hollows near the stalk, usually selecting the firmer kinds of fruit. In favourable weather the grubs are hatched in the course of a few days, and immediately begin to eat their way into the fruit and take up their position near the core, eating the flesh of the Apple and making a connecting gallery with the outer world ; this allows a little air to reach the grub, and also enables it to get rid of some of its droppings, which are found in great quantities in any worm-eaten Apple. The fruit continues to grow in spite of the grub, and, as before stated, falls often with the appearance of being ripe long before the uninjured fruit. The grub becomes fully grown in about three weeks or a month (in June or July), and then leaves the fruit, whether it has fallen or not, and chooses some sheltered place on the stem of the tree or beneath the surface of the ground, and spins a cocoon like a silkworm round itself, in which it changes into a chrysalis. In a few days the moth comes out and commences to lay its eggs on the fruit, so that in July, August, and even September, the fruit is attacked by a second brood of grubs ; this shows the desirability of the Apple grower taking every precaution to destroy the grubs of the first brood, as on the number of those which become moths depends in a great measure the amount of damage caused by the second brood. The moths from this brood do not not appear until the following spring, the insect remaining during the winter in the chrysalis state. The moth measures about 8-10ths of an inch across the expanded wings ; the front wings are pale grey, with curved, transverse, darker fine lines and bands ; on the lower and outer angle of each there is a large reddish-brown spot surrounded by a golden band ; the lower wings are of a brownish-orange ; the thorax and body are brownish-grey. The grubs are about ½ in. long when fully grown, and are fat and fleshy ; they vary in colour from a yellowish-white to almost flesh colour. The head and a large spot on the first joint of the body are black or very dark brown, and on each joint are several small blackish tubercles, from which grow a few fine hairs. They have fourteen joints, not including the head on each of the three first, as well as on the sixth, seventh, eighth, and ninth, and, last, there is a pair of legs. The cocoon is oval, and about 6-10ths of

an inch long, whitish in colour, and when found on the stem of the tree small pieces of the bark are mixed with the web of which it is formed. Within this cocoon will be found the reddish-brown chrysalis. S. G. S.

GLASSHOUSES AND FRAMES.

Geraniums and Primulas for Winter Blooming.—We have received from Mr. John Green, Thorpe Nurseries, Norwich, cut blooms of the following kinds of Geraniums, which he grows for winter blooming. They were all bright and good, and suitable for the purpose intended. Single kinds:—Scarlet Vesuvius, scarlet; Salmon Vesuvius, salmon; White Vesuvius, white; Lady Sheffield, pink. Double kinds:—Wonderful or Double Vesuvius, scarlet; Madame A. Baltet, white; Madame Thibaut, pink; Ernest Lauth, magenta. Mr. Green also sent us blooms of semi-double Primulas, which are very pretty and useful for cutting. The seed was sown last spring.

Epacrises.—These endure hardships better than Heaths. Plants of them that lose their foliage and appear almost dead, from being left too long in warm dry rooms in winter, seldom fail to push forth as freely as ever again in spring if kept a little warm till they start, and occasionally dewed overhead. The must be badly used indeed if they fail to revive under such treatment. From among the many varieties of these now in cultivation the following is a good selection:—Alba odoratissima, carminata, Albertus, delicata, densiflora, elegans, grandiflora, Kinghorni, multiflora, Mont Blanc, splendida, and Queen Victoria. The one we now figure, E. miniata splendens, is one of the most graceful, and may be grown to a large size. They require a compost of peat and silver sand, firm potting like the Heath, and efficient drainage. Unless large specimens are desired the plants will do well enough if potted once in two or three years. They should be cut down after flowering, and I have always noticed that, unlike soft-wooded Heaths, which prefer the open air in summer, they do best in a cool greenhouse or pit during the season. Some of the varieties make long straggling shoots, but these are not unsightly, and the longer they are the longer will the wreaths of flowers on each shoot be, if the plants have been grown under a good light, with plenty of air, and are well ripened. It is best to use the Epacris for flowering in early winter or spring, which gives the plants time, after being cut down, to make a good growth the following summer; when cut down late the flowers are not so abundant nor so fine. Their roots will stand pruning when it is needful to keep them in small-sized pots.

Epacris miniata splendens.

Lapagerias as Standards.—Few plants are better adapted for covering umbrella-shaped trellises than Lapageria rosea and its white variety. The flowering shoots can be tied so as to hang loosely and gracefully from the trellis, a position in which they can be seen to better advantage than when trained over balloon or pyramidal-shaped trellises on which we too frequently see them; moreover, as standards they can be employed in the conservatory to better advantage than in any other form, inasmuch as they allow of other plants being placed beneath them.

The Giant Christmas Rose in Pots.—This fine early-flowering Christmas Rose makes an admirable pot plant in winter. We lately saw it treated in this way in a garden in which one plant in a 10-in. pot bore upwards of 100 buds and blossoms. Such plants may be obtained either by growing them continually in pots, or by planting them out during summer and lifting them and potting them in the autumn. It is a good plan to put a sheet of brown paper round the plant when the bloom-buds appear, allowing the light only to fall on its top. This brings the flowers well up among and above the leaves, which, if the plants be wanted for conservatory decoration, is very desirable. Under this treatment, too, the flowers come whiter than when exposed to very bright sunshine. This Hellebore might also be made to form an effective feature in the conservatory if planted in quantity in the autumn, so as to form an undergrowth to Palms, standard Chrysanthemums, and similar plants.

Aster grandiflorus for the Conservatory.—This, one of the latest-blooming kinds of Michaelmas Daisy, is well adapted for lifting and flowering in pots in the conservatory. Its large flowers, which are of a very showy bluish-purple, supply a colour wanting in Chrysanthemums, and well grown bushy plants of it would greatly enhance the effect of a mixed collection of Chrysanthemums, scarlet Salvias, and similar plants used for autumn indoor decoration. We lately saw fine bushy specimens of this Aster just opening its bloom-buds, and which, if lifted, would be well fitted to the purpose alluded to. Associated with this kind were also in flower Aster terminalis, A. paniculatus, A. Novæ Angliæ, the dwarf A. discolor, and A. ericoides.

Soil for Palms.—Though generally found growing in peat, nearly all Palms succeed equally well in loam. We lately saw examples of Cocos Weddelliana and other good Palms in a London nursery growing entirely in yellow loam, and seldom have we seen more healthy plants, the foliage being much darker and more glossy than that in plants grown in peat.—S.

Watering Camellias.—Many who have well attended to their Camellias during the summer and autumn are apt to cause themselves irreparable loss in the matter of bloom by neglecting to water them properly at this season. Those rules which apply to most hard-wooded plants with respect to watering in the winter do not hold good in the case of Camellias. They must not stand dry, and if they once become so, water them twice in the interval of a day, so that the balls may become thoroughly saturated. In dull, damp weather, when judging in the ordinary manner is deceptive, tap the pot; a clear ringing sound denotes the necessity of a good moistening. Bud-dropping is extremely vexatious, and a want of moisture at the roots and a too confined atmosphere are fertile sources of mischief in this way.—C. B.

Wintering Echeverias.—Where room under glass is scarce, flower garden Echeverias may be stored away in a shed or tool-house. If packed closely in boxes they will need no water during the winter, and will endure uninjured from 10° to 15° of frost. If the winter be exceptionally severe, a mat or two thrown over them will be sufficient to insure their safety. I have kept them in this way when the thermometer has registered 18° and 20° some nights in succession.—J. B.

SEASONABLE NOTES ON ORCHIDS.

In commencing Orchid culture a selection of species should be made which will bloom at different periods, so that a succession of flowers may be had all the year round, and this should be done with some degree of partiality for those which display their charms through the dull months of winter.

Oncidiums.—Amongst the best which bloom at this time of the year may be named Oncidium varicosum majus and O. Rogersi; of these, the first has been introduced most abundantly, and amongst them many are now in flower that differ considerably in size and brilliancy of colour, but all are beautiful and specially valuable for winter decoration, for with a little management as regards retarding a few plants will produce a harvest of flowers from October to Christmas. O. varicosum may be grown in a pot or in a basket, and suspended from the roof, whichever way is most convenient; it matters not which, as far as the plant is concerned, provided all its surroundings are sweet and clean, and the atmosphere sufficiently humid. Some say they get tired of Oncidiums because they are all yellow, but O. incurvum is a charming kind, the flowers of which are white and rosy-pink; individually they are small, it is true, but they are produced in great abundance upon long branched spikes; it is now opening its delicate flowers, which will last till January if not sprinkled with water by the syringe.

Lælia autumnalis.—We have a perfect gem, which is throwing up dozens of spikes, each bearing two, three, and five blossoms, which are of large size, measuring 3 in. or 4 in. in diameter; the colour in the sepals and petals is deep rosy-purple, and the lip rose and white with a stain of yellow in the centre. They last long in a cut state, and in addition to their pleasing colour, they emit a delicate perfume; as regards treatment, all that is needed is good drainage, good peat, and living Sphagnum Moss to retain moisture at the roots; plenty of air, too, when growing must be given, and the plants must be placed in such a position that the sun will shine upon them in the morning.

Pleiones, or as some term them Indian Crocuses, are now and indeed have been very gay for at least a month past. A beautiful succession of these may be kept up by placing some in a cold house. The brilliant contrast of colours in P. lagenaria and P. maculata is truly charming, whilst the tints of P. Wallichi are soft and rich. These plants begin to push up their young growths immediately after flowering: therefore, when the blooms fade, repot them at once in order that the new growths may reap the full advantage of the fresh soil.

Odontoglossums.—The beautiful Odontoglossum Alexandræ must ever be a favourite

with Orchid growers; its large flowers never fail to elicit admiration. Of this Odontoglossum there are numerous varieties, but amongst the whole of them a bad one could not be found. It is now pretty generally known that this Odontoglossum succeeds best under cool treatment. Odontoglossums like abundance of air, but it must not be admitted irrespective of external conditions, for if that were done, they would become starved and shrivelled. The Sphagnum should be kept in a living state upon the surface of the pots, and should never be allowed to become dry at any season; a few plants of this species will keep up a succession of flowers during the winter months.

Calanthe Veitchi is another winter-blooming plant, totally different from anything previously described, and extremely beautiful. It is, however, far too often starved, and consequently does not produce that abundance of flowers which it otherwise would do. The pseudo-bulbs are from 12 in. to 16 in. high, partially deciduous, or, perhaps, quite so; still, it sometimes retains its foliage until after it has bloomed. The flower-spikes measure 2 ft., 3 ft., and 4 ft. high, and bear numbers of rich rose-coloured blossoms. After blooming the plants should be allowed to rest for a short time; then they should be re-potted, using for the purpose loam, leaf-mould, peat, and cow manure in equal parts interspersed with some Sphagnum, and during the growing season they will be benefited by applications now and then of weak liquid manure.

THE SHRUBBERY.

Hardy Azaleas.—These are deciduous shrubs, which put forth their flowers before the leaves, or the leaves and flowers are developed simultaneously. Azaleas may be classed in the first rank of deciduous shrubs cultivated for the sake of their ornamental flowers; yet, notwithstanding the beauty and variety they present, they are comparatively neglected. Amateurs having small gardens and limited means are deterred from planting them, probably because they are usually described as peat-loving plants. It is true that they attain greater perfection in a carefully-prepared soil than they do in a close, adhesive soil; but in this respect hardy Azaleas are less exacting than most Rhododendrons, and will flourish in places where Rhododendron ponticum grows freely. It is worth noting that most of the hardy Azaleas grow naturally in swampy places, but not necessarily in boggy ground. But the hybrid varieties commonly cultivated succeed well in light, thoroughly-drained soil. In the absence of peat, leaf-mould may be used, and where the soil is heavy, sand should be added. Of course, the proportions of leaf-mould and sand necessary or desirable depend entirely upon the nature of the soil upon which one has to operate; and a light, porous soil requires no modifying. Planted singly or grouped, Azaleas are very effective, but they are not so well suited for mixed shrubberies, nor do they grow and flower so freely when mixed with other subjects. For the variety and brilliancy of their usually fragrant flowers they are unrivalled, and many of the tints and shades of colour are almost unknown in any other class of plants. They range through all shades and hues of yellow to orange and red to crimson, with some very singular mixtures of yellow and red; there are also white-flowered varieties. Another strong point in their favour is that they produce their flowers soon after the beauty of spring-flowering shrubs is past. Being slow-growing subjects, they should be planted rather thickly, for they are some years growing and spreading 3 ft. or 4 ft. Azalea mollis is a dwarf-growing kind, with waxy, well-formed flowers, which is highly effective in spring. When placed in a greenhouse all the hardy Azaleas flower early and freely, and are very attractive objects.

Fortune's Bamboo (Bambusa Fortunei).—A plant like this so distinct in leafage should more often be seen in English gardens. The fresh green foliage and irregular outline of this Bamboo produce a very pleasing impression, and the fact of the plant resisting with impunity the rigours of a severe winter, retaining all its freshness through periods of hard frost, renders it of great and special value. There is a pretty, variegated form of it, and the two would form a pleasing picture planted in close companionship. This, like all the Bamboos, likes a fine, rich deep soil, and its good qualities render it worthy of some extra pains being taken in the preparation of the soil.—J. C.

Honeysuckles on Fir Trees.—In our shrubbery borders and woodlands we have some fine Honeysuckles that have been planted near the bare stems of Scotch and other Fir trees, and supported until they reached the lower branches; after that they support themselves and make a fine display. Some of the Clematises would also look well in similar positions.—G., *Maidstone.*

ROSES.

Rose Growing.—Being uninitiated in the art of Rose growing, it was with some misgivings that I procured last autumn about thirty half-standard trees, chiefly Hybrid Perpetuals, and planted them in my little garden. I dug holes about 1½ ft. deep, put a bucket of stable manure in the bottom of each, planted the trees, staked them, and (regarding the culture of Roses as a mysterious affair, not to be rashly undertaken) waited anxiously for the result. I have been, however, rewarded for the little trouble I took with a good display of Roses, both as regards quantity and quality, without a single failure. Either, therefore, my experience is exceptional, or nothing is easier than to grow Roses. One of my trees, Madame Bérard, a Tea Rose, deserves special remark; it was one of the first to bloom, and kept up all the summer and autumn a continuous display of exquisitely-tinted flowers. Certainly no Rose in my limited experience can compete with this one.—S. C., *Dorset.*

Crimson and Pink China Roses.—These are, perhaps, the most continuous flowering varieties of the Rose that we possess; for months they are continuously a sheet of bloom. I am well aware that the individual blossoms are not to be compared with those of Hybrid Perpetuals, but for isolated spots in pleasure grounds I feel sure that beds of these old-fashioned Roses will well repay the minimum of attention which they require.—J. G.

Roses in Autumn.—The beautiful collection of Roses we have seen exhibited by Messrs. Wm. Paul & Sons from time to time in late autumn serve to show the advantages gained by planting suitable kinds in every available space close to greenhouse walls and similar places. From such positions as these the blooms alluded to are cut. The plants cover the low bare walls during summer, and in autumn yield an abundance of buds. The best kinds are Safrano, Souvenir de la Malmaison, the beautiful snow-white Niphetos, so much valued in London markets for bouquets, Isabella Sprunt, Marie Van Houtte, and several other good autumn-blooming kinds.

ANSWERS TO QUERIES.

3834.—**Planting Roses.**—Dwarf Roses should be procured and planted at once. The ground is now in excellent order, and if longer postponed poor plants only will be procurable from the Rose nurseries, as there is a great demand this season for all sorts, owing to the ravages of the past two severe winters. Poor plants give no satisfaction, and frequently dishearten a young beginner; too much stress, therefore, cannot be laid upon this point—to apply early and thus get good, strong, well-rooted plants. If possible, give the Roses a bed or beds to themselves apart from other flowers. Prepare the ground by trenching 18 in. deep, mixing with it some good half-rotten stable manure. In planting, the point of union of the Rose with the stock should be 2 in. below the ground; let soil, not manure cover the roots, and keep the points of the roots downwards, spreading them out as much as possible. Cut away all damaged roots, and shorten any which are too long, preserving intact all those small and fibrous. A good distance apart for the plants will be found 20 in. to 26 in. each way. If the ground is clayey, the Roses budded on the Brier will do best, as it is the natural soil of the stock; on the other hand, Roses budded on the Manetti stock will be the best for light lands, especially if sandy or mixed with gravel. Most Rose growers can supply the best sorts on either stock, but the Manetti is by far the stock mostly cultivated and budded. Shorten the long shoots about a third, to prevent rough winds disturbing the tree, as the roots will move before the severe weather arrives, and thus be more likely to do well next season, getting partly established at once. Thus done, all will be safe until March, when the plants should be pruned, but of this operation there is time enough to speak. I hope to give some few ideas on this point as the season for pruning arrives. As regards the best sorts of Roses for general purposes, that is, suitable for garden purposes, small amateurs, and the lover of a small garden generally, I append a list which will be found to give satisfaction, and, if properly treated, they will grow and,

Hardy Azalea (A. mollis).

weather permitting, unfold their lovely flowers, to delight all with their fragrance and glowing colours. *White, blush, and rose-coloured*—Boule de Neige, Baroness Rothschild, Comtesse de Serenyi, La France, Marquise de Castellane, François Michelon, Hippolyte Jamain, Mabel Morrison, and Madame Lacharme. *Carmine and red*—John Hopper, Edouard Morren, Dupuy Jamain, Jules Margottin, Alfred Colomb, Beauty of Waltham, Mdlle. Annie Wood, Duke of Edinburgh, Mons. E. Y. Teas, Duc de Rohan, Duchesse de Caylus, and Star of Waltham. *Crimson and maroon*—Charles Lefebvre, Fisher Holmes, Dr. Andry, Senateur Vaisse, Madame Victor Verdier, Ferdinand de Lesseps, Prince Camille de Rohan, Abel Carrière, Pierre Notting, Sultan of Zanzibar, and Jean Liabaud. *Climbing Roses*—Gloire de Dijon (best of all) and Cheshunt Hybrid, both perfectly hardy and good growers, the former flowering early and late. Most of the Hybrid Perpetual Roses, of a vigorous growth, make capital pillar or wall Roses. Tea Roses and Noisettes are not, generally speaking, hardy enough to recommend for ordinary garden culture requiring protection from frost and cold winds. Before planting any of these the habit and constitution of the varieties should be carefully studied. It only remains to be stated that, to grow Roses to perfection, pains and personal attention are absolutely necessary, both as regards head and hands, and to those so devoting themselves to this work I can safely promise a rich reward in the way of a delightful and useful recreation. I wish many more of our friends having suitable gardens and leisure would try it.—William Walters, *Burton-on-Trent.*

3830.—**Florists' Polyanthus.**—In reply to the query of "H. S.," I am glad to be able to inform him that the varieties named by "A. D." may be found in the catalogue of hardy plants, &c., sent out by William Clibran & Son, of the Oldfield Nurseries, Altrincham. The prices range from 9d. to 2s. 6d. each, except Buck's George 4th, which is 7s. 6d., and is stated to be very scarce. I believe Lancashire has always been a noted county for the cultivation of the Polyanthus. As regards the scarcity of fine varieties, in my opinion it is one of the results of the "bedding-out mania." When this system first commenced, numerous charming plants became at once neglected. The demand for them in a great measure ceased, and therefore growers for sale no longer found it to their interest to devote so much attention to such subjects. Happily, the taste for old-fashioned flowers, like the Auricula, Polyanthus, Carnation, and Picotee, &c., seems to have revived during the past few years, and the only drawback to their universal culture seems to be the high price charged for some of them, more particularly the Auriculas. I cannot help thinking that florists would do a brisker trade in these charming plants if the prices were reduced some what; 2s. 6d. to 5s. each for alpine varieties is a price which comparatively few can afford to give. It may not be out of place to mention here that the beautiful old double Wallflower of the blood-red and purple varieties seems to be almost lost, or at any rate very scarce indeed. I find that the very few firms who still retain them in their catologues are not always prepared to supply them when ordered. No doubt they still exist in a few secluded country places where some of the "old school" have never ceased to cultivate their favourites, and carefully protect them during the severe winters which are destruction to these double varieties, but eighteen years ago I have seen them in gardens by scores.—Burns.

3833.—**Flowers in Winter and Spring.**—The best plants to keep up a supply of bloom in a greenhouse from Christmas onward are Chinese Primroses of various colours, Cyclamen, Camellias, white and coloured, Erica hyemalis and gracilis, Deutzias, Genistas, Echeveria retusa, to be followed by Cinerarias, Hyacinths, Tulips, Himalayan Primroses, Polyanthus, and common Primroses, single and double Violets, Myosotis, and other hardy things, all of which will bloom freely in a greenhouse where there is but a moderate amount of heat. It is too late to sow seeds of plants to flower early in the spring; there is not time to get the plants into bloom. The proper time is about July and August, when several hardy annuals may be sown, such as Silene pendula, Saponaria calabrica, Nemophila insignis, Pansies and Violas, Limnanthus Douglasi, &c. If seed of any of these things were sown now under glass, they would not bloom before June. All the earliest spring-bedding plants, such as Daisies, are not raised from seed, but increased by division.—A.

3834.—**Planting Roses.**—Roses may be planted now in the open ground, and a climbing Rose may be planted in the greenhouse now or almost at any time if turned out of a pot. Those planted out under glass need as they get established plenty of water, and occasionally a top-dressing of short manure. By bush Roses, probably such as the old common and crimson Chinas, Damasks, Scotch and Persian Briers, &c., is meant. These may he obtained from a Rose nursery under the above designations. Tea Roses are rather too tender to grow as bushes, but good Hybrid Perpetuals on their own roots, such as John Hopper, Louis Van Houtte, General Jacqueminot, and others make good bush plants. Ask a nurseryman to send you a proper selection for the purpose you require.—A. D.

3839.—**Plants for Rooms.**—Of flowering plants suitable for a cool room to bloom now the best are Chinese Primulas, Cyclamen, forced Deutzias and Genistas, early Cinerarias, Epacris hyemalis (white and lilac) and gracilis (red). Plants that bloom now and through the winter without artificial heat are few indeed. In the summer there are plenty of things that may do well in a room window with the aspect named, Pelargoniums, Fuchsias, Musk, Creeping Jenny, Yellow Calceolarias, Petunias, Azaleas, &c., all bloom freely in the summer almost anywhere. Of course too much must not be expected from plants in a room, as the conditions are very different from those in a greenhouse.—A.

3840.—**Wintering Ferns.**—Provided the room in which your Ferns are does not admit hard frost, the plants should be none the worse for losing their fronds now. It is but the natural rest the plants have when not kept in strong heat. A temperature of about 50°, which is certainly very warm for the winter months, will keep all the greenhouse kinds green and growing. The best soil is half loam and half sandy peat. It would be best, perhaps, not to plant out in a case at present, but leave till the spring. The damper air of a case may be prejudicial to plants that are now at rest.—D.

3818.—**Treatment of Vallota, Amaryllis, and Agapanthus.**—The Agapanthus and Vallota should winter in a cool structure, not depriving them of light, and giving enough water to keep the foliage from shrivelling. The Vallota flowers most freely when the soil is crammed with roots, so that if the plant is in a 6-in. pot there will be no need to repot; otherwise it may be shifted in April in a compost of peat and loam, keeping the bulb well up above the level of the soil. If it is not desired to fresh pot, the necessary amount of luxuriance may be obtained by watering with weak liquid manure once or twice a week. The best way to administer water in the winter is to stand the pot in a saucer and let the soil absorb the necessary amount of moisture. Sometimes in watering in the ordinary manner the surface soil gets too wet and decay sets in at the base of the bulb, but by the plan recommended this danger is obviated. The African Lily (Agapanthus) is a gross feeder, and should be shifted in March into a rich compost of good loam, leaf-mould, and decayed manure, pressing the soil in very firmly round the roots. This plant likes plenty of moisture at the root when growing, and as soon as the pots get full of roots, liquid manure, such as guano water, should be given at least twice a week. The Amaryllises may be stored away in any corner or under a stage for the winter, bringing them into the full light in March. Give them a top-dressing of free rich soil, but be sure and not give a drop of water until the flower-buds appear; then water gently until the plants are in full growth, when copious supplies should be given. The plants may also be shifted as soon as the flower-buds are seen into a good compost of loam, leaf-mould, and rotten dung, using it in a moist, but by no means wet state, and carefully watering until growth becomes lively. If so desired, the Amaryllis can be forwarded into bloom by placing the bulbs in gentle warmth at the beginning of the year.—J. C. B.

3842.—**Cropping a Kitchen Garden.** You have done rightly in casting up the soil into rough ridges, and the best way will be to let it lay thus until sowing time arrives. We see no reason why the greater part of the vegetables commonly grown in gardens should not succeed in the situation mentioned. As to the time of sowing and general culture, we must refer you to the calendar of operations given weekly in this paper, and you will also find from time to time cultural articles bearing on your wants. If fruit is to be grown, both Gooseberries, Currants, Raspberries, and Strawberries, may be now planted, and a few Broad Beans and early Peas may be sown in the warmest and driest situation in the garden. The boxes may be utilised early in the spring for sowing Lettuce, Mustard and Cress, and Radishes, and in another year they would prove an excellent shelter for Brown Cos Lettuce and Cauliflower plants.—J. C. B.

3829.—**Climbers for Trellis.**—Any of the Ayrshire or evergreen Roses, such as Ruga, Dundee Rambler, Félicité Perpétué, and Adelaide d'Orleans, would succeed. They are vigorous growers and perfectly hardy, resisting with impunity the most severe frost. Clematis Jackmani and rubella would form, by reason of their rich colours, a pleasing and effective contrast to the pale tints of the Roses. We would also plant a Gloire de Dijon Rose, giving it the best place, and you might introduce, if there is space enough, a Dutch Honeysuckle. The moisture at the roots will just suit the Clematis, which must be cut down to within 4 in. of the soil every year, the month of March being the best time for so doing.—J. C.

3844.—**Culture of the Artillery Plant.**—This is a very easy plant to grow. During the winter it requires a temperature of from 50° to 55°, and delights in a moist atmosphere throughout the summer. A good compost for it consists of half loam and half leaf-mould and peat in equal proportions, adding thereto about one-sixth of the whole of silver sand. Shift in April, and shade from bright sunshine until the middle of September, when it should be freely exposed to the sun's influence. Water moderately until the pot gets full of roots, and then water more freely. During the winter water only when the soil is dry.—J. C. B.

3837.—**Hardy Passion-flower in Greenhouse.**—As your plant has made good growth, it will, in all probability, bloom well next year. If the pot is full of roots, it may be shifted about the middle of March into the next sized pot, otherwise a top-dressing of some concentrated manure will suffice. In order to get this climber to flower well, it should be fully exposed to the light, and should get plenty of air when growing, giving abundance of water in hot weather. Pruning consists in shortening back the shoots to about two-thirds of their length. This should be done at once.—J. C. B.

3870.—**Tomato Growing.**—I have grown these both in pots and in borders under glass very successfully this year, having had 800 to 1000 fruit from about thirty plants in 12-in. pots, in a cold pit without any artificial heat. One of the great secrets in Tomato culture which no one seems to mention (if quantity of fruit is required) is to confine the roots, say if planted out, by putting slates under and all round the plant in order to stop the root spreading too much. When well established use weak liquid manure water twice or three times weekly, and allow only three shoots to grow, keeping all other wood thinned out, and at ripening time cut away most of the leaves. I only used three kinds, viz., Conqueror, Orangefield, and large Red, and find these to be the best.—J. R.

3843.—**Converting Old Lawn into Vegetable Plot.**—The process of bringing a stiff clay into a thoroughly free mellow condition must be a work of time, for it is only by the yearly addition of ingredients of a light and porous description that the close, plastic nature of the clay can be overcome. The first thing to do, where the natural staple is heavy and retentive, is to throw it up into high rough ridges, not breaking the lumps, but leaving them as large and entire as possible. This operation should be carried out in the autumn, before the soil has become drenched by rain; but where it cannot be done thus early, a frosty time should be chosen, just when the surface-soil has become sufficiently firm to walk upon comfortably and before it has got too hard to admit of the free entry of the spade. Allowed to lie thus ridged up until spring, frost and wind by that time

will have so purified it, that it will be so far in a fit state for the reception of plants or seeds. During the winter any materials that it may be desired to incorporate with the soil should be brought together in readiness for use when the time arrives for sowing or planting. Burnt earth, charcoal-dust, wood-ashes, leaf-mould, and river sand are all excellent for the purpose; and if anything like a coat of 4 in. to 6 in. of any one of these ingredients can be applied, not only will the fertility of the soil be much increased, but it will lose a great deal of its close, retentive nature, and will be brought into and remain in a friable and workable state. When a piece of ground is required for planting, choose a dry day, and pull down the ridges, breaking all lumps, which should then crumble to fragments at the touch of the fork. Then apply the dressing of light soil and the manure, and fork it all well in, thoroughly mixing the various ingredients together. Any lumps which may not have become sufficiently pulverised to admit of their being broken by the fork should be brought to the surface, where sun and air will dry them out and sweeten them, so that the first shower of rain will cause them to crumble to pieces when touched with the fork. In this manner a good foot of free mellow soil will be at the disposal of the grower. In the case of newly-turned-up pasture the best way will be to crop it the first year with Potatoes, as the earthing up and digging will do much towards bringing the soil into a friable state. We would not plant early, but allow the ridge to remain until the middle of March, planting about the first week in April. If the whole of the plot cannot be dressed the first year do a portion of it. In the course of two or three years a stubborn piece of clay may be converted into a free, workable body of soil. I should add that drainage is of great importance in the case of heavy lands, and if only two rows of pipes can be laid through the piece of ground in question, it will be much improved thereby.—J. C. B.

3824.—**Renovating Lily of the Valley.**—The plants are probably suffering from overcrowding and want of good nourishment. The Lily of the Valley revels in deep, rich, light soil, and will not give blooms of good quality unless thus circumstanced. Take up the plants and lay them in carefully if you desire to replant in the same place. The best, way, however, would be to prepare a fresh situation for them. Stir the soil deeply, and if it is of a tenacious nature, add to it some light soil and well rotted dung; if the natural staple is sandy, all that will be needed will be good manure. Select the largest crowns, and plant them 6 in. apart, the smaller ones to be set by themselves. Mulch with manure, and water well in hot weather.—J. C. B.

3842.—**Cropping a Kitchen Garden.**—As I am a resident on the north-east coast, on the opposite side of the river Tyne from Finem Respice, and having a kitchen garden of a quarter of an acre in size, and within a quarter of a mile from the seashore, may I be permitted to give a list of what I have grown during the present year?—Lettuce, Radish, Onions, Leeks, Turnips, red Beet, Celery, Cauliflowers, Savoys, Curly Greens, red Cabbage, Dwarf Beans and Peas, Potatoes of sorts, Rhubarb, and herbs, such as Parsley, Sage, &c. All the above were sown and planted in April of this year, and turned out to be what any one might term splendid crops. Such things as Lettuce, Radish, Leeks, and Cauliflowers might be sown in boxes in March, but for the open ground all such things as are above mentioned should not be sown or planted till the beginning of April.—J. C., *Whitley-by-the-Sea*.

3825.—**Removing Glass from Glasshouses.**—I have found heat to soften old and hard putty, and would suggest an iron bar ⅜ in. square, any handy length, bent in any convenient form, with a non-conducting handle. Make it nearly red-hot, and apply it to the putty (care being taken not to touch the glass), and remove with hacking or chisel-knife. The iron could be made by any blacksmith. A copper bar would hold the heat longer than iron, but is much more expensive.—KIKO.

3826.—**Vines and Rats.**—The druggists are right in exhibiting care in the sale of arsenic, especially in London, where no one is personally known, whilst in country districts it is of less moment, because there the druggist knows something personally of his customers. Moth and Ringesen's rat paste can always be purchased, and this spread upon pieces of bread and placed in the runs generally gets eaten. It is a powerful and effective poison. Some good may be done by working the runs well with ferrets. It is not improbable that if some paraffin were sprinkled in the runs the rats would refuse to come near it, as such a perfume would be to their fine noses very obnoxious.

3841.—**Tropæolum speciosum.**—One of the best methods to transplant roots of the Flame Tropæolum is to lift a quantity of soil and roots in a lump and transfer to where needed. The roots very much less feel the check incidental to transplanting.—A. D.

3822.—**Plants from Stiff Clay Soil.**—Few plants will do better for covering a border in front of evergreens on clay soil than the Periwinkle (Vinca elegantissima), and the variegated form also. The Creeping Jenny will do, so will some of the creeping Saxifrages, also the Grasses Festuca glauca and viridis. For a dwarf smooth covering nothing is better than some of the green Sedums, especially Lydium. Ivies make a capital permanent covering in time, and once established will endure almost for ever.

3835.—**Cineraria Leaves Curling.**—Some Cineraria leaves curl naturally One of the finest kinds, Master Harold, may be distinguished at once by that peculiarity. Cinerarias can hardly want manure water yet unless the plants are nearly in bloom. Make it weak and give to the plants less often. Also give plenty of air in mild open weather.—A. D.

3830.—**Garden Polyanthus.**—The only *bona-fide* trade grower of these choice forms of gold-laced Polyanthus in the south of England is, as far as I know, Mr. R. Dean, Ranelagh Road, Ealing, W., who has most of the best kinds on sale, but I cannot give the prices. Mr. Dean can no doubt give "H. S." full information as to the whereabouts of northern trade growers. Between 1840 and the present time there has been a sad decline in the cultivation of the gold-laced Polyanthus, hence the comparative scarcity of many kinds.—B. S.

3831.—**Holly for Walking Sticks.**—We have found Holly growth of three years old to make the best and most enduring walking sticks. At that age it is both very hard and very tough. The bark should be removed, and the wood allowed to dry slowly before staining. When dried and rubbed well down with sand-paper a coat or two of ordinary painter's staining will colour them, and a coat of varnish will complete the operation.

3820.—**Raspberries on North Wall.**—Raspberries may do very well against a north wall if the summer proves a hot one, but if sunshine is lacking them, the new canes or suckers will not ripen, and no fruit may be looked for the next year. It is of the first importance that these should be ripened to get a crop of fruit, and therefore a sunny position is best. Red and Black Currants will do well against a north wall, and the fruit will hang until October.—A. D.

3766.—**Preventing Tree Stumps from Growing.**—Bore a hole in the centre of the stumps, and pour in a tablespoonful of sulphuric acid.

3700.—**Cost of Greenhouse.**—I built a small greenhouse last summer in the south-west angle of my garden wall, span roof. I paid a builder £4 to cut out and erect all the wood work including door and one course of brickwork. I painted and glazed it myself; I put in the stages. The cost of my greenhouse including a guinea stove is under £6.—OXONIENSIS.

3840.—**Wintering Ferns.**—I should advise "W. J. H." to plant his Maidenhair Ferns in his case as soon as it is ready. The roots must not be allowed to get dry, and frost must be excluded from them. Ferns require a light open soil; a compost of fibrous peat two parts, turfy loam one part, and leaf-mould one part, with a free admixture of silver sand, will suit them well. —STYAN, *Pottemewton, Leeds*.

3651.—**Plants for Rooms.**—I say positively that if "H. R." has gas in his house he need not have plants. I am a gas-fitter by trade, and I speak from experience, that however tight pipes and taps may be, there is a certain amount of escape which will destroy almost every plant except Ferns; at first the leaves turn yellow, then drop off. I have grown plants for many years in my greenhouse, and when one day in the house where the gas was they felt the effects.—E. T.

3825.—**To Soften Putty.**—Dissolve some soda in hot water, and mix with some fresh lime; when slaked it can be applied to the putty with a knife, and in a few hours it will soften the hardest putty.—F.

3826.—**Vines and Rats.**—Get a packet of Kearney's rat poison from Messrs. Kelly, Lower Sackville Street, Dublin, and carefully follow the printed directions sent with the packet, and you will soon get rid of the rats.—A. W. G.

3887.—**Transplanting Sweet Williams**—*Chemah*.—The best times are September, October, March, or April.

3888.—**Warming Greenhouse with Lamp.**—*Chemah*.—An open oil lamp is very injurious to plants.

3889.—**Budding Roses.**—*J. T.*—Get a copy of GARDENING, August 2, 1879, in which you will find an illustrated article on the subject.

3890.—**Grafting Old Fruit Trees.**—*J. T.*—As you know nothing whatever of the operation, you had better get some one to show you the way You will learn more in five minutes than we could tell you in a whole page.

3891.—**Clubbing in Cabbages.**—*Teddington*.—Get equal parts soot, air-slaked lime, and sulphur, and mix with water to the consistency of mortar, and dip the roots of the plants in the mixtnre before planting. A little red lead may be added.

3892.—**Slugs and Snails.**—*Teddington*.—Gas lime should only be applied to the land in winter when vacant. Salt may be used on land free from crops at the rate of 7 cwt. or 8 cwt. per acre.

3893.—**Roses on Walls.**—I have some Hybrid Perpetual Roses (bushes), and have planted them under a dwarf wall facing south. Will they flourish there as wall Roses? or must they be planted out in the open ground away from the wall?—W. B. [They will do very well if nailed to the wall.]

3894.—**Saxifraga longifolia.**—I have this planted in a sloping position on rockwork, facing south. It will not thrive, but decreases in size all the year; what requirements are necessary for its proper culture?—W. B. [Deep, moist, sandy soil and a partially shaded situation.]

3895.—**Potting Ferns.**—*Inquirer*.—You had better do this in February or March. Remove the sour soil from the roots, and replace it with fibry loam or peat and a little well-decomposed cow manure free from worms.

3896.—**Grafting Fuchsias.**—*Inquirer*.—Just when the buds are bursting is a good time The easiest way is to put the plants you wish to graft side by side, and inarch one branch on to the other by paring with a sharp knife a piece out of each branch and uniting them afterwards, binding them with soft bast or worsted. When well "taken," cut off close to the union.

3897.—**Fern Fronds a Pale Colour.**—How is it that the fronds of my Maiden-hair Ferns come up of a pale colour? I keep them at the end of a greenhouse where the glass in summer is painted a pale green. Is it sufficient shade? I allow the fronds to wither naturally, and then cut them off. They were when purchased a beautiful dark green.—E. H. [They want more light and probably more heat and air. Give them a little weak soot water occasionally.]

3898.—**Plants Losing their Leaves.**—I have two greenhouses, one kept at 60° to 70°, the other 50° to 60°. I have several Euphorbia jacquiniæflora and Poinsettias; both are in flower, but the leaves get yellow and drop off, and though they are kept in the warmest house, watered only moderately, I cannot keep a leaf on. I have only had them in a week. I also find that the Gardenias and Azaleas, though only kept moderately damp, have thrown up a kind of white fungus, mouldy in appearance. What is the cause and remedy?—W. E. P. [The Euphorbias and Poinsettias evidently require a little help in the way of artificial manure or manure water. Give them enough at a time to thoroughly soak the whole of the soil. Water given in driblets always brings unsatisfactory results. The Gardenias and Azaleas are probably suffering from this.]

3899.—*Beatrice, N. K.*—We cannot find out what plant you allude to; we do not know one of the name you mention.

3900.—**Insects on Plants.**—*A. H.*—It is scale probably. See article on its destruction in last week's GARDENING.

3901.—**Lichen on Fruit Trees.**—*Mr. C.*—See GARDENING, November 27.

3902.—**Wild Cherry Tree.**—In my garden I have a beautifully-shaped wild Cherry tree about 18 ft. high. What can I do to make it profitable?—R. W. D. [Cut it back and graft it with a good sort; do it at once or early in spring if you can get the grafts. You had better get some one who understands grafting to do it for you.]

3903.—**Tea Roses.**—I have several Tea Roses in my lean-to greenhouse, which ranges in heat from 55° to 75°, they are still flowering, but the leaves keep falling. I should be glad to know how this can be avoided. I do not water heavily, only just keeping them nicely moist. —RANTUT. [You cannot expect to keep Roses always growing and flowering. They are sure to lose some of their old leaves in winter.]

3904.—**Stock for Epiphyllums.**—*Constant Reader*.—The Pereskia is the best stock. Graft in spring after the plants go out of flower, or early in autumn. Firm, sandy, porous soil is the best.

3905.—**Mushrooms in Greenhouse.**—I have a space about 4 ft. wide and 6 ft. long, surrounded with hot-water pipes in a greenhouse; over it is an open stage for plants, so that the drip goes through. Could I utilise the space by making a Mushroom bed? How should it be made if feasible?—B.E. [It would not do unless you slated over the stage to prevent drip, and then it would be extremely doubtful. An outhouse or cellar would be much better for Mushroom growing.]

3906.—**Shrubs in Window Boxes.**—*A Learner*.—Solanums will not succeed during winter in an outside window box. As regards the shrubs not doing well, perhaps you have been imposed upon by the person you bought them from. If you got them from a street hawker turn them out of the pots and see if they have any roots.

3907.—**Golden-leaved Arbor-vitæ.**—*A Learner*. You probably mean Thuja aurea.

3908.—**Planting Tulips.**—*Lover of Flowers*.—Plant any time whilst the weather is open. Bury the bulbs 2 in. in the soil. The bed should be well dug and manured before being planted.

3909.—**Town Greenhouses.**—*Mrs. W.*—You will find articles on this subject in GARDENING from time to time.

3910.—**Pruning Thujas, &c.**—When should Retinosporas and Thujas be pruned? and how are they propagated?—LEWISHAM. [Prune with a sharp knife in March or April. They are propagated from small shoots placed in pots of sandy soil in a close frame or a cool greenhouse.]

3911.—**Zonal Geraniums for the Window.**—When the above has done blooming in early summer, and you want them to bloom in winter, what is the proper treatment?—F. [Stop the points of the shoots; keep all flower-buds picked off, and place in the sun till October, when house in a airy, dry temperature of 50° to 55°.]

3912.—**Preserving Leaves.**—Will you explain how to preserve between paper some few leaves of Australian trees and plants? and are they gummed on?—QUIS. [Put them between blotting or drying paper under a heavy weight; take them out every day, and dry the paper. When well pressed and dry, fasten them on to your mounting paper with small strips of paper and gum.]

9313.—**Seakale.**—*Gloire de Dijon*.—Seakale wants deep well-manured soil. Purchase some young roots from a nurseryman, and plant at once. Do not cut any this season, but let it get well established for next year, that is if you want a permanent plantation. After this you can get stock by cutting off the fleshy roots 3 in. long, and planting them in good soil during winter and spring.

3914.—**Tritonias, &c.**—*Gloire de Dijon*.—They may be potted now in good sandy well-drained soil, and put in a frame or greenhouse, or they may be planted in any warm sheltered position out-of-doors, where a little covering can be given them in spring during severe weather.

3915.—**Liming Land.**—*One in a Fix*.—A good shovelful to a square yard is a very fair dressing; you can

more if convenient. The soot would be better put on in spring a few days before you crop the land. A slight covering will be enough. Both the lime and soot must be well worked into the soil.

3916.—**Club in Cabbages.**—*One in a Fix.*—Sow the seed in firm land, and before planting dip the roots up to the leaves in a mixture of equal parts soot, lime, and sulphur, with a little clay added to make it of the consistency of thick paint.

3917.—**Tarred Fence for Plum Trees.**—I am about to build a hoard fence, and thought of preserving it with tar. Would the tar when dry be injurious to Plums trained over it?—H. H. [Not in the least.]

3918.—**Cyclamen in Windows.**—*Lingden Hazel.*—Give plenty of air, sponge the leaves with tepid water occasionlly, and water at the root when the soil is getting dry. Do not use manure water.

3919.—**Early Potatoes.**—I am going to try to get early Potatoes. I have got a large Cucumber frame and a Vinery, both with heat. The Potatoes I am going to set are Old Ashleaf and Rivers' Royal Ashleaf Kidneys. What sort of soil had I best plant in, and when? and further, what degree of heat will they require? Must they have plenty of air?—W. Jones. [If you can give them a slight bottom-heat by means of a bed of leaves you had better do so. Use light soil free from worms, &c. Plant within 2 ft. of the glass, if a little closer all the better. Plant in rows 1 ft. apart, and 9 in. from set to set. Cut out all the eyes from the sets but one—the strongest. Do not let the temperature fall below 40°, nor exceed 50°. Give plenty of air whenever possible. Water well when growing freely and earth up when necessary.]

3920.—**Raspberries Failing.**—*Globe.*—The culture of Raspberries is summed up in a few words. Rather light rich soil, frequent hoeing, but not digging up the surface, mulching during hot weather, cutting down all old canes close to the ground in autumn, leaving enough young ones made during summer to fill their places.

3921.—**Aspidistra Turning Yellow.**—*Mrs. W.*—You must indeed treat it badly, for we know of no plant that will stand so much rough usage as this. Give it water when it is dry, and sponge the leaves occasionally. If it is pot-bound give it a little manure water or artificial manure.

Second Volume of Gardening.—*Hernhut.*—The second volume commenced with No. 52.

Brass Syringe.—*M. S. M.*—Apply to any seedsman or ironmonger.

Summer Flowering Chrysanthemum.—*J. J.*—From any good nursery.

Moss on Fruit Trees.—*Canadian.*—See article in Gardening, November 27 last.

Balsam Seeds.—*F. D. S.*—From any respectable seedsman. Consult our advertisement columns.

J. O.—Try good putty.

Names of Plants.—*G. A. R. D.*—Pernettya mucronata.——*Mary.*—Apparently Genista hispanica; it will grow in any good soil.——*F.*—Diplacus glutinosus, a hardy plant, or may be grown in pots in frame or greenhouse; flowers orange.——*W. R. T.*—You probably mean the Belladonna Lily (Amaryllis Belladonna).——*Kettering.*—An Anthurium of some kind, but we cannot tell which without flowers.——*Flora.*—Euonymus radicans variegatus.

QUERIES.

3922.—**Gravel for Walks.**—Will some one give me some information about the best gravels to use for making walks? It is daily more and more apparent to me that the paths of a garden are one of the most important parts both for utility and appearance. I live in Holderness, not very far from the sea, where we have plenty of sea gravel; plenty of gravel of a chalky nature and plenty of ashes are procurable. We have no difficulty in getting ballast for the bottom of the walks, as the clay, if burnt, forms a very good dry bottom, but it is the surface of the walks that is our difficulty. The gravel from the seashore is good in colour, but it will not bind, and is constantly kicking about on the beds, and is trodden on to the Grassplot, where it spoils the mowing machines. The gravel from near the chalk is soft, and after a frost runs almost like clay. Ashes look funereal and spoil the prettiest garden, and there is the same objection to asphalte. There are gravels which combine the hardness of sea gravel with a good yellow colour and a power of setting quite hard, so that in almost all weathers they will bear walking and wheeling over. If any reader can refer me to any place near here where such a gravel can be met with, I should be very grateful, as it has long been a difficulty with me. I have heard of there being such in the higher parts of Lincolnshire, but find a difficulty about how to verify what I hear.—S.

3923.—**Improving a Lawn.**—I have a lawn about 50 ft. by 30 ft. which I want to improve, as the quality of turf (laid last year) is not good. Will any reader instruct me how to proceed and give me the names of Grasses most suitable? also whether it would be ready for use for croquet next summer.—O. C., *Wimbledon.*

3924.—**Butterfly Tulip.**—Can any reader inform me the proper soil required for growing Calochortis luteus (Butterfly Tulip, yellow), and the mode of treatment and time of planting?—A. C. H.

3925.—**Salt as a Fertiliser.**—Will any reader inform me what weight of salt per rod could be safely applied to land as a fertiliser? Also the weight of salt that should be mixed with an ordinary bag of soot to form a compost for Potatoes. The soil to which it is to be applied is rather dry and porous.—M. T. W.

3926.—**Orange Trees.**—I shall be very much obliged if any reader will tell me how to grow Orange trees. I planted a seed three years ago, and it seems to have stopped growing. Is it likely to bear flowers?—Mervyn.

3927.—**Pruning Roses.**—I have a large Gloire de Dijon Rose trained over the front of my house, with a southern aspect What system of annual pruning ought I to adopt in order to obtain the most bloom?—F. T M.

3928.—**Keeping Chrysanthemum Blooms.**—I am told there is a method of keeping Chrysanthemum blooms in a dark cellar for several months, after which period they will apparently be as fresh as when first cut. Will a reader kindly tell the secret if such there be?—A Subscriber.

3929.—**Raspberries Blighted**—Three years ago I noticed in one piece of my Raspberries about forty roots, the young canes of which were coming up weak, knotty, yellow, and bushy headed; they only grew 1 ft. to 18 in. high—useless. The next season three other places, some 30 yards distant between each were similar. The fruiting canes cut to 4 ft. (fruit hard and valueless); some roots are between others that are growing with canes now 10 ft. I noticed a few black aphis around the roots. I have had more than thirty years' experience, and grow five acres of the above myself, but have never seen the same before; neither have other growers of 200 acres with whom I am acquainted. I manure them well, and every attention is paid. Can any one inform me what steps to take to prevent the disease spreading? It shows in the early spring directly the canes for the next season are coming through the ground.—T. W. B. B

3930.—**Chrysanthemums for Pots.**—Will you favour me with names of about a dozen large-flowering Chrysanthemums suitable for pot culture? stating their colour and character; also information respecting the same number of Pompones.—H. F.

3931.—**Garden Walks.**—In my part of the country there is no gravel, but only sandstone, which makes but a bad material for winter use. The custom is to use asphalte paths, but the colour of asphalte paths is so funereal that even when sprinkled with white sand it is by no means a good equivalent for the pleasant look of the London gravel. Can any one inform me of any method by which one may obtain a better colour. Is there any cement of a reddish hue which could be mixed with a broken sandstone to form a permanent path? Or would broken brick or burnt clay on the top of asphalte answer? A satisfactory method of getting garden paths at once durable and pleasant in appearance would be welcome to Venetian Red.

3932.—**Gas-lime in the Garden.**—I shall be thankful for any information with reference to the application of gas-lime to vegetable garden infested with earth worms, slugs, and caterpillars. I have given it a dressing of salt, but am informed that gas-lime is more effectual, and the soil being deficient in lime I am anxious to try it; but as it smells as if it was saturated with gas, I hesitate about doing so, not knowing what effect it would have on the vegetables now in the garden, and the seeds which I shall sow almost immediately and in the spring.—Lumbricus.

3933.—**Unfruitful Pear Trees.**—I have two Pear trees, one of which each year bears blossoms, but never any fruit. The other has never had even blossoms on it; both make pretty well of wood. I have cut off some of the principal roots, and still but little change has taken place. Can any one suggest the cause and cure?—H. J.

3934.—**Plants for Clayey Bank.**—At the foot of a small croquet lawn I have a bank facing north. The soil is stiff, and I have drained the lawn to the bottom of the bank, so that the lower part will always be both stiff clayey soil and wet. I have filled into the bank a couple of loads of old tree roots, and should be glad to know what best to buy to plant among the roots in such a soil and situation? Some of the roots are fine ones; projections 4 ft. to 5 ft. long.—J. Y.

3935.—**Planting Flowers.**—I have a good bit of flower garden, but lately I have had very little time. I have therefore had to trust to a jobbing gardener. The result is a minimum of flowers with the maximum of expense. This I want to avoid in future, and shall be glad if I could get a list of flowers and when to plant them, so that I can expect a fair succession of flowers and keep "jobbers" in order.—H. V.

3936.—**Fragrant Roses.**—I should be glad to have a list of twelve of the most fragrant Hybrid Perpetual Roses.—R. T. B.

3937.—**Secateurs, or French Pruning Shears.**—I bought a secateur about two years ago, and I should be glad if any one would tell me if they bruise the wood or do any harm to the tree?—James Bentley, *Burnley*

3938.—**Insects in Acacia Tree.**—I have an Acacia attacked by grubs in the fork and where branches have been cut off. Can anything be done for it?—Lewisham.

3939.—**Wireworms in Pots.**—Can any reader inform me as to the best means of destroying wireworms in pots?—H. E.

THE HOUSEHOLD.

Preserving Eggs.—1 gal. of unslaked lime fresh from the kiln, 4 oz. salt, 1 oz. cream of tartar, sufficient water to be poured on these ingredients till it becomes the thickness of cream, and will swim an egg. It must be quite cold before being put to the eggs, which should be packed very close and without a crack, and quite fresh. As the liquor wastes, it may be filled up with salt and water. The eggs must be always kept covered up with the liquid. To be put into an earthen pipkin, holding three score eggs.—D.

—— Put fresh laid eggs into a wire net, and immerse them in boiling water for forty or fifty seconds, and they will keep for months.—Delta.

To Pickle Vegetable Marrow.—Peel and take out the seeds of one large Marrow, cut in small dice, sprinkle with salt, and let stand 12 hours. After which get 2 quarts best vinegar, 1 oz. ground ginger, 1 oz. Tumeric, a few Chillies, a little Cayenne, two Shallots, 12 oz. loaf sugar. Boil these together for 10 minutes, then take out the Shallots and put in the Marrow dice, and boil for 20 minutes. When cold ready for use.—J. W., *Berks.*

Zinc Boilers for Brewing.—Can any reader inform me if zinc boilers will answer for brewing purposes? if so, whether hard water or soft is to be used?—A. B.

Malt Vinegar.—Can any one give me a recipe for making malt vinegar?—A. B.

GARDENING ILLUSTRATED.

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THE PEARLY ALOE.

(HAWORTHIA SUBULATA.)

As several of our correspondents have lately sent us pieces of this plant to name, we give a few particulars respecting it. One of the most ornamental of the large tribe of Aloes is the Haworthia subulata, generally called Aloe margaritifera, or Pearly Aloe, of which the annexed is a representation. It has a very short stem and leaves, which are flat above and convex below — in short, triangular in shape and rounded towards the tip. They are covered with a number of white, horny tubercles, which resemble pearls, and give the name to the species. The flowers are greenish, with whitish lobes, marked with a green line, and are grouped together in a terminal spike. The beauty of this Aloe, or Haworthia, however, resides in the leaves, the flowers being, comparatively speaking, insignificant. It is by no means difficult to grow, nor are any of the genus to which it belongs. The best soil for it is a mixture of three parts loam and equal parts of leaf-mould and sand, and it likes good drainage and partial shade in a cool greenhouse. It is often grown in windows with success, and although not pretty, it is exceedingly interesting. It requires but little water, especially during winter, and is well suited to a sunless window. The leaves should be sponged occasionally to keep them clear of dust.

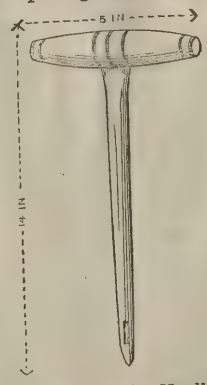
PEARLY ALOE (HAWORTHIA SUBULATA).

LILIES.

OF the many Lilies I have to deal with, none are more particular in regard to soil and situation than L. auratum, the bulbs sometimes dwindling away and disappearing in the most mysterious manner possible. Happening to have them in different situations, I soon found out the cause of this, or, at least, to me, what appeared to account for it—dryness at the roots, arising from the plants growing in an open, exposed position, where the sun shone with full force on the ground around them. In every instance where this occurred the stems were always shorter, and came considerably weaker than others in soil that sloped to the north, or received shade from such shrubs as Rhododendrons, whose roots do not ramble far to rob the ground of its moisture. If we examine the lower part of the stem of a Lily we shall find that when in a young state they begin to emit a quantity of roots around their base, which roots, of course, are intended to forage for them and afford the requisite support to the flowers. It must be obvious, therefore, if these feeders be dried up, or suffer from lack of moisture, that the tops have to draw the whole of their sustenance from the bulbs, which tax on their energies prevents the formation of others to supply their places the following year. This would necessarily occur with any growing where

the surface-soil became parched from the heat of the sun, and therefore any that are at all exposed should have a mulching of some non-conducting material or other, such as half-rotten leaves or very mild hot-bed manure, so as to intercept evaporation. This, with a good watering or two during the active growing season, and when the blooms are showing, will be found of the greatest assistance to them. Although Lilies are such moisture-loving plants at a certain time of the year, anything approaching a wet, stagnant condition of the soil is fatal to them, and more especially is this the case during winter, when they are in a semi-dormant state, as then they take up water slowly. The best way before planting is to thoroughly trench the ground by breaking it up to a good depth, and when doing so to work in plenty of peat if it can be readily got, or if not, a liberal dressing of leaf-mould in lieu of it. A bed or border so prepared will grow any of the kinds well, but with many of them it is a great help if holes are dug out where the bulbs are to be placed, and filled in with rough fibry peat and sharp clean sand, a mixture that is highly congenial to them, and keeps them clean and free from decay. In all cases where peat is not used the sand should not be omitted, as a handful or two of it placed around each cuts off their contact with the moist earth that would otherwise press too closely about them. Where it is intended to grow Lilies in shrubbery or herbaceous borders, in isolated patches or groups, the same kind of preparation may readily be carried out, only the holes dug for them in that case should be made to hold at least a bushel of the mixture above referred to, as then their well-doing will be a matter of certainty. The only natural soil I have ever seen them succeed in in a really satisfactory manner is a greasy, moist sand, in which they grow with great vigour and increase at a rapid rate compared with what they do when not so circumstanced. I have noticed that most of the imported bulbs of L. auratum are coated with the same kind of soil, thus showing that in Japan, where they must grow in immense quantities, the soil they are found in is of a similar nature. As regards the time of planting, the earlier it is done in the autumn, after the leaves and stems are ripe, the better, as immediately these die down large fleshy roots at the base of the bulbs begin to form, and it is almost impossible to interfere with them later on without bruising or damaging these to some considerable extent, but they are very often planted or potted in spring. Such as come from a distance or have been long out of the ground are destitute of these feeders, and every day's delay in planting detracts from their strength, as they are then living, as it were, on themselves, instead of drawing their supplies from the soil. The proper depth at which to place the bulbs is about 6 in. below the surface, or even a little more than that for the large strong growers that require so much extra moisture. In potting, however, it is much the best way not to cover them deeply, but to leave space to top-dress with large lumps of soil as the shoots progress, and these they seize hold of greedily and derive additional strength therefrom. Potting, like planting, should be done early, and the ball disturbed as little as possible, at least that portion of it below the base of the bulbs in which the large fleshy roots are embedded. That on the top will break away with the old stems and leave the crowns bare, among which some silver sand should be scattered, so as to work in and fill up the interstices among the scales. For pot culture there is nothing equal to a mixture of rough, fibry peat and loam in about equal proportions, through which the roots of the Lilies run easily and water percolates readily. Any cold frame where there is a firm, hard floor of coal ashes to place them on answers admirably for their winter quarters, as there they come gradually on, and are in every way better than they would be in a house far from the light and air. S.

A Useful Packing Needle.—The little implement, of which the accompanying is an illustration, is commonly used in Covent Garden Market and by many nurserymen when fastening up baskets or hampers. It is far more effective than the old-fashioned packing needle, inasmuch as the operator has greater power over the tool than he would ever have over the old-fashioned needle. It consists, as will be seen, of a flat piece of wrought-iron or steel, inserted in a wooden handle, and is exceedingly convenient not only for lacing wicker baskets, but also for opening small boxes of fruit or



Useful Packing Needle.

flowers. It can be made on the shortest notice by any blacksmith, and the manner in which it is used will be readily suggested by a glance at the sketch. The handle may also be made of iron or cast-steel if desired, and made to serve as a hammer.

Horticultural Buffoonery.—Mr. Shirley Hibberd has pleased himself with parodying my leaflets, and publishes a number of cuts, showing trees on their end, &c. I only allude to this gentleman from his now repeated attentions, and advise him, he being so fond of buffoonery, to turn to his own books, where there is the richest stores of material in that way that have ever been seen in books published on horticulture. I have long passed by those rich stores content that where a man does any useful work his foibles and his follies should be passed by; but when he is actively seeking a text to illustrate the most puerile attempt at fun that ever appeared in print, it may not be out of place to invite him to turn for a few texts to a book called "Rustic Adornments." This is extremely rich in the pictorial element, particularly in subjects for "Homes of Taste!" He invents trees turned upside down, for me. I should only have to literally copy and republish some of the very striking designs embellishing this and other books of his (and deliberately recommended for adoption) to cause a great deal more hilarity in the gardening world than anything recently published. The man who hangs bricks on fruit trees to induce them to fruit, and who recommends putting a tile under every Potato root, offers, apart from his illustrated books, an easy mark for those who would care to follow up his little incursions into the region of parody. He is a toothless wolf now, and recent events in the horticultural world appear to have soured him and others. But drawing the canine teeth does not purify the heart.—J.

MY COTTAGE GARDEN.

(Continued from p. 499.)

When I first took possession of my garden, with more haste than ultimate speed, I commenced a reform after my own fashion. One naturally has a desire to cultivate the flowers or vegetables one likes best; there were some old stools of Phloxes, a bed of Pansies of the old sorts, pale blue, lilac, &c., a variety of Roses on their own roots, the old Cabbage Rose among them, a variety of tubers and perennials, almost all of which I dug up and threw away; fortunately, some of them declined banishment, notably a patch of the Feather Hyacinth, and the Pansies persisted in coming up; in short, all those plants that delight in a moist situation refused to quit. I at that time paid no attention to their wishes. I had a preference to the Dianthus tribe, especially Carnations and Picotees, Stocks, Zinnias, and several annuals that delight in dry situations; I therefore began with Carnations Pinks, Indian Pinks, and others before mentioned. Alas! I was wrong altogether, but it was a year or two before I discovered my error.

Now, one of the chief reasons of failure was unsuitability of situation, not unsuitability of soil; that is light and rich and would grow anything, but a very short distance below, water may be found that is in the gravel about three spits below. All this is a vast encouragement to vermin; slugs, snails, and caterpillars delight in moist places; hence, these made short work of all the Dianthus tribe; and in wet seasons Carnations that had eacaped the slugs rotted at the base. I endeavoured to meet these obstructions by soot, lime, and all the devices so well known by growing in pots—endless trouble where you want a show of hardy kinds in the borders, and to do so are obliged to sink the pots in the ground. As to Roses, the garden suits them very well, and the few I began with were standards, but I have found that the moisture below only encourages the growth of the Brier shoots, so that in a couple of years they failed also. I have discarded standards for a few or their own roots, and a fine Maréchal Niel only lately planted is growing as fast as a Rose can grow. Besides that, I have a Baroness Rothschild, which seems to me to be the finest Rose of all the new kinds, so that Roses do very well; at the same time I do not care for more than two or three. The Rose most adapted to a cottage is the China; it grows almost anywhere, it may be trained as a climber, and may be made to bloom at any time with a slight check and the application of a little manure.

It will now be perceived that a return to the old plants and flowers was inevitable; therefore, the bed of Pansies increased, and sometimes they are in great force. I have most of the first-rate kinds among them; the International, one of them a rich plum colour, is the finest I have ever seen. The treatment of Pansies in the southern counties requires modification as compared with some accounts given in Gardening Illustrated. The chief sowing should be the middle of September. If sown in August they come on too fast, and by planting out time are weak from being crowded in the seed-pans. I have sown, however, at all times with success, and have sown in spring, but it is not easy to save the young plants in summer, even though they be well shaded. I have had individual plants two and even three years in the same place of the old sorts, but the Pansy has become by extreme cultivation a much more delicate flower than formerly. Some of the notices of them in Gardening Illustrated have proved valuable, and I have availed myself of them. I have also replaced the Phloxes and added Pentstemons; both delight in the situation. Having but limited room, there are only three or four of each. Both grow to immense plants, especially the Phlox. I have four colours: crimson, salmon, white with carmine eye, and white. Clematises also are very healthy.

Being resolved about having Carnations, I had a small house put up for them 12 ft. by 12 ft., where I can have about 20 plants. These are both in the ground and in pots sunk in the ground; the house has no stage, it merely covers the plants; and I began with the French Perpetuals. The same plants are in their third year, and have been in summer masses of bloom. They will not last another year, but measures have been taken to replace them with Perpetual Picotees. They look very well yet, but winter

has not done its work, and I hardly think they will be worth going on with. I have not decided whether they do best in pots or in the ground; the chief care with them is to give as much air as possible, or they draw very rapidly; not to give much water in winter. A top dressing of old manure is almost sufficient to keep the ground moist, and above all to keep away slugs by dusting all round the plant with Tobacco powder. As to the soil, it had at first a barrow-load or two of fine yellow loam from a neighbouring forest and plenty of old manure; these appear sufficient. There is a single shelf in this house with a few hardy greenhouse subjects; to have more delicate kinds would not suit the Carnations. There are three tuberous Begonias (pink, scarlet, and orange), four Primulas, one Lantana, several Fuchsias, a Coronilla, a Gazania, a Schizostylis now in bloom, and these agree well with the treatment, which is door and ventilator open as much as possible, and no artificial heat.

Besides flowers, I have in my garden two stands of bees, and sometimes have a dozen stocks, but the last year or two has played sad havoc with them, and the wax moth has proved very destructive, as it does when they are weak; they have every advantage of situation, for up the river they have clear ground for miles, without a house visible.

Now for the moral of this simple history, and I have found by experience the truth of it. When you come into a strange garden, do not hurry to discard the flowers you find in it, and also let your first care be to find out what will grow best in it. W. T.

Dorset.

NOTES ON PLANTING.

The ground has been well prepared; the manure, the soil, the elements which compose them, are all about to work together, to combine, and to act, and the trees are to find for their roots a comfortable bed. Do not be in too great a hurry; let the soil settle down for a month at least, and do not plant until then. Make your arrangements, however, so that the planting may not take place later than the middle of March, but before that date, if convenient. If the soil is not ready by that time, and if the ground is not in proper condition, it will be better to defer planting until autumn. It is possible this may not be agreeable if you are impatient and eager to begin, but you will find it more prudent. Even though the soil should have sunk during the summer months, do not be uneasy about it; on the contrary, this will be rather the better for the trees which will be planted in it. We know very well, and you have no doubt often heard it said, that one may plant at any time of the year, and do so successfully; but these unseasonable plantings require precaution, and often a considerable amount of it. To enter into particulars on this subject here would merely swell the size of these notes without enabling us to gain any time by it. We are only speaking, observe, of woody plants, and particularly of fruit trees.

Well, you have bought and brought home your trees; if your planting is of any extent it will last for some time, and you must take care that during that time the roots do not suffer from exposure. Put them "by the heels" in a trench near the planting ground, not burying them very deep, but earthing them up so as to cover the necks well. Group your trees according to their kinds and forms; have some care for all these little details, untie your plants bundle by bundle, and carefully place the proper label on each kind. These may appear too minute precautions; but they will, in the first place, facilitate the work, and, in the second, they will prevent your eating one kind of fruit under the impression that you are eating another, and they will also save you from being bewildered in a maze of mistakes which careless labelling is sure to lead to, and which it is not easy to correct afterwards.

In the next place, you have to provide a position for each tree. The ground having been already fully prepared, all you have to do is to make holes just large enough to contain all the roots easily; and, although the soil has been manured, you may throw into the bottom of each hole a little more decomposed manure, and cover it with a few inches of soil. In the meantime, moreover, the trees should have been trimmed—that is, have had the roots pruned a little, and the unsound parts removed. Then dip the roots in water, or, if their size will not allow of this, water them with a rose watering-pot; immediately afterwards cover them with well-pulverised soil.

Arrange the trees with taste and regularity, and do not place them at random, one standing to the right and another to the left. Generally, in order to have two guiding points, a tree is planted at each end of the line. That is one way; but still there is need of great care and a good eye. It is better to use a surer method: lay a cord from one end to the other; as, in digging the holes, the soil is thrown out on each side, the cord does not meet with any obstacle, and shows accurately the proper place for each tree; and, although it may not be so flattering to one's vanity as to be able to do it by the eye alone, it is sure to be correct, and that is the main thing. It is needless to say that two men at least are required to plant a tree—one to hold it in its place, and the other to cover the roots with soil. If you plant wall trees, let the graft be turned as much as possible towards the wall, so that the wound which was made in cutting off the heel may be sheltered from the sun; these wounds, moreover, are never very pretty things to look at. But, in the first and principal place, arrange the tree so that the spurs which you will have to prune by-and-by may be conveniently placed.

In planting, let the graft always be some inches above the surface, especially in the case of Apples grafted on Doucin and Paradise stocks; the colder your soil is the more closely you must look to this. If buried, the graft might root, and thus your object would be defeated. The digging and the manuring, and even the space which the roots occupy, will all have raised the ground somewhat; but that is only temporary; a subsidence will gradually take place, so that after a time the tree will be in a hollow, while if you have made allowance beforehand for the depression which will follow, your tree will settle to just where it ought to be, that is, to the level of the surrounding ground. If the soil is dry, as soon as the planting is finished, water well. In order to complete the work properly you will, about the end of March, cover the ground about the bottom of the stems with a couple of inches of half-decomposed manure.

Moles in Gardens.—I was pleased to find that the useful little animal the mole, Hount as it is called here, has at least one friend besides myself in your correspondent "B. B." Having many acres of market garden on a rich sandy soil, I find moles very useful in eradicating the large earthworm which does so much damage to the early spring crops, though I must admit it is vexatious to see the drills of young Onions, &c., ploughed out and left to perish in the sun and wind, but I always find the best crops where the mole has burrowed.—B. F.

VEGETABLES.

Chicory.—Chicory, or Succory, as it is sometimes called, does not appear to be very extensively cultivated now-a-days, a circumstance which may be accounted for by the fact that it has been supplanted by its near relative, the Endive, which, on account of its finer appearance and milder flavour, has become the greater favourite, both for market and general purposes. The Chicory possesses, however, many meritorious points, which should recommend it to more general attention than it now enjoys. It is of easy culture, is not at all fastidious as to soil, and may, therefore, be grown largely by those who cannot devote much time or attention to the culture of choice salading. Even where Lettuces and Endive are extensively grown, Chicory should find a place, as its addition to the salad bowl imparts a piquancy which cannot well be obtained by any other ingredient. It is largely used and is much esteemed as a winter salad in many parts of France, and, in common with the Dandelion, it there enjoys the reputation of possessing peculiar blood-purifying principles. It is often, however, eaten alone, and liked by those accustomed to its use. It should, however, in a general way be mixed with Lettuces or Corn salad. If seed be sown in well-cultivated land in March, good roots will be formed by autumn, which, if lifted during winter and placed in any dark cellar or Mushroom house in common soil, will soon yield good blanched heads of leaves fit for salad.

Root and Flower of Chicory.

Rosette Colewort.—There is no more delicious vegetable than the Colewort when well grown, and the great wonder is that so few take the trouble to ensure a good supply of them throughout the winter months. Seed sown in July, planting out the young plants in September, will give nice young heads by the winter large enough to do good service, but not so much turned in as to endanger their rotting. A good plan is to plant between the rows of Potatoes, pulling up the haulm of these latter before so doing. When the Potatoes are dug a little extra soil will be turned in around the stems of the Cabbages, and the stirring of the soil in taking up the Potatoes will do them good. Ground where a crop of early Potatoes has been lifted is, however, best, as it is sure to be in good, free working order. The subject of the present note is an excellent kind, of very moderate growth, and much hardier than the other varieties of this useful esculent.—J.

Rhubarb Roots for Forcing.—The best-sized roots for forcing are those about three years or four years old; they can easily be taken up and moved anywhere where a little artificial heat can be secured. Large old roots cannot be moved without a good deal of muti-

lation, which weakens the produce. With a temperature anywhere between 45° and 60° success will be certain; of course the temperature should be regular and steady; the plants should not be overheated one day and starved the next. I know a baker who always grows beautiful early Rhubarb in a shed adjoining his bakehouse; the wall of the oven abuts against the shed, and keeps up a steady heat. Strong roots may be taken up and packed in old deep boxes, baskets, or cement casks; these could be moved anywhere where warmth can be had. I always think early Rhubarb that has been grown in twilight or partial darkness is better in colour and more delicate in flavour than where fully exposed to light. When grown in an atmosphere charged with ammonia from rank manure the flavour is generally unpleasant. This, however, can always be obviated by throwing the manure into a heap, and when it heats well, turning it over, shaking and mixing it well together. This should be repeated if the manure be fresh from the stable in about a week or ten days. In places where leaves can be obtained these should always be raked up in autumn and placed in a stack for hotbed making, covering them with straw or litter, to keep the wind from blowing them about. With a supply of leaves and a little manure, to hold them together, a station for forcing Rhubarb may be made in any out-of-the-way corner. It may be either oval or round, but it should at least have a regular outline. Having decided upon the position and its size, drive in a few stout, rough stakes, 18 in. apart, leaving them, when driven in securely, about 3 ft. 6 in. to 4 ft. out of the ground. Fagg-wood or rough branches of any kind may be entwined between the stakes, so as to form a substantial wattled fence round the station; and outside, against this, the fermenting materials (leaves and manure in about equal portions in the shape of good substantial linings) should be placed. The roots of the Rhubarb should be packed nearly close together inside, and should have all the interstices filled up with fine soil. They should have a good watering with tepid water to settle them, and the top should be covered with hurdles, deeply thatched with straw, leaving a clear space of 18 in. or so between the roots and the roof. I have forced good-flavoured Rhubarb in this way without much trouble or expense. When a good supply of roots is provided, a very small amount of ingenuity will contrive some mode of forcing them. Roots that have been forced, if not gathered from too severely, if sheltered somewhere till spring, will divide into a number of crowns; and if planted out on good land, 2 ft. apart, will make excellent plants again in two or three years.—H.

A Cottager's Experience of Potatoes.—I think the remarks of "T. S." on this subject are very misleading, because he does not mention either the situation of his garden or the nature of the soil. If his soil is very heavy and retentive of wet, we may, perhaps, not be surprised that seven kinds out of nine which he mentions were bad (I presume he means diseased). But if his garden is well away from the smoke of a town, and the soil is at all suitable and in good heart, I think the varieties ought not to bear the blame, but rather the cultivator. We all know that acres of Potatoes on low, wet land have been diseased this year, but we also know that most of the soils named by "T. S." have produced fine crops in ordinary situations, and that this has really been a grand Potato year. Some persons go on growing Potatoes year after year on the same ground until it is absolutely sick of Potatoes, and no matter what variety they plant it is impossible to obtain a crop. In old gardens near manufacturing towns it is perfect folly to attempt growing Potatoes, as the ground becomes saturated with smoke and pernicious gases. As an illustration of this fact I may mention that there are numbers of gardens only 500 yards nearer to the town than mine which will not produce Potatoes worth digging, because houses are too numerous around them, whereas my neighbours and myself can grow not only good Potatoes, but Roses, our gardens being on an open hillside. If "T. S." has nothing to complain of on the score of either soil or situation, many of your readers will no doubt be curious to hear how he accounts for his failure, and also whether the seven varieties branded as bad were failures generally in the midlands.—Burns.

Beurré Clairgeau.

Beurré Diel

Van Mons. Leon Leclerc.

Duchesse d'Angoulême.

Wintering Seed Potatoes.—Amateurs are often troubled as to the proper storing of their seed Potatoes for the winter. The simplest plan is to get a number of bloater boxes, costing one penny each, and cut off 1 in. of each of the thin sides, leaving the stout ends as before. One of these will hold a peck of tubers, and if Kidneys, these should be stood on end, the sprout end upwards. A dozen of these boxes will thus hold about a sack of Potatoes, and that is a large quantity of seed for an amateur. When full these boxes may be placed one on the other, and it will then be seen that there is a free circulation of air passing between each lot of tubers. As long as that is the case tubers have plenty of light, and are kept dry; they will never make growth that cannot be kept sound and robust until planting time. Placed one on the other, twelve boxes would take up but a trivial amount of space in any cool room, and they might be moved now and then, putting the top ones to the bottom, and *vice versâ*.—A. D.

FRUIT.

A Few Good Pears.—The four Pears here illustrated are well worthy the attention of planters either on a large or small scale. They are good for large or small gardens, or for growing for profit or home consumption. Beurré Diel is of the first size and quality, and is ripe from October to December. On some soils it attains a large size, but if flavour be aimed at it is best to grow it on espaliers in the way we illustrated in Gardening a few weeks ago. The tree is a free grower and a good bearer. Van Mons Leon Leclerc is one of the finest Pears in cultivation. Grown as a pyramid, it yields large crops of the most exquisite flavoured fruits, which ripen from November to December. It is a grand market Pear. Doyenné du Comice is one of the most productive of Pears. In some cases the fruits exceed 1 lb. in weight. We have indeed at the present moment before us a photo of five Pears of this variety, which we are told weighed in the aggregate 4 lb. 3 oz. It is a well-tried kind, which can be well recommended for small gardens. It is fit for use during November and December. Duchesse d'Angoulême is one of the best market Pears grown. It does well on walls, espaliers, or as a standard, and bears large crops of fine-flavoured fruit, which bear carriage remarkably well, and always command a ready sale in the market. Beurré Clairgeau is a Pear of the first quality. The tree is a strong grower, but never requires much pruning. It generally bears a heavy crop of fruit, either on walls or when grown as a pyramid.

MANURING FRUIT TREES.

The importance of manuring cannot be overestimated by those who desire to have healthy trees and good sound fruit. After a tree has thoroughly matured its produce, it is much exhausted and requires nourishment; it is therefore in the best condition to benefit by a judicious application of well-rotted manure. When the juices are no longer absorbed by the fruit, they are directed towards the buds containing the embryo crop of the following year, and on the fact whether such buds are well fed or starved depend both the quality and quantity of the future fruit. Any one who is in the habit of observing the manner in which the same varieties of fruit are grown in various gardens cannot fail to have noticed a great diversity between those which are well grown and those badly grown, some being fine and abundant, others scanty and inferior. Now, it should be borne in mind that trees continue to derive nourishment and support from their roots during the whole winter; in fact, they are storing up vigour and strength to carry them through the trying period of blossoming and setting. This is especially the case with Peaches, Nectarines, Pears, Apples, &c. Unsuccessful setting and stoning, and consequent failure of the crop, are too frequently attributed to bad spring weather or late frosts. The real cause of these disasters must, however, be

sought for, for the most part, in weakness and want of vitality—the result of bad and injudicious feeding. Proper mulching in autumn or winter would have done much to supply these deficiencies. The manure should not be (as I have often seen it) heaped round the bole of the tree (perhaps for a considerable way up the stem), thus encouraging the growth of suckers from the original stock, and doing mischief instead of good, but a small portion of soil should be removed from the roots as far as they extend; the manure may then be applied, but not allowed to come in direct contact with them, and the soil should be raked back over the manure. By this process the roots are induced to come to the surface for their food, and become matured by the warmth of the summer sun. The manure should be good material, containing nourishment in a soluble state, whose beneficial substances can be washed down by rain or artificial watering. I repeat that the manure should be good. Too often it is rendered poor and useless by over fermentation. Manure is best rotted by means of slow and moderate fermentation. If the heat be too great, the ammonia is driven off and the manure becomes littery, dry, and inert, and consequently of little value; but when it is properly fermented, the ammonia remains absorbed, and is nutritious and highly beneficial. Trees derive very little good, if any, from unfermented manure. To heavily manure a tree every third or fourth year (the common practice) is not advisable; it should be done moderately every year. Nature herself points out to us the best season for this top-dressing. She spreads a thick litter of fallen leaves over the roots, thus giving nourishment in autumn and protection in winter, while in spring and summer a carpet of green grows up around the trees, thus preserving moisture and preventing evaporation. So should we in like manner in autumn and winter feed and protect and in spring and summer top-dress, to retain the dews and rain, and to prevent dryness. W. N.

Improving Weakly Fruit Trees.—Well-managed trees are always a redeeming feature, even when other matters in the garden furnish evidence of niggardliness or neglect. No doubt cold springs and other unfavourable climatal conditions exert at times a prejudicial influence, but well-managed trees, that have a sufficiency of healthy roots are never permanently crippled, however much they may be temporarily checked by unfavourable weather. Keep the roots in a healthy, growing condition, and the branches, if properly cared for, will soon recover their natural vigour, There is no better way of keeping trees in health than by putting new mould about their roots; and this is a good time to do such work. It often happens if a watchful eye be kept on the trees, and the first symptoms of failing health noted, that some new turfy mould placed about their roots brings them into healthy fruit-bearing condition, instead of going from bad to worse, until ultimately they have to be removed to the rubbish-heap. It is only another example of the truth of the old adage, "A stitch in time saves nine," and not only so, but it saves a good deal of heart-burning besides, as it lowers a man, not only in his own estimation, but also in the estimation of others, to have his trees in bad health from causes that ought to be under control. There are some places where new turfy mould is difficult to obtain, but something might be done—some effort made—at least to shift the responsibility of failure—if failure there must be. A very large number of fruit trees die annually, or are removed incurable, that might have been restored to health if new turfy mould had been placed round their roots in time. But the work should be done carefully, and, if possible, without unnecessary exposure. In carrying out the details of such work, one must be guided in some measure by the condition of the trees, the position which they occupy, and the quantity of new mould at command, but the more of the exhausted soil we can remove, supplying its place with fresh, the better will it be for the trees, and the longer will they live and bear good fruit. I need hardly mention that all bruised, broken, or unhealthy roots should be pruned away. —H. D.

Mixed Cropping in Orchards.—In this part of Kent an extensive area is devoted to orchards which are cropped on the mixed plan. In this way the rows of standard Apples and Pears are planted at double the ordinary distances apart, and rows of dwarf-spreading bush Apples or Pears are planted alternately; these again have rows of Kentish Cob nuts or Filberts planted between them, and Gooseberries or Currants in the intervening spaces. Under this system good crops of some of these fruits are ensured in all seasons, and as Gooseberries are mostly gathered green, the shade, while protecting them from frost, does not injuriously affect them. The Black Currant is also in great request for preserving purposes. The bush-trained Apples, Nuts, &c., are kept down quite low, and form open, wide-spreading heads. The centres of standard trees are well thinned out, but the outer young wood is left tolerably thick, forming a regular umbrella-shaped head, and the crops they bear amply testify to the suitability of the practice. Grafting and double grafting of approved market sorts are largely practised in this district, and on our strong, clayey loam, resting on ragstone foundation, the trees attain large proportions, their stems being more like those of forest trees than of ordinary fruit trees. Cherries thrive best in the lighter soils on the elevated portions of hillsides.—J. G., *Maidstone*.

Turquoise-berried Vine.

THE TURQUOISE-BERRIED VINE.

(VITIS HETEROPHYLLA HUMULIFOLIA.)

This has become near London a universal favourite as an ornamental climber or trailer, and indeed few ornamental Vines are more beautiful than it is in autumn. The annexed illustration represents both fruit and leaves about half their natural size, but unfortunately does not convey any idea of the delicate colour of its oblate fruits. It grows well in the shade at the end of a cold greenhouse, and it would probably fruit well out-of-doors, but our feathered friends would soon dispose of the berries. It is readily propagated by layering and by means of cuttings made of the ripe wood, as in the case of the Grape Vine. This Vine, we believe, was distributed a few years ago by Messrs. Veitch & Sons, of Chelsea, although it has for many years been known in English gardens.

TOWN GARDENING.

Pinks (Indian and Japanese.)—Hardly anything will be found to stand the smoke and dirt of towns so well as these. Though really perennials, and having the power of being perpetuated by cuttings, they are better raised from seed every year, as even as if they would stand the winter they always look very straggling and untidy the next year, but this trying season nearly always proves fatal to them. If you have a frame and want early blooms, sow the seed in boxes of loam, leaf-mould, and sand in March, and prick off and plant out as soon as large enough; a gentle heat will cause the seed to germinate more quickly and freely if early in the season, but they will do very well in a cold frame early in April. They may, however, be sown out-of-doors in April either in nursery beds or where they are wanted to flower, with almost as good results as by the more troublesome method. Of course they will not bloom quite so early in this case, but the difference will not be much. Do not buy, as a rule, cheap packets of seed, but go to a good shop and do not grudge 6d. or 1s. for it. The best double Indian Pinks should be obtained, and some of the finest flowers come from the Dianthus Heddewigi and diadematus classes. The Chinese or Japanese Pinks are single, and the new Eastern Queen and Crimson Belle, sent out by Messrs. Carter, are extremely beautiful. Indeed, in our opinion nothing can surpass these last for effect in bedding. They should be treated exactly in the same manner as the Indian Pinks; plant out 6 in. or 8 in. apart, as they will not grow quite so freely as in the country, and tie up the flower-stems to neat stakes. All should have a rich soil; good loam enriched with some well-rotted manure is about the best. Give them a sunny situation.

Pyrethrums.—There are now two distinct classes of this plant, both of which are almost equally suitable for the town garden. The first is the old Golden Feather, or Feverfew, grown only for its elegant yellow foliage, and now so largely used in bedding out. The other class is grown for its flowers, which are very bright in colour and showy. This grows to a height of 2 ft. or more, and is treated as a herbaceous perennial. There are many named varieties now to be purchased. The Golden Feather should always be treated as an annual. Sow the seed in light soil in March or earlier, in a little heat

if you can. Prick out 1½ in. apart in boxes, and grow on in cold frames or under glass. Plant out at the end of May from 4 in. to 8 in. apart; 6 in. is a good medium. It will grow in almost any soil that is light and rich; while young, boxes filled with spent hops in a decayed state suit it admirably. When in the beds, keep all blooms picked off as they show, for they are anything but pretty, and take the colour out of the leaves. The flowering Pyrethrums should be purchased in spring, as roots; the price is from 4s. to 6s. per dozen for good named kinds. A good selection of varied kinds would be Andromeda, lilac-rose; Aurora, creamy-white; Brilliant, rosy-purple; Candidum plenun, white; Delicatissimum, bright rosy-lilac; Emile Lemoine, purplish-crimson; Fulgens plenissimum, rich carmine; Le Dante, shining rose; Michael Buckner, rich rosy-crimson; Niveum plenum, pure white, very double; Roseum plenum, rosy blush; Solfaterre, sulphur, golden centre. These are very useful for cut flowers. Give them a deep, rich, well manured soil and plenty of water, and they are sure to do well. When the flowers are dead, cut down the stems and cover with a little litter to protect the plants from frost. In very bad situations it would perhaps be better to divide the plants in autumn, and keep them in a cold frame, otherwise do not disturb them till spring.

Snapdragons (Antirrhinums).—These should be sown early in spring and treated as annuals, as they do not stand the winter well. Sow in February or March in a gentle heat or sunny window, using light loamy soil. Prick off into boxes, and plant out in May. If sown any time in March, and kept growing, all will flower the same year, but the earlier they are started the better.

Stocks.

These sweet and beautiful flowers succeed so well in the town garden that they should be grown by everyone. Nothing seems to stand the dirt and smoke so well. There are many varieties, but for ordinary display the German or Ten-week will be found most useful. These are annuals, and bloom throughout the summer. The light soil usually found in town gardens suits Stocks admirably, as they do not like a damp, heavy, or close soil, and never attain any size in such. They are extremely fond of lime or mortar rubbish, crushed fine, but though the soil is light, it must be rich as well to suit them, so work in a quantity of well-decayed manure when preparing the beds and dig deeply.

Sowing.—The seed of the annual kinds should be sown as early as possible, as the longer time the plants have in which to grow before coming into flower the finer will be both plants and bloom. Do not forget this, as it is a most important point. Seed may be purchased in many different colours, and if sown and kept separately, one or more fine parti-coloured beds may be had; but in most cases a packet of mixed seed, costing 6d. or 1s., will suffice, and many dozens of plants may be raised from such a packet. The best soil for seed sowing is about equal parts of loam, leaf-mould, and sand, rather less of the latter, perhaps. The pot or box must have plenty of broken bricks or crocks for drainage, as if this point is not carefully attended to, the plants are very apt to go off just at the surface of the soil, especially in the early part of the season. On this place a thin layer of moss or spent hops, and then place the soil, sow the seed thinly; to this end wide boxes are better than pots. When sown early, a frame with a gentle heat of 60° is the best place for the seed-pan, but a greenhouse or sunny window will do, and by the end of March it will be safe to sow in a cold frame; but always sow early if you can. Keep the box close to the glass and in as much light as possible after the seedlings are well up, though, when young, they must be shaded from hot sun.

Transplanting.—When the young plants get the second pair of leaves, prick out into boxes in cold frames or protected beds in good rich soil (two parts loam, and one part each of leaf-soil and old rotten manure with some coarse sand is best now) about 2 in. or 3 in. apart. Here they may remain until it is time to plant them out. This should be carefully done; choose cloudy weather if you can, as they are very apt to flag badly in sunshine after replanting. Give them a thorou h soaking an hour or two before removing them, and take up singly with as much soil round the roots as you can get, and loosening or disturbing the same as little as possible. Plant 8 in. or 10 in. apart, pressing the soil firmly about the roots; give another good watering, and if the sun shines hot and strong within a few days afterward, they must be shaded. In planting discard all the extra tall and strong growers; these will generally be found to have long, coarse, and forked roots instead of a nice tuft of fibrous ones; such plants always turn out single flowers, whereas the aim of the gardener is to have only double ones. These are mostly rather small and compact growers, and such only should be planted. It is the practice of some to leave the plants growing in not much soil, and rather cramped at the roots in pots or shallow boxes until the flower-buds show, when they can easily be distinguished, the single ones having long pointed buds, with four equi-distant cracks or marks down the sides, and the double ones full, round, crumpled-looking buds. This is a very good plan, though the plants may suffer a little by being cramped and removed after the flower-buds show, a thing always to be avoided with nearly everything, but we have known very fine plants that were so treated; to avoid injury as far as possible, put the plants in their places as soon as ever the difference in the buds can be seen.

Situation.—The bed for Stocks should have an open and airy position, exposed to the full power of the sun. The plants should be plentifully watered in dry weather, especially when coming into bloom, and each should be supported by a neat stake to prevent its being blown about by winds. Treated thus, German Stocks are, in June and July, a sight not often seen.

Virginian Stocks.—Where there are no conveniences for early sowing under protection, the Virginian Stocks are useful; these are hardy annuals, and may be sown out-of-doors in March or April. But these are not nearly so fine as the German; in fact, not to be compared with them. Ten-week Stocks may be sown out-of-doors in protected nursery beds at the end of March, but, like the German, they are the better for a little care and early sowing.

The Intermediate Stock.—This is a great favourite, and produces larger heads of bloom than the German, and is biennial. The seed should be sown exactly the same as described above, but in August or September, and the plants should be pricked off and potted singly if possible, and kept through the winter in a cold frame, then planted out in spring. These should be put wider apart, as they are larger growers. If sown early in spring these will flower in the autumn. The Emperor and Queen Stocks are perennials; they are very fine, but a town winter generally kills them. The Brompton Stocks, too, are fine; they are biennials, like the Intermediate.

Sunflowers.—We cannot say that these are at all beautiful, but they are very effective, in a manner, and what is more, they will grow and do anywhere. They will, of course, grow and flower much finer in a deep and rich soil than in a poor one, for they are terribly greedy things, and can scarcely be overfed. Sow the seed out-of-doors in March or April, thin out, and transplant if needful. We used to have these and Marigolds come up all over the place by thousands in spring, self sown, and where they have once got a start, they will do the same; and these self-sown plants always do better than any others.

Verbenas are too well known to need comment. It is difficult, if not impossible, to keep these through the winter in a town, the only way being to get a few strong cuttings struck early, and potted off singly, and well established before winter. The shoots produced by these are taken off in spring and struck in heat. Old plants taken up from the borders inevitably die, and pots or boxes of young cuttings taken in September, as is usually done, generally perish also; so that you must either get a few strong young plants in 5-in. pots to keep through the cold weather and take cuttings from in the spring, or purchase afresh every year. If the former plan is followed, the cuttings should be growing when taken off, about 3 in. long, and March or the early part of April is the best time. Put them pretty thickly in light soil in pots or boxes (leaf-mould and sand rather rough is as good as anything for soil), and place in a gentle, sweet hotbed of about 70°. When rooted, admit air, and pot off singly when ready; or they may be planted 3 in. apart in cold frames or pits, with a glass or calico covering, and be left there to harden till planting out time. But, unless when distinct colours must be had, and if a little heat can be applied, we recommend the use of seedlings, as they are, when well grown, so much more vigorous in growth and flower than plants from cuttings. Get a packet of mixed hybridised seed from a good firm, and sow it as early as possible; if later than the middle of March, the plants will be behind the other bedding things. Sow thinly in well-drained boxes, using leaf-mould and sand in rather a rough state, not sifted, only lumps picked out, and left loose and rough on the top. Place in a good bottom heat of 70° or 75°, and keep close till the seeds have germinated; they must then be kept close to the light, not be over-watered, and have a fair supply of fresh air. As soon as the plants form the second pair of rough leaves, pinch out the points beyond, and when they shoot again prick off singly. It is better if they can still have a little heat, though they will do at this stage if pretty strong in a cold frame. Keep close for a few days and then admit plenty of air. Plant out where required in May. They would do rather better if potted separately when fit, and grown on till planting-time in small 3-in. pots. These plants are rather particular as to soil, and will not do well in a damp, cold, and heavy material. They delight in a free, rich, light soil, into which their long, delicate, and fibrous roots can easily penetrate, so that the best material they could have would be a light, sandy, and peaty loam, mixed with a good proportion of leaf-mould and some old manure. If you cannot get peaty loam, mix one-third or half of good sandy peat with it. The bed should be deep, at least 18 in., and well drained. But good Verbenas can be grown in any wholesome light soil if it is enriched with plenty of leaf soil or well rotted manure. From 1 ft. to 18 in. is quite close enough for strong plants, and when they begin to grow the shoots should be well pegged down with hairpins or hooked twigs regularly, so as to cover the beds with an even mass of foliage and flowers. Thus treated, we have had beds of Verbenas in which not an inch of soil was to be seen, all one carpet of rich green leaves, and the foliage in turn almost hidden with immense trusses of flowers; and any one can do the same. A great deal has been said and written about Verbenas in pots, but they are a great deal of bother, and do not grow half as well as in beds, at least that is our experience, and in a town especially we know they will not do any good in this way.

Zinnias.—These are now far superior to what they were some years ago. They are now really handsome flowers, especially the double ones, and the colours, though not brilliant, are glowing and intense. Sow in March or the first week in April in a good, rich, light soil, and place the box either in a cold frame or very gentle heat. Prick off singly and pot when fit, the main thing being never to let the plants receive a check in any way. Do not over-water, as they are liable to damp off at the collar. Plant out in May in deep rich soil, and when they grow, tie up to neat stakes. They must have a sunny situation. These have one great advantage over most other annuals, viz., that the flowers, instead of soon fading, continue in beauty for weeks without in the least deteriorating.—B. C. R.

Mildness of the Season.—In a garden near Esher Station, Surrey, December 11, was picked a bunch of Violets, Primroses, Polyanthus, and Cowslips, and the lowest the thermometer registered on the nights of December 9 and 10 was 42° and 45°, and on June 9 and 10 last, 40° and 45° showing it was colder in June than December.—F. H. S.

—— As an instance of the mildness of the present season, I might mention that I have during the past week picked flowers of Blue Nemophila from autumn-sown seed. Primroses and Violets are in bloom in many gardens about here.—W., *Christchurch.*

House and Window Gardening.

CYPRIPEDIUM INSIGNE AS A WINDOW PLANT.

Let it be known for the benefit of those immediately interested in the culture of plants in rooms that there is at least one of the interesting family of Orchids that may be easily and satisfactorily grown without the aid of a heated glass structure during the winter months. The species of Lady's Slipper here mentioned is as easy to grow as many of those soft-wooded subjects which form the chief delight of the small grower, and with ordinary care will last in good health in the same pot for years. The plant when doing well forms a mass of lance-shaped, leathery foliage, of a fresh bright green, and which may be as easily sponged and kept free from dust and other impurities as those of the India-rubber. It is therefore an easy matter to keep it clean and in good health, and I should add that washing the leaves, provided that the operation be carefully conducted, cannot be too frequently performed, as if the pores get clogged with dust, the foliage assumes a sickly hue, and the roots get into an inactive state.

During the winter season a warm dwelling-room suits it well, and if properly treated it will, at the beginning of the winter, just when flowers of any kind are most welcome, commence to throw up its curiously formed blooms, which, in the dry air of an apartment, last a long time in beauty. The roots are fleshy, and liable to decay when either too much water is given or drainage is not so free as it should be. At the same time the soil must be at all times maintained in a moist state, so that in the case of this plant waterings should be light and often enough to prevent the compost from quite drying out, and I need scarcely add that when the plant is making its growth in the summer much more water will be needed than when it is in a state of comparative rest, although I should observe that the resting process so often mentioned in connection with Orchid culture does not apply to the Lady's Slipper, which quickly loses its freshness and vitality if the soil is allowed to become and remain dry for any length of time.

From the end of May to the middle of October there is no better place for this plant than a cold frame or handlight in a north aspect, the comparatively cool and moist atmosphere being just what is favourable to a healthy development of crown and foliage. Where, however, such accommodation does not exist there need be no hesitation in retaining the plant in the dwelling all through the summer months, placing it in a light position, and frequently, in fact daily when the weather is hot and parching, sprinkling overhead with clean water. As before stated, a plant will last some years in the same pot without needing to be shifted, but should the grower find that his specimen has attained sufficient luxuriance to warrant its removal to a larger receptacle, let him take a pot one size larger, fill it half full of drainage, laying thereon some Sphagnum Moss, and re-pot in a compost of fibrous peat, mixing therewith a little Sphagnum and small pieces of crock. Keep the crowns well up above the level of the pot, and press the soil in firmly, but gently. J. Cornhill.

Byfleet.

TREES AND SHRUBS.

CRANBERRY CULTURE.

There is no fruit so acceptable during winter for tarts as Cranberries, yet how seldom do we see them grown, a circumstance which may arise from a mistaken notion that they are difficult to cultivate, or from an idea that building tanks in which to grow them is expensive. The finest Cranberry beds in the kingdom, perhaps, are at Ashburnham, in Sussex; yet their construction is most simple. They were formerly fish stews, originally about 12 ft. wide; some Oak stakes 3 in. square were driven into the ground 2 ft. from the side, and on these were nailed 1-in. Oak boards to the depth of 16 in. The bottoms of the beds were formed of brick-bats, in order to allow the water free access to the roots. The best soil for Cranberries is peat and leaf-mould with a good supply of sand; rough peat ought to be put over the bricks to keep the soil from getting amongst them. During the early stages of growth Cranberries require flooding, but more especially should this be done when they are coming into flower; the water should never be allowed to get below the side board. These beds were so arranged that the water from one pipe served the whole by allowing it to pass from one to the other, there being only a Grass walk of 6 ft. wide intervening. It is astonishing how long Cranberries will keep on bearing without any additional outlay. Some of these beds which I renewed had been fifty years under constant cropping, and Cranberries are very profitable, realising readily 5s. per gallon. Those who contemplate forming beds ought first to consider where a good supply of water can be had from; then, selecting a light airy position, but still not too exposed, have a bed of the required width excavated to the depth of 5 ft., and puddled with clay sufficiently to hold water; secure a waste pipe, say 3 in. below the top of the bed; when you require the water higher this may be easily done by placing some clay around the pipe to the required height. It is most essential not to allow the water to become stagnant. Do not plant too thickly, because for a few years they grow rapidly, and if crowded do not bear freely. The variety most suitable to grow is the American Cranberry (Oxycoccus macrocarpus) lately figured in Gardening. A. H.

Caterpillar of the Vapourer Moth

THE VAPOURER MOTH.

(ORGYIA ANTIQUA.)

The caterpillars of this common little moth are sometimes abundant, and they are then very destructive to various plants in gardens, shrubberies, and orchards. Though they do not confine their attentions to any particular kind of plant, they are especially fond of fruit trees, Limes, and Roses. There is not, unfortunately, much that can be done towards destroying this insect; the eggs are not sufficiently conspicuous to make it worth while to search

Vapourer Moth.

for them. The caterpillars are best destroyed by picking them off the plants they are feeding on, or spreading a large sheet or cloth under the trees or bushes and shaking or knocking the caterpillars into it, when they can be easily collected and killed by pouring boiling water over them. Search should also be made for the female moths, which differ very much from the males in general appearance and habits; having no wings, or only the smallest rudiments of them they are quite incapable of flight, and their movements being very sluggish, they are very easily caught when found; but as they are of a dull greyish-brown colour, it is not very easy to detect them. The males can be caught in a common butterfly net; they may frequently be found flitting about even in the brightest sunshine in search of the females. Of course the earlier in the season the moths can be caught the better, as it is very desirable that as many as possible should be destroyed before they have had opportunities of pairing; and if a few females can be killed before they have laid their eggs, the number of caterpillars will be much less. There are several broods of this insect during the summer and autumn. The eggs laid by the females of the last brood do not hatch until the following May, and the first brood of moths make their appearance in June; and from that time to the end of September or the beginning of October there are several broods. The moths are most common in August and September. The caterpillars are exceedingly curious and beautiful, being ornamented with tufts of hair, which vary very much in appearance on different parts of their bodies. When fully grown they spin round themselves a cocoon of silk mixed with hairs, within which they become chrysalides. The caterpillars, when fully grown, are about 1½ in. long; they vary very much in general colour from blackish to pale greyish-blue and white. Their bodies consist of twelve joints, of which the first three, the sixth, seventh, eighth, ninth, and last each have a pair of legs; on each joint are several tubercles, from each of which springs a tuft of long greyish hairs, in addition to which, on either side of the first joint, is a tuft of long hairs directed forwards; these hairs vary considerably in length, and are much thickened at the tips. The fifth joint is furnished with two similar tufts, one on either side; and the eleventh joint is provided with one of the same description on the centre of the back inclined backwards. The fourth and following three joints have on the back of each a thick short brush of hairs, which are all of the same length and generally white or yellowish in colour, but sometimes they are grey, reddish, or nearly black; between each of the brushes is a transverse black line on the back. S. S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

December 27.—Pointing over herbaceous borders and the spaces among bush fruits; sowing Carrots and Radishes under glass; putting young Pelargoniums into their flowering pots; putting in Vine eyes in pit, and plunging them in fresh leaves; putting in another forcing of Strawberry plants, Mint, and Tarragon; washing Stephanotis and Camellias; syringing Azaleas for thrips, using 5 oz. of soft soap to a large potful of water; thinning plantations; beginning to prick over Asparagus land.

Dec. 28.—Digging shrubbery borders; sowing Radishes, Cauliflowers, and Lettuce, in orchard house; also sowing Syon House Cucumbers; potting a few old Calceolarias to make large plants for conservatory; extra-covering Celery; filling up bins in potting shed with manure, leaf-soil, and loam; putting a layer of ashes in cutting pit in which to plunge cutting pots; pruning bush fruits.

Dec. 29.—Putting in Fuchsia cuttings and plunging them in pit in heat; making edges ready for turf wherever the latter has got worn or died away; extra covering seed Potatoes; giving large tree Mignonette a layer of manure as a top-dressing; making a bed in a frame for Carrots, getting in cow manure for Roses.

Dec. 30.—Putting in a few Petunia cuttings and plunging them in bottom-heat; putting in cuttings of Crotons and plunging them in bottom-heat; putting in another batch of Asparagus and taking out first crop; hardening off first batch of Lilacs now in full flower.

Dec. 31.—Putting stock plants of scented Verbenas into heat for cutting; planting some young Gooseberry

trees; also a bed of Peppermint; shifting Pelargoniums, placing them in pits, keeping them cool and dry, and giving them plenty of air; putting Musk into heat, and Mignonette on the back shelf of a cold Vinery; looking round Hollies and Conifers, and dashing a little gas-tar against them to keeping off rabbits; cutting down autumn-struck Heliotropes, to induce them to break before potting them off; pruning pillar Roses.

January 1.—Digging land for Onions; sowing Parsley; also Sweet Peas by hedge side; shifting Nemophilas into 6-in. pots; cutting Alicante and Lady Downes Grapes for bottling; putting in cuttings of Justicias, Chrysanthemums, and Heliotropes; also some White Currant cuttings; putting Forget-me-nots in heat and keeping them at 50° at night; also Seakale, Asparagus, and Rhubarb; giving creepers in conservatory border a watering; tying up frame Lettuces as required.

Glasshouses.

Bedding Plants.—Dahlias, Gladioli, &c., should be stored in convenient places beyond the reach of frost; and this should also be carefully excluded from structures containing bedding plants, which should always, if well rooted, be kept as cool and quiet as possible, as it is by no means advisable to encourage growth in the absence of light and air. Nothing, however, is so injurious to bedding plants at the present season as damp; every possible care, therefore, must be taken to prevent drip from the roofs of such houses or pits which may contain them. All dead and decaying leaves, &c., must be removed whenever necessary, and every opportunity taken which the state of the weather may afford to admit fresh air, to render the plants as hardy as possible. During dry or frosty weather, get, as soon as possible, some manure prepared, ready to be applied to the flower beds and borders as soon as the spring-flowering plants and bulbs are removed. Any work that can be done that will forward operations in the spring or summer, when one does not know what to turn to first, should now be attended to. The exhibitor of florist flowers will have plenty to do in preparing his stands and boxes in which the stands or trays are conveyed to the exhibition; they may be painted and varnished, stowing them away when dry where they can be kept free from dust. Labels may be made and painted. Some persons like to write on dry paint, but wet paint is best, and the labels may be painted a second time before they are used. Sticks may also be prepared of various lengths and thicknesses; paint them green, and then dry them and tie them up in bundles ready for use. Pegs for layering Carnations and Picotees may also be cut out of any branches that may be most convenient. Beech and Hornbeam are amongst the best for this purpose. Failing these, wire, about the diameter of that used for ladies' hair-pins, answers well.

Fruit.

In this, the last calender of the year, it is but natural that notice should be made of those fruits that have in spite of bad weather been up to the usual average, both as regards quantity and quality, and though as a matter of course the remarks about to be made only apply locally, yet they may serve generally as some slight guide to the inexperienced who may be contemplating fruit tree planting. At least the trees named in the list will possess the merit of hardiness, and no kind is mentioned except those which have given a fair average crop, and which are of passable quality. They are as follows: Apricots—Musch Musch and Moorpark. Apples, dessert—Devonshire Quarrenden, King of the Pippins, Court of Wick, Cellini, Margil, Ribston Pippin, Court Pendu Plat, Cockle Pippin, and Lemon Pippin. Kitchen Apples—Lord Suffield, Hawthornden, Golden Noble, Blenheim, Lord Derby, Yorkshire Greening, Wadhurst Pippin, Kentish Fillbasket, Wellington, Warner's King, London Pippin, Winter Colmar, and Hambledon Deux Ans. Gooseberries—Red Warrington, Companion, Rough Red, Rumbullion, White Champagne, and Whitesmith. Nectarines—Pitmaston Orange and Downton. Peaches—Early Louise, Early Grosse Mignonne, Royal George, Bellegarde, Noblesse, and Barrington. Pears—Williams' Bon Chrétien, Beurré d'Amanlis, Flemish Beauty, Brown Beurré, St. Michel Archange, British Queen, Beurré Superfin, Beurré Hardy, Fondante d'Automne, Autumn Bergamot, Beurré de Capiaumont, Comte de Lamy, Seckel, Swan's Egg, Beurré Diel, Durandeau, and Pitmaston Duchess. Plums, dessert—Jefferson and Kirk's; kitchen—Early Orleans, Victoria, Pond's Seedling, and Autumn Compôte. In order to avoid such pressure of work in spring, let all manure aud soil wheeling be finished, stakes cut and pointed, labels made, and trees that require it relabelled. Nails can be eleaned, shreds cut, bunches of matting for tying, and small twigs for laying in the new shoots of wall trees—these, together with other jobs that will suggest themselves, may all now be done by way of forwarding operations when the busy time arrives. When the air is dry and free from frost open the fruit-room ventilators for an hour each day. All decayed fruit should be removed forthwith, and it may be worth while to wipe over the finer Pears with a dry cloth, in order to ensure their better preservation. Easter Beurré and Ne Plus Meuris, two kinds of Pears on which we depend for supplies in January and February, are sometimes so specky and subject to mould, that without thus drying they would fail to keep at all.

Bowl of Chinese Miniature Trees.

Raspberries should be planted; for this fruit the ground should be wel enriched by digging into it a good dressing of manure previous to planting; existing plantations of this fruit should be pruned and tied, and, where stakes are used, renewing such as are decayed; few crops require, or will better pay for a liberal use of manure than Raspberries. Even old plantations of them that have become weak can frequently be brought round by enriching the ground and otherwise bestowing on them judicious cultivation. One of the principal things to be observed in the case of the Raspberry is never to use a spade amongst them; the greater portion of the roots lie near the surface, and if the spade be employed in digging, quantities of them necessarily get injured; even fork culture should not be too deep.

Vegetables.

Endive and Lettuce.—Plants of these in frames and under hand-lights or bell-glasses should now be well attended to, giving them plenty of air when the weather is mild, but guarding against their getting wet, as they are less likely to suffer from severe frost, when the soil in which they are growing is dry on the surface, than they otherwise would be. When frozen, those in frames should have a mat thrown over the glass when the sun comes upon it, as the effects of being suddenly thawed are most disastrous. Hand-lights and bell-glasses ought to be similarly protected on the south side by means of litter or evergreen branches stuck in the soil, so as to screen the plants. Lettuces at the foot of south-walls may be protected by placing boards before them in a slanting position propped up, so as not to allow them to touch the plants. Endive covered with boards for blanching should, during frosty weather, be completely covered over with several inches of litter, for, if frozen, they will decay.

Celery.—Care should be taken that Celery is not subjected to much frost, or it will not keep so long, however firm and solid the variety may be; for covering material the common Brake is a good material where it is plentiful, or stable litter may be used; but whatever is employed will be found much more effectual if not in absolute contact with the tops of the Celery. To prevent this, take some stout pieces of old Pea sticks and push them down in the rows between the plants, then take some of the longest and straightest of the Pea sticks, or such as have been used for Runner Beans, and tie them lengthways to the upright sticks a few inches above the tops of the Celery; on these place the litter or other material, letting it hang well over the sides like thatch; this will be the best way of protecting it from frost, and costs little more in additional labour than simply placing the material upon the tops of the Celery.

Broccoli is frequently saved from being killed in severe frost by the slight protection afforded by laying old Pea sticks down moderately close upon them, as these break the full force of the cutting frosty wind. During severe frosts, or when there is an appearance of snow, cover Parsley with shutters or boards, if no frames are at hand, not allowing the covering material to absolutely touch it.

Chinese Miniature Forest Trees.—A correspondent asks how these wonderful little trees are produced by the Celestials, and as I have had some success in the process myself I will describe my lessons and experience in the art accurately from notes taken at the time. On Christmas Eve, 1870, a family gathering took place in the house of a friend of mine, who had travelled a good deal in China and Japan, and the conversation turning upon Genghee horticulture, my friend was describing a little Oak tree he had seen 59 years old and 3 in. in height. An incredulous smile from all present irritated my friend to such an extent that, summoning a Chinaman, or boy (you can never tell whether a Chinaman is 10 or 100), he explained at some length the subject of the conversation. The pagan child looked up with that bulbous vacuity of countenance which inspires implicit confidence, and remarked, "Allee light; Johnny sabe. Give Johnny one piece olange (Orange), lilly buck Acorn." He was supplied with an Orange and an Acorn from the hoard of one of the junior members of the family, and in stoic silence set to work. He cut a hole the size of a shilling in the Orange, and cleverly extracted all the pulp and juice. This empty skin he filled with some Cocoa-nut fibre, fine Moss, and charcoal, just stiffened with a little loam; into this he stuck the Acorn, in about the centre of the Orange peel. He repeated the process with another Orange and a Date stone, and remarked, "Settee olange topside windel," and the Oranges were put on the window-shelf in vases, and the heathen Chinee relapsed again into unconsciousness. For some weeks, when he thought no one was looking, he would creep into the room, and gently water the Oranges through the hole he had cut, and carefully sprinkle the surface that he could get at with wood ashes. At the end of about four weeks the trees appeared above the soil in both cases, and at the same time roots were pushed through the skin of the Orange. Johnny was delighted, and carefully razed the roots flush with the Orange skin (which curiously did not rot), and every week he would cut the roots off close to the peel. The plants became about 4 in. high, and then stopped, becoming gnarled and twisted like a veteran Oak and Palm. At the end of two years and a half the pagan was satisfied; he finally cut off the roots, which were now ¼ in. thick, and produced a most lovely effect, mottling the Orange peel, and having painted the ends of the roots black, he varnished the whole, and declared the growth finished. He was right; the trees never grew again, but until 1878 were quite healthy, and great curiosities. One morning Johnny returned to the land of the sun, and with him disappeared

the Orange "plantation." My friend started another pair, but without success, until, at my suggestion, he placed an Acorn and a Date stone into thumb pots in peat and loam. This was in July, 1879; every six weeks he turns the plants out of the pots, or rather I do it for him when in the way, and we pinch off the roots on the outside of the pots, and re-plant the trees. Though not such a success as the China boy's Oranges, they are nevertheless well matured little Oak trees, 5 in. high (the Date died last autumn), and I hope they will live for many years to come. A different plan I have pursued with considerable success is as follows: I obtained a wide-mouthed jar, and suspended from a card placed over the mouth an Acorn, so that it only *just* touched the water. It speedily grew and threw out roots, and whenever the roots got 3 in. long I shortened them all back. The tree became about 4 in. high and stopped, becoming quite matured and old. It was suspended from the mouth of the jar by copper wires, and the ends only of the roots were kept in water to a depth of about 1½ in. It subsequently died in the possession of a friend, who let the water touch the stem, and so killed it. I hope these directions may prove useful to any of your subscribers taking up this extraordinary form of horticulture.—Girofle.

GLASSHOUSES & FRAMES.

ARDISIA CRENULATA.

Those who have a warm house at command should not fail to grow this plant, as it is extremely useful at this time of the year for window, table, or conservatory decoration. It is best propagated by means of seed, which should be sown early in the year, so as to get a long season's growth. The latter end of January is a good time, but a temperature of 65°, with, if possible, a little bottom-heat, is necessary to get them up well. As soon as the young plants are large enough to handle, prick them out in a pan and tranfer them before they commence to crowd each other into small pots, using a nice, free, light compost, consisting of loam, leaf-mould, and peat in equal parts, adding to it a good dash of silver sand. The Ardisia revels in heat and moisture when growing, but does not attain to a sturdy development, unless exposed to the full influence of light. The best place for this plant is a shelf in a stove or warm house, where it not only gets the benefit of every ray of light, but where it at the same time enjoys on favourable occasions a tolerably free circulation of air. By the end of August, if the plants have been well attended to, they will have filled 2½-in. pots full of roots, and may then be kept somewhat cooler, and may be wintered if so desired in an intermediate house. The following year they may be shifted into 4½-in. pots and treated as before. By the end of the summer each plant will have formed a little standard crowned with dark green foliage, and loaded with bright red berries, and presenting an extremely neat, fresh, and cheerful appearance. The next year they may be shifted into 6-in. pots, but the most useful size is 4½-in.; therefore, a little seed should be sown every year. There is also a white-fruited variety, which demands the same treatment. J. Cornhill.

Byfleet.

Anemone Robinsoniana.—I know of nothing more exquisitely lovely than a fully-expanded patch of this beautiful flower on a bright spring morning. It is a rare British wild plant; I know of its occurrence in Norfolk and Essex, and I believe it has also been found in Kent and Sussex. It has long been cultivated in the Oxford Botanic Garden and in a few other choice collections, and may now be had at most of the hardy plant nurseries, but was practically unknown to the general public till a few years ago, when Mr. Robinson found it growing wild, and, struck with its marvellous beauty, so frequently spoke of its charms, that it became a general favourite.—H. C.

Pelargonium Comte de Morny.—This, although an old kind, is one of the best of zonals for small beds, inasmuch as it is of a close, compact habit and very floriferous. The colour, too, is peculiarly soft and pleasing, and serves to tone down the more brilliant kinds. For pot culture it is very suitable, more especially for late autumn decoration.—J. B.

The Fennel-leaved Fern.—I think "J. C., Byfleet," is mistaken about the name of the above. The Fern which bears most resemblance to Fennel is Asplenium viviparum. —Styan, *Potternewton, Leeds.*

"The Garden Annual."—This book is now ready, and may be obtained at all Messrs. Smiths' stations, through all booksellers and news-agents, and from nurserymen and seedsmen, price 1s. Those who have sent orders for the book, accompained by remittances, are requested to note that it has only been completed a day or two ago; should any delay in getting copies occur it must be put down to the difficulty of getting the number required printed and bound. Orders for the whole of the first large edition were received before a copy was issued to the trade, and another edition goes to press this week. There will be a separate well-bound edition at a higher price for the convenience of those who wish to preserve the volume or have to use it much.

Robinson's Anemone (A. Robinsoniana).

Variegated Jacob's Ladder (Polemonium cœruleum variegatum). — This fine-foliaged plant is not so much used for flower garden decoration as it should be. For a row near the front of a ribbon border, or surrounding a small bed, it is the prettiest plant I have seen. It grows from 6 in. to 12 in. high, and the leaves are thrown out from the centre stem; they are light green and white in equal parts, and in form they are as delicate and handsome as any Fern frond. I call attention to it now because its beauty in summer greatly depends on how it is treated during the cold season. It will live throughout the winter if left in the ground, but when the fresh leaves appear in spring, they are generally deficient in colour as they come green, and want the fine variegation which is their principal attraction. To avoid this, and retain all their delicate lines, it is necessary to lift the plants at the present time and place them in pots, when they should be wintered in a cold frame. The soil in which they are potted should be very light, and they must be kept just moist, but neither wet nor dry, until spring. Old plants generally emit a number of small crowns, from which the plants are increased. They should be taken off in March, and potted singly in small pots, when, if kept close and moist in a frame, they root quickly, and form healthy plants for turning into the open ground early in May.—H.

Geranium Lord Giffard.—Those who may not have this variety should add it to their collection. It is an excellent bedder, the flowers being crimson-scarlet with a clear white eye, habit good, and flowers as freely produced as one could well desire. When I state that it is highly recommended by Mr. Cannell as possessing exceptional excellenee, I can scarcely say more in its praise.—J. C., *Byfleet.*

ANSWERS TO QUERIES

3871.—**Violets in Winter.**—It is very unusual for Violets to lose their leaves owing to such trifling frosts as we have had up to this time. Probably the snow which fell so heavily not long since has brought about this loss of leafage. It will be well to give the plants a top-dressing of Cocoa-nut fibre refuse, which would be better than ashes, and if this be put with sufficient thickness about the roots and crowns, fresh shoots will be early encouraged. We found that Violets (Russian), the Czar, Victoria Regina (single), and the old double blue, Blandyanum (double blue), Belle de Chatenay (double white), and the Neapolitan stood last winter well, but the Double Queen of Whites and Marie Louise suffered a great deal. No doubt it arose less from the severity of the winter than from lack of sunshine to mature and harden the crowns and foliage.—A. D.

3872.—**Roses not Flowering.**—With several large plants of Gloire de Bordeaux, a Rose that does not bloom, it is worth consideration whether it would not be well to rebud them on the best clean wood with other kinds that would probably flower freely enough, and make good robust growth if worked on such robust stocks. As no information is given as to whether the trees are budded as standards or are on their own roots as bush plants, it is all the more difficult to advise. This is a very common fault of those who ask for special information, but do not give some simple, but important particulars. Select next summer some good clean growth, and bud upon it any kinds preferred, putting some half dozen buds of one kind upon each plant.—D.

3875.—**Foxgloves.**—It would appear that some kind of fungus or mildew must be affecting your Foxglove plants, as the complaint of the leaves turning black is an unusual one. We find our Foxgloves are in luxuriant health, the leaves green and vigorous, although transplanted but recently. In your case all depends upon the condition of the hearts or centres of the plants. If these are gone the plants will be useless for next summer, or should they throw up late side shoots these would give but small spikes of bloom. We sow Foxglove seed under glass in April, and get the young plants pricked outdoors when strong enough. These make splendid bunches of leafage, and do not suffer from the weather in any way. If you are apprehensive of losing your plants where they are, it would be well to relift them and lay them in a sheltered spot until March, and then replant where they are wanted to bloom.

3876.—**Insects Eating Ferns.**—The insects that attack your Ferns are no doubt woodlice, as these at this time of the year will feed upon any vegetable substance they can find, but would probably leave Fern fronds at another time of the year for more acceptable diet. If it is not these, then there must be some grub or slug about, but it is most probably the former. They are difficult to catch, unless specially sought for, as they feed only at night, and often if a light appears curl up and become almost invisible. They may often be found in the day beneath pieces of tile or slate, and may be trapped beneath halves of Potatoes laid on or about the plants.—A. D.

3864.—**Covering a Vine Border.**—Covering the Vine border with hot manure a this season was an unfortunate mistake. The young spongioles near the surface were injured, the leaves gave way, and the fruit shrivelled. If the temperature of 60° to 70° named is the night temperature, it is full high for this season of the year. Now the leaves are gone the temperature should be lowered to 50°, or even less, and in future use a little fire in spring, instead of having to fire so sharply in autumn. All Grapes should be ripe now.—E. H.

3873.—**Holes for Fruit Trees.**—Your friend is right; the holes should have been made larger and the soil well worked. In point of fact, I would rather, if the case had been mine, have trenched the ground all over 20 in. deep, cultivated the surface a few years, and then laid it down again to Grass. I do not like planting young trees in old orchards unless this matter is well attended to.—E. H.

3758.—**Ferns for Miniature Fernery.**—"C. B." wishes for a list of Ferns suitable for a small Fern pit. I would advise him to prepare his rockery as would suit his own fancy, as I think no one could give a definite plan for such a small Fernery, only I would say that in making it the rougher the work is performed the more picturesque it will look. Adiantum Capillus-veneris, Asplenium nigrum, A. Ruta-muraria, Allosorus crispus, Ceterach officinarum, Blechnum spicant, Polypodium dryopteris, Polypodium alpestre, Selaginella spinosa, Polypodium vulgare. The following are larger and stronger-growing varieties, retaining their fronds more or less through the winter until new ones begin to shoot up: Lastrea æmula, L. Filix-mas, Polypodium Filix-fœmina, Scolopendrium vulgare, S. v. var. crispum, S. v. var. laceratum, S. v. var. marginatum, S. v. var. multifidum, S. v. var. polyschides. It may not be out of the way to remark that by fastening up pieces of turf to the walls, a good variety of seedling Ferns may be expected, especially of the Scolopendrium tribe.—T. Lowe, *Penketh.*

3885.—**Pruning Climbing Roses.**—We should prefer to leave any systematic pruning of climbing Roses till the spring, when if any injured or other useless growth needs removing it may be done. The best time for this would be about the end of March. Climbing Roses, however, require to be very sparsely pruned as a rule. The robust shoots often made should be tied in and preserved, and only just shortened back. The weak shoots that will perhaps produce no flowers may be taken out altogether, as this will help to strengthen the remainder. Although the shoots need not now be pruned, they will be all the better if tied up neatly, and will suffer less from frost. The chief danger from frost to newly-planted Roses lies in the roots and the collar, or stem just out of the ground. A little protection with some litter will be of great service.

3886.—**Plants for Hanging Baskets.**—Very much depends upon the temperature in which hanging baskets are to be kept in advising as to the best plants to fill them, and certainly no baskets should require to be filled more than twice in the year, say in spring and autumn. The Ferns used should be small, such as Pteris serrulata and tricolor, Adiantum cuneatum and graeillimum, and Davallia Mooreana and bullata, both creeping kinds. Of other plants, the Ivy-leaved Pelargonium, creeping scarlet Tropæolums, Torenia asiatica, several Mesembryanthemums, Petunias, and Heliotropes make good summer plants. For winter, Epacris gracilis and herbacea, Echeveria retusa, Vinca elegantissima, variegated Myosotis dissitiflora, Iberis correæfolia, Lithospermum prostratum, Aubrietias, and Alyssum saxatile are all hardy.—A. D.

3882.—**Keeping Frost from Evergreens.**—All kinds of trees that are growing in soil that is wet and cold must have of necessity much more difficulty in maturing and ripening the season's growth than where the soil is dry and warm. It is an evil that is inevitable from the situation. In such case, growth that is unripe and sappy will suffer very much from severe frost, whilst growth on trees or shrubs of the same kind in a better position will not be injured in the least. If the shrubs were lifted in April and slightly elevated, it would check the growth, and perhaps that would become well hardened ere the winter set in. The next best thing to do is when severe frost sets in to draw the heads of the Bays and Laurels together with stout cord and give the protection of a few bast mats. These, however, should be put on only when severe weather promises, and be removed as soon as danger is over. Perhaps we may have no more such dangerous winters for several years.

3883.—**Lilies and Forget-me-nots.**—In carpeting a bed of Lilies with Myosotis dissitiflora it is not absolutely necessary that the carpet plants should be removed each year. This Myosotis is usually good for two years if the first plants are seedlings. The Lilies should, however, be planted deep, that is, quite 9 in. below the surface, as the Myosotis will pretty well exhaust the soil to a depth of 6 inches. We should prefer to remove the carpet plants every autumn, refork the surface, at the same time adding a dressing of rotten manure and leaf soil, and replanting seedling plants for a carpet. If ordinary care were exercised, we fail to see how the Lily bulbs would suffer. All depends upon the depth at which they are planted.—A. D.

3874.—**Pruning and Training Vine.**—The young Vine being required to fruit next season, and purchased for that purpose, is doubtless well ripened. It is no doubt also planted in good turfy soil, and the stem, if any part be exposed, should be covered with dry litter, thatching the roots also with the same. If the cane should not be well ripened its whole length, or if its permanence is of more consequence than a heavy crop of fruit the first season, then it will be better to cut it back more or less, according to its strength and the number of bunches it may be desired to take—from a third to a half will perhaps suffice. Just before the sap rises—say in February—bend the cane back towards the front of the house to make the bottom eyes break well. Twisting the young cane round on the hand till it snaps often hastens the breaking of a sluggish Vine. I suppose no forcing will be attempted beyond what can be done with sun-heat obtained from early closing in the afternoon. As the buds push in March, use plenty of moisture in the atmosphere. Ventilate early in the morning on fine days, shutting up early in the afternoon. If more than one shoot starts away from each joint, remove the weakest; only leave one bunch of fruit to each shoot. Train the main rod about 15 in. from the glass, and tie down the fruiting laterals as they require it, drawing them down gently at first, or they may snap off. When they have extended two leaves beyond the bunch, nip out the point of the shoot, and pinch out the points of all sub-laterals when one leaf has been made. During the spring, much will appear in the "Calendar" to meet your case. Read and think.—E. H.

3862.—**Hedge for Garden.**—Willows on the banks of a pond would not be unsightly; they grow quickly and soon afford a good deal of shelter. Plant the golden Willow thickly, and in addition plant two or three tall standard Weeping Willows in the hedge; then the Willow hedge will be both a useful and a pretty feature. The Willows may be cut back occasionally, and their trimmings be turned to some useful purpose.—E. H.

3725.—**Forcing Asparagus.**—Make up a good hotbed of leaves and stable manure in order to have a nice gentle heat. As the leaves retain heat longer than manure, it is well to mix them where both can be obtained. After turning the bed over to let the rank heat out, place on about 4 in. of good rich soil. Four-year-old roots are the best for forcing, provided they are well grown. Cover rather deeply with the same kind of soil, and give a light top-dressing of salt and soot. But to grow Asparagus well it requires a good brick pit with artificial heat, either hot-water pipes or flues, for top-heat in addition to the hotbed already advised. I should also add sufficient water must be given to keep the bed from becoming dry; the temperature may range from 60° to 65°.—T. Lowe *Penketh.*

3885.—**Pruning Climbing Roses.**—"A. W. S." does not give the names of the climbing Roses. If Hybrid Perpetuals, leave them alone until March, when cut back to a vigorous eye, thinning out all weakly and misplaced shoots. If Teas, do not prune until April and then only sparingly, retain the well placed ripe wood intact, cutting away the rest. The frost having nipped the ends of the shoots will not matter, but Teas and Noisettes should be covered up in severe weather. H. P.'s will not harm. Give both a good mulching of manure at the roots.—W. Walters, *Burton-on-Trent.*

3878.—**Camellias from Cuttings.**—It is now too late to strike Camellias; the proper time is in August just as the wood matures. The cuttings should be taken from the young free shoots of the current season's growth, cutting them to three joints, and leaving the two terminal leaves. Prepare some 6-in. pots by filling them to one-third of their depth with drainage, covering the same with rough peat, and filling quite to the rim of the pot with fine, well-sanded, fibrous peat, tapping the pot down sharply on the bench, so that it settles firmly into place. Give two moderate waterings at an interval of an hour or so, when the cuttings are inserted, and having allowed the superfluous moisture to drain off, place them in a cold frame on an ash bottom, or on slates or tiles, so that worms cannot enter. Keep the frame close for a few days and then give a little air every

morning, closing about eight o'clock, and shading from bright sun. If the nights are exceptionally warm and still the light may be altogether withdrawn, as the cool refreshing night dews will do much towards preserving the foliage in health. If the atmosphere is too confined, the leaves are apt to turn yellow and drop. By the latter end of September the cuttings should be removed to a glass structure, where the temperature will be maintained at from 50° to 55° throughout the winter. They should be placed in a frame or hand-light, so that when air is given in the house they are not in any way exposed to its influence. At the same time a change of air must be given them daily by removing the glasses for an hour or two early in the morning. Attend carefully to watering, keeping the soil moist, but avoiding heavy waterings. By April, roots should be formed, and the young plants may be potted off into small pots in a compost of loam and peat in equal proportions.—J. C. B.

3866.—**Culture of Romneya Coulteri.**—This Californian Poppywort demands liberal treatment to bring it to perfection. It likes a free, deep, tolerably rich, but well-drained soil to grow in, and will then make rapid progress. We would recommend that the seed be sown in March in gentle warmth, pricking off the plants when large enough to handle into pans of free soil, hardening them off in a cold frame, and planting out in May in a warm, somewhat sheltered situation.

3863.—**Vegetables for Exhibition.**—Celery—Incomparable White, Sulham Prize Pink, and Hooley's Conqueror Prize Red. Onions—Magnum Bonum and Improved Reading. Leeks—Ayton Castle Giant Beet—Nutting's Dwarf Red. Turnips—Cattell's Silver Ball. Carrots — Early Nantes and James' Scarlet. Brussels Sprouts—Suttons' Matchless. Cabbage—Heartwell Marrow and Enfield Market. Savoy—Dwarf Green Curled. Cauliflower—Veitch's Autumn Giant and Suttons' King. Parsnips—Student. Rhubarb—Myatt's Victoria. Tomato — Hathaway's Excelsior. Vegetable Marrows—Moore's Vegetable Cream. Peas—Telephone and Ne Plus Ultra. Beans—Seville Longpod. French Beans — Canadian Wonder. Scarlet Runner—Carters' Champion. Cucumber—Telegraph.—E. H.

3865.—**Iris Kæmpferi.** — This Iris is perfectly hardy in free, warm, well-drained soils, and when thus situated does not need the slightest protection. Where the natural staple is cold and heavy, it would be well to protect the crowns by a covering of ashes or Cocoa-nut fibre. Fairly strong plants should bloom next year, but a season's growth will be required before any great effect is obtained. Mulch in the summer and water well in dry weather; this Iris likes plenty of moisture at the roots. —J. C. B.

3867.—**Malformed Chrysanthemum Blooms.**—There are many causes for Chrysanthemum blooms coming of an imperfect shape. Immature wood will alone suffice to prevent their coming good, as will also want of water, mildew, or torpidity of the root. The fact of your blooms being small shows that the plants have not had the treatment they need, and we should say that they have suffered from want of water and food. Read some of the articles on Chrysanthemum culture which have appeared in this paper. Give your plants liberal and intelligent treatment, and you will not have again to complain of bad flowers.—C. B.

—— After the instructions given last week for the cultivation of the above plant, it is scarcely necessary to add any further remarks on the subject. However, the probable cause of your flowers being small and deformed is that you allowed the plants to become dry or root-bound at times during summer. No subsequent treatment will compensate for neglect in this respect during the growing season. The production of good flowers necessitates constant attention at all times. The Chrysanthemum is also liable to be affected with green fly, which however slight, if not stopped is fatal to the formation of perfect flowers.—CARLO.

3854.—**Transplanting Holly.**—I would strongly urge that Holly be not transplanted until April. There are only two seasons when this evergreen can be moved with perfect safety —early in the autumn, before root action has come to a standstill, and in spring just before growth commences. In the case of a Holly hedge, established two years, great danger would be experienced in transplanting it during the winter season; probably a fourth or perhaps more of the plants would die. The best way will be to well prepare the ground for its reception during the winter; choose if possible a moist time in April, transplant, well mulch the surface soil, and water copiously in hot weather. If the weather is dry, dip the roots of each plant in water before planting, and water each one well in. In this manner not one plant in a hundred will suffer. It is imperative in the case of the Holly that it strikes fresh root at once, otherwise the sap dries out of the foliage and it drops before a fresh supply can be pumped up.—J. C. B.

3881.—**Unfruitful Cherry Tree.**—Judging from the symptoms described, the roots of the Cherry tree are down in the cold subsoil. Can they be lifted and brought nearer the surface? If this cannot be done, cut out some of the old branches and lay in young wood that may be left to fruit its full length.—E. H.

3868.—**Mulberry Tree not Fruiting.**—The Mulberry tree ought to bear well at that age. Is it shaded by other trees? If it is growing too luxuriantly, and the wood does not ripen, try pruning or lifting the roots; about half way round this year, and the remainder of circumference next year if the check does not produce the desired effect.—E. H.

3821.—**Myrtles from Seed.**—Sow in March in sandy loam, well draining the pot or pan employed, and placing it in a cold frame or cool greenhouse. Cover the pot with a piece of glass, and shade until the young plants appear above ground.—J. C. B.

3741.—**Pruning a Young Vine.**—I would advise "E. M." to cut the main shoot of the Vine, so as to leave 3 ft. or 4 ft. to the roof of the house. The Royal Muscadine being of very weak growth, three eyes to the side shoots may be left, provided they are not too long and unsightly.—T. L

3819.—**Ants in Greenhouse.**—Lime-water poured freely into their runs will dislodge them.—CYGNET.

3825.—**Removing Glass from Greenhouses.**—Soft soap mixed with solution of potash, laid on with an old rag and left for some hours, will render the old putty removable.—CYGNET.

3876.—**Insects Eating Ferns.**—Very probably it is a snail. Look under the pot by candle-light.—CYGNET.

3877.—**Old Roses.**—Messrs. Cranston & Co., King's Acre Nurseries, Hereford, or Messrs. W. Paul & Son, Waltham Cross, will supply the old Roses required. The Alba Roses, Austrian Roses, &c., are to be found fully described in their catalogues, and I would advise "S. E." to procure a catalogue from one or both of the firms referred to.—WILLIAM WALTERS.

3872.—**Roses not Flowering.**—I cannot do better than refer J. Lacy to my reply to No. 3402, page 432, Nov. 6, 1880, where I endeavoured to point out the treatment of Gloire de Bordeaux and similar rapid-growing Tea and Noisette Roses.—WILLIAM WALTERS.

3940.—**Arbutus Unedo.**—*F. Baker.*—You might strike cuttings of this in August. It may also be raised from seed. Your best plan would be to purchase a few young plants; they are not expensive.

3941.—**Standard and Dwarf Roses.**—What advantage has a standard Rose tree over a dwarf that the price is greater? Also, will the ordinary dwarf or standard Rose trees advertised in Rose lists grow if put in pots in a greenhouse?—F. J. L. [The standard Roses take a longer time to convert into saleable plants than dwarf ones do. Standards have no particular advantage over dwarfs. Either will grow in pots in a greenhouse.]

3942.—**Cupressus elegans.**—*A. E. A.*—If the plant is only green on the top dig it up. A withered tree with a little green on the top is certainly not ornamental. You might plant some Clematis against it and let them grow over and cover it.

3943.—**Stokesia cyanea.**—*S. S.*—This, the popular name of which is Stoke's Aster, is a stout, free-growing herb flowering in September. Its flowers are blue, and somewhat like those of a China Aster. Warm borders suit it best, or it may be grown in pots in a greenhouse. It is increased by division of the root.

3944.—**Forcing Roses.**—What time might I introduce Roses into the forcing house to have them in bloom about April 15?—YOUNG GARDENER. [Put one batch at once, and another in a few weeks' time, in a cool house or frame, and let them come gradually on. When the flower-buds show put them in the forcing house.]

3945.—**Dahlias for Exhibition.**—How are Dahlia flowers protected so as to have them fresh and fully expanded for exhibition?—YOUNG GARDENER. [They are usually cut on the morning of the show and sprinkled with water.]

3946.—**Chicken Manure** —*Amateur Fowl Keeper.*—Fowls' manure is very good for gardening purposes, but unless you can use it yourself or dispose of it in your immediate neighbourhood it will be of little value to you.

3947.—**Geraniums and Azaleas.**—*M.*—Geranium cuttings do not require much water during winter; give a little when the soil gets dry. Azaleas want plenty of water, but it should not be given often in dribblets, but in large doses when the plant requires it. They will do well in a cool house, or may be forced into flower in a warm house.

3948.—**Heating Greenhouse.**—What amount of 4-in. piping would it take to heat a lean-to greenhouse 9 ft. by 5 ft.?—AMATEUR. [If merely to keep out frost, a flow and return along the front will be ample; if for forcing, &c., put a flow and return all round.]

3949.—**Climber for Greenhouse.**—I have a greenhouse 10 ft. by 6 ft., in which I keep a general variety of bedding plants. The floor is of concrete, with one open space 15 in. square against the back brick wall. What will be the best plant or Vine to grow in it for training up the wall and under the glass roof?—T. E. HORWELL. [Plant a Maréchal Niel Rose.]

3950.—**Manuring Vine Border.**—My Vines are planted in an outside border, which is not more than 3 yds. wide. The Vines are very old, and have been very much neglected; they are not trained at all, but run wild. I have given the border a good manuring, and covered with long littery manure. Would you recommend me to give the border some liquid manure, as I have plenty, such as the drainage from the farmyard? Is this the proper time to apply it?—NOVICE. [We should not give manure water till the Vines begin to grow. During summer you may give the border a good soaking once a fortnight, or oftener if it is well drained. Cut out some of the weakest wood where too thick, also the unripened shoots, and prune back the strong shoots where necessary.]

3951.—**Vegetables in the Shade.**—I have a bed of soil which is very much shaded. I want to grow some vegetables; which will be the best for me to grow?—E.F. [Lettuce, Winter Greens, Sprouting Broccoli, and Turnips.]

3952.—**Vegetables in Shallow Soil.**—I have an unused well in my garden; I have covered it with boards, and have about 8 in. of mould on the top. I want to grow some vegetables; what will be most likely to succeed?—E. F. [Turnips, Radishes, Early Horn Carrots, Onions, or any surface-rooted plant.]

3953.—**Tiger Lily.**—I planted one of these in my garden in 1878. In the summers of 1879-80 it did not flower; of course I left it in the open ground all the year round. Last October I took the bulbs up, intending to plant some in the open ground again, and some in pots to be kept in the house. How must I now proceed? when and how must I plant, kind of soil, size of pots, &c.?—PHILFLORA. [Well dig and manure the ground, and plant 4 in. or 5 in. below the surface. If you can keep the bulbs in a dry, cool place you may plant them in spring. Those for pots should be planted at once in turfy loam or peat and rotten manure or leaf-mould with plenty of sand added; 6-in. pots will do for single bulbs, or two bulbs may be put in an 8-in. pot. Give good drainage.]

3954.—**Fuchsias in Rooms.**—I cut my Fuchsia back last September, and placed it in a shady place under a window in one of my rooms, giving it a little water occasionally. It has now sent forth numerous shoots, some of them 3 in. to 4 in. in length, but drawn. What ought I to do with it?—PHILFLORA. [Put it in a light, airy position, and keep it dry till spring; then pinch back the weak growths.]

3955.—**Transplanting Cactus Cuttings** —*H. W.* —It would be best left till spring.

3956.—**Moving Rose Cuttings.**—Unless you have a warm frame or house to put them in, it would be better not to move them now. As they are in the same pot as a Fuchsia, it would be better to sacrifice the Fuchsia than the Roses.

3957.—**Planting Vines.**—When is the best time to plant Vines? and where can I get a good Black Hamburgh? and about what price?—GRAVESEND. [Plant now. If for outside border plant in open weather, and mulch the roots with half-rotten manure. You can get a good cane at any respectable nursery where Vines are grown: price about 5s.]

3958.—**Mineral Oil for the Destruction of Blight.**—*R. F. S.*—This is always best applied to plants in autumn when their growth is well matured, as they will then stand the mixture much stronger than at any other time. If applied in spring when young plants are being made, it is best to apply the oil weak and at intervals of a few days. You will do no good with mineral oils in destroying slugs in a garden.

3959.—**Raising Young Ferns.**—How can I raise young plants from a Fern which has made new leaflets on the fronds of an old plant? C. S. S. [Peg the old frond into a pan filled with sandy soil.]

Tuberoses.—*Mr. G., Dover.*—You may get them from any respectable seedsman. See our advertising columns. We cannot state the price.

Italian Prune Plum.—*S. W.*—You will probably get it at any of the large fruit nurseries. Try Hill (late Scott), Merriott Nurseries, Crewkerne.

Copying Machine.—*Hereford.*—We think the receipt given July 3 will answer your purpose.

Achillea umbellata.—*Subscriber.*—From any hardy plant nursery, such as Ware's, Backhouse's, Parker's, or Dickson's.

Hardy Ferns.—*Cygnet.*—An answer to your query would be an advertisement.

Names of Plants.—*We cannot undertake to name what are termed florists' flowers, which include Pelargoniums, Fuchsias, Roses, Chrysanthemums, &c. These can only be named by specialists who have the means of comparison at hand.*——*Nine Months' Subscriber.*—1, Erica nitida; 2, E. gracilis; cut back after flowering; re-pot when new growth commences.——*W. T. K.*—Probably the Hand Plant (Cheirostemon platanoides). We do not know the hedge plant you mention.——*Singleton Fontenoy.*—Probably you mean Pelargonium teretifolium. ——*Subscriber, Plumstead.*—1, Anthoxanthum odoratum; 2, Cynosurus cristatus; 3, Holcus lanata; 4, cannot name; 5, Festuca pratensis; 6, Linum catharticum.—— *F. H.*—Ionopsidium acaule.——*F. A., gardener.*—Amomum cinnamomum.——*W. Cash.*—1, Abies Alcockiana; 2, A. ajanensis.——*G. D. H.*—2, Cineraria maritima; 4, Coronilla Emerus; 6, Stachys lanata; Vaccinium bxifolium (red berries); send better specimens of others.

QUERIES.

3960.—**India-rubber Plants.**—Can any one tell me how I should treat my India-rubber plant? I had one in my drawing-room for a little time, but the lower leaves soon turned yellow and fell off. I have now got another, and shall be glad to know how I should treat it. I have no other place to keep it than the window.—C. A. T.

3961.—**Scale on Vines.**—I have two large Vineries which are very much infested with scale. I have tried various means to destroy it, such as scraping the Vines, painting them with Gishurst, 6 oz. to the gallon, &c., but without success. I am recommended to try paraffin along with the Gishurst. Could any one inform me what quantity of paraffin to mix with the Gishurst? or suggest any other remedy for destroying the scale?—NOVICE.

3962.—**New Potatoes.**—Will some one give me a list of new Potatoes that came out in the year 1880? also their habit of growth and their table quality?—G. B. C.

3963.—**Roses in Pots.**—I have two Roses in pots—one Gloire de Dijon, the other a dark one which I cannot name. Both are Briers and small. The first made only a few buds during the past season; the other made fairly good shoots, which I cut back in autumn. I have them in a warm greenhouse, and they are now breaking well. The temperature is seldom or never under 50°. What treatment should I give them to get them to flower next year?—J. R. S.

3964.—**Pruning Roses.**—I had some Gloire de Dijon Roses, standards, planted last spring; they only bore two or three flowers, but made strong shoots about 8 in. to 14 in. long; how far must they be cut back? and when is the time? I also planted last month some climbers of the same species on the front wall of my house, south-west aspect; they have four to five strong shoots 20 in. to 38 in., Must they be trained straight up or in fan shape? and when and how must they be pruned?—A. K.

3965.—**Maggot on Cabbage.**—My garden soil is full of small white maggots which eat all the roots of Cabbage, Sprouts, &c. Can any reader suggest a remedy?—CABBAGE.

3966.—**Lime, Soot, and Salt for the Kitchen Garden.**—I have a garden about 18½ rods. I have just put 1½ cwt. of salt on it. Will someone be kind enough to tell me if lime and soot will be of any service to the ground, as I want to get some good Potatoes. If so, what quantity should I want?—C. B.

3967.—**Weeds on Lawns.**—My lawn appears to have been originally sown with very inferior seed. It has gradually got worse and worse, and is now foul with all kinds of weeds. Of course, to redig and sow with good lawn seed would be the best way to get rid of the nuisance, but is there no way I could kill the weeds, &c.? Would raking well with a strong iron rake, spreading sulphate of ammonia on it, letting lie till spring, then again raking, sprinkling good lawn seed, and slightly covering with good soil be likely to do any good?—E. W. C.

3968.—**Banksian Roses not Flowering.**—Four years ago I planted two Banksian Roses against a west wall; they made good wood, but have not flowered. What can I do to them?—AMATEUR.

3969.—**Cropping a Garden.**—In my garden, which is a deep light loam, I purpose devoting about fifteen rods to early Potatoes and Brussels Sprouts. I shall now have the ground trenched and a good dressing of manure worked in between the top and second spit, soot and lime being mixed with the manure in filling the barrows. When the Potatoes are planted the ground will be forked, and a dressing of guano given to the Potatoes in rows 2 ft. apart, the Brussels Sprouts being sown early and planted between the rows of Potatoes after earthing. Will this be good practice? and what quantity of guano will be required for the fifteen rods? Would it do good to give a slight dressing of soot after the Potatoes are up before planting the Brussels Sprouts? Is brine from a bacon-curer's good for crops? and when should it be applied?—ENQUIRER.

3970.—**Summer Snowflake** (Leucojum æstivum).—I have some seed of this; which is the proper time to sow it? and what is the best after treatment for it?—INQUIRER.

3971.—**Melons and Figs.**—I wish to grow these in a greenhouse heated with hot-water pipes. I should be glad to know if they would fruit if grown in pots and trained up the spars? Any information concerning the above would be appreciated.—T. G.

3972.—**Pruning Clematis.**—Will some one inform me what is the best time, and more particularly the best mode of pruning back a Clematis? Mine is a rather large single star-flowered kind, not one of the new large flowering sorts. It grows very luxuriantly, makes a great deal of wood, and spreads very widely, so that if one cuts out any of the large woody stems, one does not know how much space will be laid bare, and if the young wood is cut back, I lose in the spring the pretty sprays of flower 3 ft. or 4 ft. long; how is this to be avoided; and yet the plant kept within moderate dimensions?—A PUZZLED AMATEUR.

3973.—**White Worms in Soil.**—Will any reader tell me what I can use to destroy numbers of very small white worms which I find in the mould at the roots of my Maiden-hair Ferns? They cause the fronds to wither and die.—FORGET-ME-NOT.

3974.—**Rhododendrons.**—I should fell obliged if some one would give me a short list of the best kinds of Rhododendrons, and the kind of soil and situation required to induce them to flower well.—G. B. B.

3975.—**Pancratium carribbæum.**—I have several bulbs of this, and should be glad to know the proper treatment at this time of the year. Mine are rotting off; they are in a greenhouse at a temperature always at 60° or 65°.—MALDEN.

3976.—**Building a Greenhouse.**—Having seen the remarks of "G. S. C." on this subject, and that he now offers to give fuller particulars, I write to ask you for such information as would enable me to judge of the cost. Perhaps he could tell me what it ought to cost per each item for a house, span-roof 15 ft. long, 9 ft. wide, 8 ft. high, but only 3 ft. at the sides, including brickwork of 8 in. I propose sinking the path in the centre 3 ft.; in fact, making a forcing pit in which I could grow Cucumbers or Melons. Being an amateur carpenter, I should like to do the work myself.—C. C. OLDFIELD.

3977.—**Newly Planted Roses.**—The Roses we get from the nurseries are often very deficient in root and fibre. Should not this modify the rules for pruning in the spring following the autumn planting? My Roses, fresh bought and planted in the autumn of 1879, did not flower well or grow last summer, though well fed. I pruned the vigorous ones rather long, as the books direct. Should I not have done better by cutting them back more severely in March?—S. L.

3978.—**Heating a Wardian Case.**—I have a Wardian case which I have tried to heat, the apparatus simply consisting of 1½-in. tin piping going through the case, and being heated by a lamp, the globe fitting in a tundish outside the case. The pipe is perfectly air-tight, so that the fumes cannot escape. I cannot get it above three degrees of the ordinary temperature, and the Ferns of late are dying off and looking black.—NOVICE.

3979.—**Dwarf Hyacinths.**—Will "W. B." who writes in GARDENING ILLUSTRATED, No. 81, about dwarf Hyacinths of the sort which "feather" from Holland, kindly say where they are to be got?—K. M.

3980.—**Canary Seed for Producing Room Plants.**—I have been told that by sowing Canary seed one can very quickly obtain pretty pots of green for the room. I shall be much obliged for some information how to manage it.—P. M. F.

3981.—**Hastening the Decomposition of Manure.**—Would any reader inform me if there is anything that will hasten the rotting of stable dung without diminishing its manurial properties.—A. B. W.

3982.—**Planting Fish Pond in Fernery.**—I have an exotic Fernery about 10 ft. by 8 ft., with a small but irregular-shaped fish pond, 8 in. deep and about 18 ft. superficial in extent. I want to introduce some aquatic flowering plants and fish. Would any reader kindly inform me how many and what sorts of each are the best and most effective for the purpose?—MERCATOR.

3983.—**Best Show Chrysanthemums.**—Will some one tell me the names of twelve of the best show Chrysanthemums in cultivation?—W. J.

HOME PETS.

Singing Mice.—I have heard and seen singing mice, but do not know that they are in any way trained or offered for sale. It is supposed that the little animals which show the musical peculiarity merely do so because suffering from some painful physical defect, but it is not obvious to the ordinary observer. The music is like a sort of whispering, monotonous melody, much as the bagpipes would make if heard at a long distance. In both the cases where I have met with these mice it was in rather old houses, where there were good runs in the walls and behind the skirting. I shall be interested to learn that such mice are offered for sale.—A. D.

Parrot with Sore Throat.—Not having seen any remedy given for the above, I would suggest feeding her with bread and milk, and giving Hemp and Canary seed sparingly. My experience is that parrots do not care for Indian Corn, even boiled as it should be for an hour. I have a parrot of this year who is perfectly healthy; her food consists principally of boiled milk and bread, and when the warm sloppy mess is given her, she makes the best meal of the day.—R. H.

Parrot Poisoned with Parsley.—Whilst travelling this year I met a lady whose valuable parrot had died from eating Parsley. The cook, although previously warned of its effects, gave her some, and she died in a few hours, having vomited some of the herb.—R. H.

Canaries with Long Nails.—Very carefully clip just the tips of the nails with very sharp small scissors. Great care must be taken not to cut too much off to make the nail bleed, or it will lame the bird. The best plan is always to keep two or three rough stones at the bottom of the cage; the constant hopping upon them will keep the claws properly worn down.—P.

Changing the Colour of Canaries.—I have a very pale yellow canary, and I have heard that cayenne pepper would make him a darker colour; is it true? and would it do him any harm?—MERVYN.

Insects in Birds.—I have a Virginian nightingale (Cardinal Grosbeak) which seems to be greatly troubled by insects of some sort or other, and thought of sprinkling him with Keating's Insect Powder, but I fear he may, in "teasing" his feathers, peck at the powder, and so poison himself. I should be obliged if anyone can, from his own experience, give me some information on the point.—MYRA.

Budgerigar Losing its Feathers.—My cock Budgerigar in two days lost nearly all the feathers off his head, also a narrow line of them from between its shoulders. The complaint appeared to begin there, and the bird appeared unwell about a week previously. Is there any cure? He appears to search for something in the sand; he has both yellow and silver sand; would gravel be safe to give? It is fed on Millet, Canary, Plantain, and fresh Grass.—M. B. A.

Parrot Mopish.—I have a parrot which used to talk well, but lately it has gone off talking and sits and sleeps nearly all day. He takes his food well, which consists of Canary and Hemp seed, with sopped bread. Can any one tell me what course to pursue to make him more lively and resume talking?—E. K. G.

AQUARIA.

Plant for Small Aquarium.—Would some one give me the name of an aquatic that would do well in a small indoor aquarium? I have tried Vallisneria and the Cape Pond Weed, but they do not succeed. Also where I could procure a small self-acting fountain for same?—AQUA.

Stocking an Aquarium.—I have in my greenhouse, which has a south-west aspect, a large vase (earthenware), 2 ft. in diameter at the top, and originally intended to be used as a flower vase, and has now two gold fish in it. I wish to stock it. Will some reader of GARDENING ILLUSTRATED advise me how to proceed? It has no plants in it, in fact, nothing but the two fish. D. S. A.

Cement for Rockwork.—Portland cement may be changed to any colour you like. Lamp black will make it black, yellow ochre will make it yellow, and if "R. S. W." went to any good colour shop, they would supply him with colouring matter to any tint he may wish.—FERNDALE.

GARDENING
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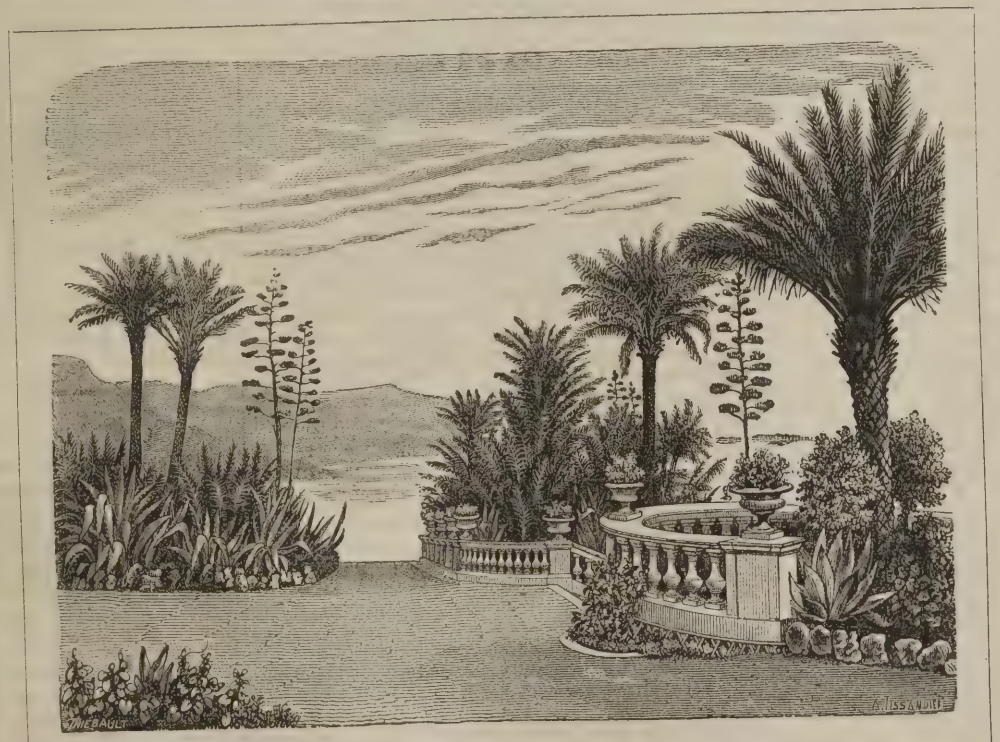
WINTER GARDENING IN EUROPE.

FEW people are probably aware that whilst our own gardens are denuded of their greenery and flowers, and whilst we are shivering with the cold, there are, within twenty-four hours' ride of our own shores, beautiful gardens of Palms and Aloes, and in our climate other tender plants, in which reigns almost summer weather. We allude to Riviera. Nice, and other places in the south of France. To give some idea of what the gardens there are like in winter, we reprint a portion of some letters written to us about this time last year, by a gentlemen staying in the South of France:—

"I am writing by a window wide open in the hot sunshine and under a bright blue sky. I look through the window, and I see that huge Cactus, the Prickly Pear, full of fruit, four large specimens on one leaf, and close by a Lantana, with its gay red and yellow flowers, occupies a space about 14ft. in height by 10ft. in breadth. Some of the upper branches have left the wall and are drooping over an Orange tree laden with golden fruit. Next to this there is an Arbutus (which ripens its Strawberries so thoroughly here that the tree must no longer be called Unedo; eat one and you will want no more, because they are good for food, both preserved and *au naturel*)—a great tree full of blossom; and beside it the Japanese Medlar, also showing abundant promise of fruit. If I go into the gardens of the hotel I find the Datura, with its beautiful white bells; Roses Lamarque, Homère, Bourbon Queen, Mrs. Bosanquet, the Old Monthly, and other Chinas, such as Fabvier and Cramoisie Supérieure, Safrano, Gloire de Dijon, &c., (in other gardens I have twice seen Chromatella or Cloth of Gold); the Heliotrope flowers freely and perfumes the air; Plumbago capensis covers great bushes with its blue-grey blossoms; Acacias and Abutilons are here in profusion; and there are Violets and Carnations, Zinnias and Pansies, Escallonias and Veronicas *galore*. The Polygalas and Chorozemas, which you English tie out in pots, and coddle under glass, and take to exhibitions, grow here to any size you please; and the Palms, which you put on your dinner-table, are great trees 15 ft. high, with their Dates hanging down in huge bunches on their red stalks. Do you remember a plant of Bougainvillea glabra, which you showed me in your stove, proudly pointing to its flowers, few in number, in complexion pale? I saw it yesterday covering a coachhouse. It really made me for a few moments feel faint and ill with admiration. A mass of roseate beauty, with a tinge of mauve or blue—all flower (or rather bracts)—scarce a leaf to be seen. For two or three days it has been so hot in the sun and so cold in the shade, that I have felt, now and then, like the *pain roti* which we have at breakfast, and which is sometimes sent toasted brown on one side, white on the other, and untouched by the fire; and at the present the sky is overcast, and a gentle rain is falling (in every clime *some* rain must fall), but the air is so mild, and the foliage so refreshed, that the garden looked this morning as our gardens look on a dull morning in early June. This garden, and the grounds about it, are formed by alluvial deposits, brought by the rivers and mountain streams, and they are protected on the east, north, and west by the hills, which form a crescent round them, or, to use an illustration more congenial to your taste, an horseshoe with the toe turned towards the north; so that we of the suburbs seem to live in one vast garden, or rather in a series of gardens, dotted here and there with picturesque villas, many-coloured, having their walls white, their roofs red, their *jalousies* green (Shakespeare says that jealousy is green), and so fertile that, if your temperament is sanguine and your imagination lively, you may plant the stick of an old parasol at night, and expect to see an Umbrella Pine in the morning. Very abundant and very beautiful in the Riviera are these Umbrella Pines; but what would you say to the Araucaria excelsa, the Pine of Norfolk Island (of which I remember an admired specimen about 8 ft. high in your conservatory) growing up a great tree *al fresco?* How you would delight in the Magnolias, 30 ft. in height, with their vermilion seeds gleaming among the grand foliage; the graceful Pepper Tree, with its Acacia-like leaves, and its red clustering berries, and the Acacias themselves, longiflora and many others, large as your Laburnums, and covered with their yellow flowers. How astonished you would be if I could take you into the city of Nice and show that, which is perhaps the fairest surprise of all, the row of Palm trees with Oleanders in alternation (the former laden with Dates), which extends, with a graceful sweep from the Promenade of the English by the sea to the Place of Massena (so named in honour of the marquis, who was born at Nice), and ending with the noble specimen of Eucalyptus, which, though only planted fifteen years ago, has a trunk and branches such as would not be seen on our forest trees in England in less than fifty or sixty years. Having you in Nice, I must take you up to the Castle, and show you, as we mount the hill, the wonderful Aloes, growing anywhere and anyhow, and, though their inflorescence is over, assuring us by their giant stalks, long enough and strong enough to hold a salmon, how glorious their beauty has been. And as we reach the summit, what a panorama! Let the old man point out the house in the Rue de Smollett, in which resided the author of 'Humphrey Clinker;' and let him show you the home in which Garibaldi was born; and try to sympathise with the Frenchman's pride when, looking eastward over the sea, he tells you that the speck, which on a fine, clear day you may discern, is Corsica, the birthplace of Napoleon! But these surprises are incessant. Palms, encircled by red and white Roses, and by scarlet and yellow Nasturtiums; the blue flowers of the Plumbago intermixed with the crimson blooms of the Bignonia; the exquisite Dahlia imperialis (truly an empress among



A WINTER GARDEN IN THE SOUTH OF FRANCE.

the flowers) nearly reaching the window of a second floor; the Locust tree covered with fruit-blossoms; the Tobacco tree with its yellow tubes; all the flowers I named above, and many others, which, as yet, I have not seen. Can we wonder that such titles as 'Hotel de Paradis' should be selected by the happy innkeepers of Nice, or that the people generally should hold as an article of their creed (Nicene) that the place of their habitation is *La Baie des Anges?* It is no fault of theirs if some of the visitors, especially those who come here that they may gamble at Monaco, suggest very different and less refined associations."

TOWN GARDENING.

Miscellaneous Plants for Outdoor Culture.

Among hardy plants, the ordinary German Iris, or Flag, as well as the wild English yellow one, is about the best for town gardens. It likes a good rich loam and plenty of water when in growth, and it will do well in either sun or shade. The plants flower freely and well, and as the blooms open very quickly, look beautifully fresh and clean. Canterbury Bells, the tall Campanulas, Sweet Williams, and other biennials should be sown in nursery beds or large boxes about July for the next year's flowering, be thinned or pricked off, and if possible, kept in a cold frame during the winter, or protected in some way. Or if this cannot be done, purchase young plants freshly every year; and even in the case of perennials, do not attempt to keep the old plants after they have flowered once, but keep a fresh stock coming on. Any good rich soil, loam if possible, suits them.

Delphiniums are very pretty and flower fairly well, though the lower leaves have a way of dying off which is not at all sightly. The old roots may be left out of doors all winter, as they die quite down; the soil for them should be very deep and rich, and of rather a holding or close nature. Seeds of these sown in July, pricked off into cold frames, planted out as soon as they begin to grow in spring, or even if sown in early spring in a gentle heat, or even cold frame, grown along quickly and planted out as soon as large enough in deep rich soil, and well watered in dry weather, will bloom in the autumn. The best kinds to grow are D. formosum, D. grandiflorum and D. g. cœlestinum, a very pretty variety, and D. nudicaule, scarlet. Do not be discouraged if these look small, and as if they would never come into flower, especially in the early stages. They are a long time making up their minds to make a good start, but when once planted out they grow with wonderful rapidity during the summer.

London Pride and Creeping Jenny planted almost anywhere, especially on rockwork, do very well, and the latter does best in a shady place; it is very pretty for hanging baskets or pots, or window boxes. Primroses and Cowslips are fine, especially the former; plant them in good rich loam in a rather shady place to do best. A plant or two of the former put in good loam in a cold frame will produce plenty of nice clean flowers early in spring, as good as you could get in a country copse or wood, if you give it plenty of air when fine and clear. The Everlasting Pea is very pretty, and as it has an underground bulb or tuber, and the top dies down in winter, it does very well, as, indeed, do many plants that do the same, it is such an advantage to them to be hidden from the poisonous fogs and foul air of the dark days; so that the Tiger Lily, the Turk's-cap, the common garden white, and any hardy Lily almost succeed if planted in deep, rich, and somewhat loamy soil. Be sure to put a handful of sand round each bulb when planting to prevent rotting.

The wild blue Hyacinth, left undisturbed, throws up its bright foliage and flowers every spring, though the colour of the latter is not as brilliant as we see it in country lanes and woods. Crocuses do well too in rich soil, and we have had very decent Hyacinths out-of-doors, but Tulips are more shy. Plant them about 6 in. deep, with plenty of rotten manure down beneath, but not touching them; do not let the surface of the ground where they are, get hard or caked. Marigolds, both the common garden and the French, are very useful. They generally sow themselves, at least the common ones do, and the deep golden and orange, almost scarlet, hue of some of these is very showy. The French are more delicate, and should be sown under glass or some slight protection in spring. The new gold-striped French varieties are really handsome, but we do not recommend the African. Do not omit a few patches, at least, of the lovely Cyanus, or Corn-flowers. Sow the seed in patches or circular rings, with the ground beneath them deeply dug and manured; thin out if too thick, and set three or four slight stakes round the patch with raffia or string tied from one to the other, to keep them up. You will have from a 3d. packet of mixed seed hundreds, if not thousands, of the prettiest flowers imaginable, pure white, white shaded, pink, rose, purple, dark and light blue—more colours than you would care to count.

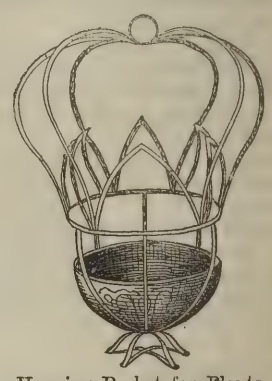
Among annuals nothing beats Mignonette, and it grows to all appearance as well in London as in the heart of Kent. It likes a light open soil, and will do better in such, if pretty rich, than in stiff loam or clay anywhere in the country. Give it a warm sunny border. Silene pendula compacta and other varieties are very pretty and easy to grow; and Venus' Looking-glass and Candytuft are both fine in good rich soil. The lovely Convolvulus major, or Morning Glory, is a great success; it luxuriates in a very light rich soil, such as old decayed vegetable matter. Sow the seed where it is to flower, and do not sow in heat and transplant; it is quite a mistake, but do not sow before April. The finest we ever saw grew on a little heap of old tan at the foot of a south wall in a Bermondsey tanyard.

Among bedding things, Geraniums, Calceolarias, Verbenas, Petunias, Lobelia, the white Cineraria, or Dusty Miller, are the most successful. A great drawback to scarlet Geraniums is that they are apt to go white at the edges of the flowers, which detracts considerably from their appearance, but good cultivation will do much to amend this; another fault is that when in soil suitable for other things, and especially in wet seasons, they are given to make such tremendous growth at the expense of the flowers. The best plan to counteract this is to grow them in 5 in. pots, and just sink them, pots and all, in the ground in their places. This will check the over-luxuriant growth, and induce a free flowering habit, but you must keep them well watered at the root in so confined a space. The Amaranthus, too, is a capital bedding plant of a nice dwarf habit, and the colour of the foliage is splendid, but it is of not the least use attempting to grow Coleus, Alternatheras, Iresines, and other delicate things of this class; these seldom, especially the Coleus, do much good even in pure country air.

With nearly every kind of plant, seedlings are of no use where a number exactly similar in height, habit, and colour are required. No matter how carefully the seed is saved, there is always some slight variation among the plants in some respect. For all such purposes, cutting plants must be had; but for mixed beds and general display, or where a shade or two in the colour is not of much importance, then seedlings are as good, and indeed we consider them preferable for many reasons. If seedlings must be used, and some degree of exactness is required, grow about half as many plants beyond what you really require, and then, if any do not come quite true, you can replace them from the reserve bed. B. C. R.

A New Market.—It may interest your readers to know that an effort is about to be made, through the medium of a joint-stock company or of a limited corporation, to relieve Covent Garden market and the surrounding streets of the congested traffic, by the establishment of suburban markets, the first of which it is proposed to establish on the main thoroughfare between Hammersmith and Turnham-green. This would afford accommodation for the West End, the southern, the western, and the south-western districts on the Great Western road, thereby saving the wear and tear of horseflesh and other costs of transit to many of the Surrey, Bucks, and Middlesex growers; and at the same time enabling the buyers for the north of England and Scotland to avail themselves of the railway facilities, and to purchase goods when perfectly fresh—in fact, upon the day the goods are gathered. As you are probably aware, most of the present West End supply is gathered on the day previous to the market. It is proposed that this West End suburban market should not only be utilised for the sale of every description of market garden and dairy produce, but that on alternate days there shall be sold fish and poultry; also, as the selected site is so spacious, that markets shall be held for cattle to be slaughtered on the spot in slaughter-houses to be specially provided for the purpose.—H. COLES STATITSCHMIDT.

Hanging Baskets and Pot-Holders.—Among the various forms of these now in use is one of the most uncommon—that represented by the accompanying engraving. It consists of a wooden bowl, supported by narrow steel straps, strong, flexible, and elastic, and so contrived as to form a crown or balloon-shaped trellis above the bowl over which the plant is to be trained. Steel straps of this kind may be converted into pot-holders, by which a pot may be suspended at any time when it may be



Hanging Basket for Plants.

desirable to do so. Indeed, such trellises may be made useful in various ways, and they are capable of being made of many different shapes.—Q.

HEATING GREENHOUSES.

THE frequency of the above heading amongst "Queries" leads me to suppose that there are many amateurs like myself, who, possessing a glass structure and being ambitious of turning it to somewhat better account than merely keeping alive "bedding stuff," are in search of a means of heating it, which, while inexpensive and not requiring frequent attention, will enable them to preserve a healthy and steady temperature not falling below 45° at night. For their help, I ask permission to give my experience in such a search. It is proverbial that purchased experience is the most valuable; by this criterion the history I am about to give ought to be worth your readers' acceptance, though it will cost them nothing. Eight years ago I became the possessor of a greenhouse, with half-span roof and glass front, 20 feet long by 12 feet wide. Before my occupation it had been heated by a brick flue, but this was become old and ruinous, giving exit to much smoke and soot; and the fire-hole being out of doors, the keeping up the fire became a serious matter to an old man in winter weather. The whole system received its *coup de grace* at the hands of a groom, who superheated the flue, burning the wood-work and destroying all my first lot of plants. My next attempt was with a petroleum stove. This I found fairly reliable and not very expensive. The lamp required filling twice in the twenty-four hours, and consumed a gallon of oil in three days, but though the winter was mild I could never keep the temperature above 40° at night, and, either from that cause, or from the impure atmosphere, the plants became unhealthy, and many died. With so small a heating power it is impossible, except in very mild weather, to afford the plants any ventilation. My next venture was to utilise gas. A gentleman of my

acquaintance had invented a stove in which gas was burned in a cylinder while the air was heated by passing through tubes in the cylinder. This plan was tried with modifications for two winters, but was found both inefficient and expensive. The gas consumed cost 5s. per week, and the temperature could never be raised above 40°, while on cold nights many plants suffered from frost. I had by this time arrived at the conclusion that hot-water pipes afforded the only efficient means of heating, and having gas laid on, I had an apparatus fitted up which consisted of a copper gas-boiler and 44 feet of 4-inch iron piping. The cost of this arrangement and fitting it up amounted to nearly £20, but I was still as far from winter flowers as ever. During the hard winter of 1878 the full power of gas was turned on for more than three weeks together, yet the temperature could never be raised to 40°, and when the gas bill came in it was found that the cost of fuel was over 2s. a day, so the gas was dismissed for ever, and the hot-water pipes fitted to a coil boiler in a slow-combustion stove, and, when the mysteries of feeding and managing this stove had been mastered, my long search was over and my object gained. My stove was made by Messrs. Deard, of Harlow, and cost £3 15s. It is fitted with a hopper large enough to hold fuel for twelve hours' consumption, and burns about 1½ cwt. of gas coke (costing 1s.) per week. Its only drawback is that it now and then happens that the fuel becomes lodged in the hopper and so the fire goes out. This is prevented by care in breaking the coke, which should never be used in pieces larger than a hen's egg, and with as little dust as possible. Some mechanical appliance, however, like a spiral spring affixed to the cover, would, I think, be an improvement; with this apparatus, the temperature can be regulated with the utmost nicety. During the coldest weather of the last winter I could ensure a warmth of 45° at night, and, this being raised to 55° by day, allows scope for abundance of fresh air, and the plants continue fresh and healthy without syringing or special care of any kind. To show how much pleasure an amateur with little time and less skill can derive from such a house as I have described, I append a list of plants now in flower or ready to expand.

Chrysanthemums, Show and Japanese, Pelargoniums, Primulas, Cyclamens, Marguerites, Corn Marigolds, Browallia elata, Bouvardias, Echeverias, Abutilon, Begonias, Coronilla, Polygala, Boussingaultia baselloides, Hibbertia dentata, Fuchsia splendens, Eupatoriums, Epiphyllums, Heliotrope, Cuphea, Genista, Imantophyllum, Oncidium flexuosum, Cypripedium insigne, and Mignonette. After Christmas, the house will be kept gay with Azaleas and other hard wooded plants, Tea Roses and Dutch and Cape bulbs, until, with the returning sun-heat, the peeping of Alpine and other hardy favourites "long lost to sight to memory dear," transfers the paramount interest to the out-door garden, and the greenhouse "pales its ineffectual fires" before the coming summer.

I may add that, in my hands, the gas-coke has proved the best fuel. Any kind of caking coal is, of course, inadmissible. Anthracite coal, though beautifully clean, is expensive, and produces too fierce a heat; while house cinders, at least such as are produced by our west country coal, are apt, by running into clinkers, to choke the draught and give much trouble. P.

Trade Catalogues Received.—Messrs. Sutton and Son's (Reading) "Amateur's Guide in Horticulture"; B. S. Williams, Victoria Nurseries, Upper Holloway, London, N., "Flower, Vegetable, and Agricultural Seeds"; Messrs. Carter and Co., High Holborn, London, "Vade Mecum for 1881."

Curing Rabbit Skins.—Get a quart of boiling water; put in it as much alum as will absorb, allow it to cool, then plunge the skin in it for 24 hours. Let the skin get nearly dry, and stretch it as tightly as possible on a board with tacks or nails. Make a mixture of one-third salt and two-thirds pepper, and rub the skin well with it two or three times, and allow it to dry. When quite dry rub a very small quantity of oil in to make it pliant. The pepper should be the strongest obtainable, as it is that which cures it.—A CONSTANT SUBSCRIBER.

VEGETABLES.

THE JERUSALEM ARTICHOKE.

THIS is a tuberous-rooted species of Sunflower. Very little instruction is needed "how to grow" this vegetable, inasmuch as even Docks or Nettles are weak compared with its rampant vigour, and it will grow in any soil or any aspect; but for all this it is little appreciated. The Potato has furnished so many disappointments during the past twenty years or more, that we think in bad seasons this might be looked to as a substitute. To many it may appear inferior to the Potato in nutritive quality, but analysis has proved that it is so in but a slight degree; and when properly cooked and prepared a dish of Artichokes is very agreeable. When Potatoes, in addition to disease and bad quality, take to supertuberating, which they frequently do, a store of this hardy root becomes invaluable. Where the slightest knowledge of cookery exists

Jerusalem Artichoke in Bloom.

there can be no difficulty in serving it up in an agreeable manner; and it would be a boon to the poorer classes of cottage gardeners if this vegetable, and some simple but agreeable mode of serving it, were commonly known amongst them. As regards cultivation, it is often left alone in some bye-corner to take care of itself—for it is said that on account of the propensity of every little tuber, or small bit of root, to grow, it is not easy to get the land clear of it when once planted. If systematically cultivated, however, it is as easily and cleanly forked out of the soil, when ripe, as the Potato is, but the frost will not destroy any of the Artichoke tubers that may be left in the ground, or on its surface either, as it would Potatoes. The Jerusalem Artichoke is an extraordinary cropper, and free from any kind of disease, so that an abundant crop is certain with but little trouble in the preparation of the soil, and without the application of manure—which this Artichoke does not require. The only insect that attacks the Jerusalem Artichoke in summer is the wasp; when these are plentiful, in a hot, dry summer, they will attack the succulent stems of the Artichoke, for about a foot above ground, in such numbers that if left alone they will suck them dry, and kill them in a short time.

Culture.—Although, as before stated, the Artichoke will thrive in any kind of soil and in almost any situation, yet to grow it well, solid, and of a nice flavour, a good deep sandy loam, free from trees, is the best. This should be well trenched—that is, deeply—in winter, cast up into rough ridges, to sweeten and pulverise, and the bottom of each trench, as cleared, should be forked up with a strong fork and left loose; plant any time in the month of February; choose moderate-sized tubers, and place them at the bottom of every alternate ridge—that is, supposing the ridges to be 2 ft. apart—and place the tubers 2 ft. apart in each row; tumble the ridges down on them with a fork roughly, to be hoed or scarified amongst the plants as they appear above ground, keeping a loose, healthy earth surface amongst them by repeated scarifyings, &c. The tubers will soon grow on and take care of themselves; and if subjected to deep culture and cleanliness, the Artichoke will grow from 10 ft. to 16 ft. high, and produce immense crops, such as no other tuberous-rooted plant will in our climate. They are at their prime for culinary use from the middle of October till March.

They are generally boiled, but they are greatly improved in flavour and solidity by steaming them—a good handful of salt being placed in the water. They are also very good baked, or cut into slices and fried in the same way as Potatoes; and are also valuable for feeding poultry and pheasants. By long practice in their culture it has been found best to leave them in the ground where they grow till wanted; after being ripe, cut off the stalks a foot above ground, in order to know where the rows are, and to prevent the wind blowing away the protecting material, which in winter should be placed a few inches deep over the surface. This may consist of leaves, Fern, or light litter; and should have something placed on it to prevent it being blown away by the wind.

The tubers may be all cleanly trenched out in February, casting the covering refuse in the bottom of the trenches, the ground roughly levelled and planted again in the spaces between the previous rows. The Jerusalem Artichoke may be advantageously used as a screen in summer, to shut out unsightly objects, and if in positions where they can get plenty of sun and air, good tubers may be had from them.

When used for this purpose it is not necessary to make fresh plantations every year, but simply dig up the best of the tubers and allow the small ones to remain; if the soil be moderately rich, they may be grown in this way for years.

In open situations it will be often found necessary to afford some support to the plants, otherwise they are liable to be broken by the wind. Strong twine fastened to stout poles driven in the ground, answers as well as anything. Watering or mulching is not required except in very poor, shallow soils, when it may be applied with advantage. The botanical name of the Jerusalem Artichoke is Helianthus tuberosus. S.

Yield of Potatoes.—I planted 1 cwt. of Champion Potatoes last spring, and the exact yield was 25 cwt. of large eating Potatoes, and 7 cwt. of seed. The ground was newly broken up grass land. I have grown the American Rose over 1 lb. in weight, and I find them always wet in the early season, but if used later on they are like flour.—G. H. PRESTON.

Preserving Turnips in Winter.—Severe frost injures the tissues of almost all vegetables, and, with one or two exceptions, spoils their flavour and destroys their keeping properties when thawed again. When Turnips are grown in drills, and have room enough, it is a good plan to draw a little earth up over the roots with the hoe on each side the rows, but this need not be done till just before frost of a severe character is expected. This will, in a great measure, prevent that alternate freezing and thawing that does so much injury, as the

plants may be pulled up intact just before frosts sets in, and be laid in shallow trenches, just burying the bulbs. They will keep in good condition for a long time in that way. A few should, however, always be stored away in some cool place to be at hand in bad weather.

Early Peas under Glass.—Unheated glass structures, no matter what form they may have, are most efficient aids in forwarding early produce; and those who have abundance of such conveniences stand in a far better position than others whose means are limited. Peas of Tom Thumb, Blue Peter, Multum in Parvo, or any other of the dwarf growing kinds, sown now in boxes or pots, and placed under glass in a light position, will yield a good and certain crop earlier than could, under the most favourable circumstances, be obtained from an unprotected border. In the open border I find wire protectors to be great conservators of warmth, more so than anyone would believe who had not tested them side by side with rows unprotected, and they also, during the early stages of growth, which are generally the most critical, protect them from the depredations of sparrows.—E. H.

Good Onions.—One of the best cultivators of Onions I ever met with invariably grows them on the piece of ground which previously contained Celery. As the Celery is cleared away, the ground is trenched to the depth of 2 ft. or thereabouts, according to the depth and fertility of the soil; and his ground being a little stiff, he adopts the practice of throwing the rotten dung from the bottom of the trenches to the top. In dry, frosty weather, when the ground is frozen to the depth of 4 in. or 5 in., the frozen lumps are beaten to pieces with a mattock, and the surface of the ground left rough. About the last week in February or the first week in March, according as the weather proves dry and favourable, the ground is slightly forked over and the surface left as level as possible. In the course of a week, fowls' or pigeons' dung is thinly spread over the surface; and should the ground be damp, in addition to the dung, some charcoal dust is added, in order to make the ground work as freely as possible. The charcoal is also considered a fine manure for the Onion. Then the manure is forked in and the ground raked as level as possible. The seed is sown in drills 1 ft. apart, and they are not divided into beds, as it is thought to be a waste of ground if provision be made for paths. As soon as the plants are well through the ground, the hoe is used between the rows, and any weeds that may have put in appearance among the plants are removed by hand. As soon as it can be done, thinning out is proceeded with, and the plants are left from 4 in. to 5 in. apart in the rows; and hoeing and hand-weeding are continued as often as requisite. Grown in this way, fine symmetrical bulbs are formed, with but a very slight admixture of a coarse thick-necked type, for seed is saved only from the best-developed bulbs. When the bulbs are fully ripe, they are pulled up, and after lying on the ground for a few days they are brought into a shed to finish drying. In a wet season they are put into a frame or Vinery to dry, or into a Mushroom house where a little fire is kept on, in order to get them thoroughly dry, as the keeping of them entirely depends on this. A few are always selected for exhibition purposes. In dry weather these are helped with a little weak liquid manure, and as the necks begin to swell they are pinched by the pressure of the finger and thumb, so as to throw the strength of the plant into the formation of the bulb, and to secure that desired fineness of neck and firmness of bulb always so requisite in the eyes of good judges on the exhibition table, and also for Onions which are intended to be kept through the winter for use in spring.—R.

House and Window Gardening.

Dieffenbachia Picta.—All the Dieffenbachias are extremely handsome plants when young and well grown, but as they get old their stems become long and naked. The ease with which they may be propagated, however, renders this defect the less to be regretted; for, immediately they get "leggy," they should be decapitated, removing along with the crown an inch of bare stem. Insert this in a brisk bottom heat in a close, moist, and well-shaded frame within the plant stove, or under a hand-light in the same situation, and a new stocky plant, well furnished with foliage to the root, will be the result. Nor does this decapitation finish the task of the stem, for if it be kept in the pot it will soon emit shoots, those at the top being the most prominent, all of which can be taken off and treated as cuttings. By cutting the stem into as many pieces as there are joints, and laying them in sand kept moderately moist and in a warm temperature, they soon form plants. As window plants in summer, Dieffenbachias are very useful, their beautifully variegated leaves, together with their tropical appearance, rendering them great favourites. For house decoration it is not, however, advisable to have them in large pots, six-inch ones being sufficient, especially in cases in which they are placed within vases. When associated with Ferns, Alocasia metallica, and a few other plants, within a Wardian case furnished with suitable means of ventilation and good drainage, and situated in a warm room in a shady window, they form beautiful and lasting objects. A compost of equal parts turfy loam and fibrous peat, together with some well-decomposed manure and a little sand, suits the Dieffenbachia perfectly, but a little extra loam should be mixed with the soil for potting such plants of it as are destined for house decoration.

Dieffenbachia picta as a room plant.

A Good Table Plant.—Casuarina sumatrina is a very pretty plant when in a small state for table decoration, or the sprays of it may be used in many floral arrangements, and they are even more delicate in appearance than Fern fronds, and the soft green of its thread-like growth contrasts well with the deeper colour of its stem and older branches. For the adornment of cool conservatories this plant is well adapted, as it excels in appearance many plants grown for the effect their foliage produces, and which require a high temperature for their proper development.—J. L. M.

Convolvulus Mauritanicus as a Basket Plant.—This Convolvulus makes a beautiful basket plant at this season of the year when properly treated. Obtain established plants of it in six-inch pots, and in autumn place them in wire baskets filled with Moss. Thus situated, the slender branches droop gracefully over the edges of the baskets, and, if placed in a light position near the glass in a warm greenhouse or window, yield a profusion of pretty blue flowers all the winter.—S. C.

ROSES.

NATIONAL ROSE SOCIETY.

A SHORT account of the recently-held annual general meeting of the above society may interest those of your readers who grow and admire Roses.

There will be three shows in 1881, viz.:—July 2nd, at the Crystal Palace, Sydenham; July 14th, at the Botanical Gardens, Sheffield; and in September at the Botanical Gardens, Manchester, in connection with the Fruit Show. The schedules are most liberally drawn up, and give to all alike—nurserymen and amateurs, large and small—a fair chance of competing for the valuable prizes.

The Rev. Canon Hole, president of the society, will be asked to give a lecture on "Rose Culture" on the occasion of the provincial show at Sheffield.

The executive committee of the society will shortly compile a catalogue of the best Roses, giving date of introduction and raiser's name, together with full description as to colour, growth, &c. This will be a thoroughly reliable work, and it is thought that it may be sold for, say, 6d. per copy.

It was decided to accept the invitation from Bath to hold the provincial show there in 1882.

The funds of the society are in a satisfactory state, the balance in hand being £104. The secretaries of the society will be happy to give any further information to inquiring and sympathising friends, or I will do so.

Burton-on-Trent. WILLIAM WALTERS.

MARECHAL NIEL ROSES.

THOSE who are desirous of keeping up a good supply of cut Roses during the winter and spring months should get some standard Maréchal Niels, and also dwarf plants of that Rose, to grow on for another winter. Maréchal Niel, although one of the finest Roses for cutting purposes, is, nevertheless, not one of the most showy varieties for decoration in pots, inasmuch as the flowers hang down, and are hidden, to some extent, by the foliage. It is, therefore, best as a standard, but it is only in the form of cut flowers that I can recommend it. No Rose forces better than Maréchal Niel, and its flowers are always much admired when used for decorative purposes. Plants of it potted now will furnish a few flowers during the spring. When June comes those that have done flowering should all be shaken out of their pots and re-potted, so as to give them time to make growth for she following winter's forcing. I have cut fine flowers of this Rose at Christmas and on New Year's Day, but that was from plants the wood of which was strong and well-ripened—important points in the case of Roses that are forced early. In order to ripen the wood well, the plants should be placed in a warm, dry spot out-of-doors, watering very sparingly during the months of September and October, and replacing them under glass in November, or somewhere free from frost. When started for forcing they should be plunged in a bottom-heat of from 65° to 70°, giving top air for the first fortnight, so as to keep the tops of the plants cool, in order to check their breaking too quickly and feebly. If pushed on too fast we do not get a good break, and this Rose generally produces its blooms on the strong shoots. As the buds swell the heat should be increased from 55° to 60°

In Rose forcing, a strong top-heat should be avoided, as the flowers become drawn and sickly, and will often damp off before opening. Syringing, too, must be stopped, as water blackens the flowers and causes them to damp off. As soon as the blooming period is over, the plants should receive a slight pruning, and as soon as they begin to make a second growth—

about the latter end of May or beginning of June—they should be carefully examined and potted, removing most of the old soil; if any plant looks sickly, wash the roots clean, and then re-pot it in a compost consisting of half loam, one-fourth rotten cow-manure, one-fourth one-year-old leaf-soil, and plenty of sand and a small portion of soot, mixing all well together. The plants should then be plunged and grown in a humid atmosphere during the months of June, July, and August, watering occasionally with a little weak manure-water, and syringing night and morning till they have made their growth. Sickly standards, as well as dwarf Roses, should be treated in this way, and as soon as they have made or finished their growth they should be removed out-of-doors and set in some warm corner.

I have grown plants of Maréchal Niel with shoots from 10 ft. to 14 ft. in length in one season, and plants of it in 18 in. pots have produced from sixty to seventy blooms during the forcing season. Standards also flower well; they do not last more than three years in pots, but good strong plants of Maréchal Niel are so very cheap now that one does not mind the loss of a few plants. I find that Maréchal Niel on the Brier, and on its own roots, does best for pot culture as well as for other purposes. It grows very strongly on the Manetti stock, but two or three fine plants of it have gone off with me at the graft or bud. The Brier, in my opinion, is the best stock for it, if we wish to obtain its flowers in perfection. In selecting standards for pot culture, see that they are budded on good, clean, healthy-growing stocks, for if the stock be soft and sappy they will not succeed in pots. Rose-growers should always lay up in autumn some good rotten cow-manure, and keep it until the following season, so as to have plenty for potting purposes, as this material forms an important item in the soil for pot Roses if used in proper proportions. G.

Good Greenhouse Roses.—I have a house that is planted with Camellias, and Roses—principally Teas—are planted out amongst them; some of them are against the pillars that support the roof, and are trained along the rafters, partly for shade to the Camellias; others are trained to upright poles until they get above the Camellias, when they are allowed to spread just as they like. The blooms which they furnish for cutting are extremely useful, coming in, as they do, when the Camellias are failing. The first to bloom is the White Banksian, which flowers early in March, and continues to do so until the end of April. It is generally in full bloom at Easter, a season when white flowers are in great request; few white greenhouse climbers can equal it at that period. It covers a large roof space. All the pruning which it gets is done when the bloom is over; then nearly all the shoots are cut back to the main stem, an operation which causes it to push strong shoots, from 6 ft. to 10 ft. long; these are allowed to hang down as they like, and the following spring they are covered with bloom during their entire length. Maréchal Niel is trained to the rafters, and does well, coming in after the Banksian. Cheshunt Hybrid is a good dark-coloured, highly-scented Rose, and one which makes a good climber, but it is late in blooming, not coming in until the Maréchal is nearly over. Gloire de Dijon does well, but its colour is not so fine indoors as out; Catherine Mermet is one of the best; Adam Bell, Lyonnaise, Madame Sertor, Madame Willermoz, and Rubens all do well with me. I have tried several others, but for some reason or other they do not answer for greenhouse culture. Green fly does not trouble them much, perhaps because I use plenty of water at the roots and overhead, applying it in the latter case with the syringe. I have nearly always some buds fit for cutting.—N.

Umbrella-shaped Rose Trees.—We grow most of our dwarf Roses on the long-rod system, viz., cutting out the old wood at the winter pruning, and retaining the strongest annual growths, which are pegged down, at certain distances apart, with long stout pegs, cut from the refuse Pea sticks. On the summits of the Rose-banks, standards of free-growing kinds, such as Charles Lawson, are planted and pruned in a similar manner as the dwarfs, the points of the shoots being tied to pegs driven in a circle round the tree. By this means they form regular-shaped and beautiful heads, for the shoots break regularly into growth from every eye, and when in bloom form beautiful objects. —J. G.

THE SHRUBBERY.

Forming Shrubberies.—In the first formation of shrubberies a formal outline may be excusable, but the sooner the shrubs are permitted to grow over and through it, unless it be bounded by a path, the better. I have often thought the common practice of leaving a marginal border round masses of shrubs for flowers a mistaken one; too often, when such is the case, they present but a littery, rubbishy appearance. Can anything add to the beauty of a well-developed shrub springing direct from the fresh green turf? I think not; therefore let the Grass grow close up to the shrubs, without any bare soil intervening, and the different habits and styles of growth of the different

British Barberry (Berberis vulgaris).

shrubs in a well-arranged group will always give that variety of outline which is so pleasing. Of course, a little pruning may be necessary. Art may be permitted to mend Nature, so far as to stop or remove a robber shoot that is likely to destroy the balance of power in the plant. This is requisite in almost every form of tree or shrub growth. In the Grassy glades that intersect masses of shrubs, and which, when well and tastefully arranged, add so much to their picturesque appearance and beauty, groups of the more striking herbaceous plants may be used with good effect. Thus, a group of herbaceous Pæonies planted out in the Grass a few feet from its margin, in front of a mass of shrubs, has a far better effect than when growing in a crowded condition under or among the shrubs themselves. And the same idea could be worked out with many other plants, such as hardy Fuchsias, the autumn-flowering Anemones, and notably the Polygonums, such as Sieboldi and others. This appears to me to be the true way of bringing out the decorative force of any handsome or striking plant, but it must not be overdone. A single group of any suitable subject, well placed, would have a very striking effect; but to overtask the turf in this way would be ruinous. The great evil often noticed in the treatment of any given object is carrying the idea too far. It does not follow because a particular group in a certain position may look well and pleasing, that an increase in the number of such groups would have the same effect.—E. H.

Close-growing Plants for a Wall.—Those who wish to cover a wall with plants that require no training or nailing whatever will find the following to suit their purpose—viz.: Ivy—Hedera pulchella marginata (silver-leaved), Hedera aurea densa (golden), and Ampelopsis Veitchi. These three cover the surface of the wall evenly as they grow, and lie as close to the stone almost as if they were pasted on, and are at the same time very pretty. The Ivies show up brightly in their gold and silver variegation during winter and spring, and the Ampelopsis is successively bright green, dark chocolate, and crimson from May till Christmas, or later. If these be planted in a tolerably good soil they will grow rapidly and need no further attention. There are other Ivies nearly as good, but these are amongst the best, habit and colour of the foliage considered. As a berried plant the Cotoneaster Simmonsi may be added to the list. It also grows very flat and close to the wall, but wants just a nail and a shred here and there to keep the shoots in their places.—S.

Berberis vulgaris.—This is a British deciduous plant, growing to a height of 8 ft. or 10 ft., and bearing clusters of bright scarlet oblong berries. It forms a noble object on the margins of shrubberies or planted in groups on sloping banks and other conspicuous positions. Young plants are best, as old plants become "leggy" and unsightly. It will grow in any moist garden soil. The berries are often preserved in syrup or in salt for garnishing purposes during the winter, and they also make excellent refreshing preserves. Sometimes they are pickled in a green state. The fruit is sometimes seedless, and this is considered the best for preserving; but this character is not permanent, as young plants taken from those bearing seedless fruit will bear perfect fruit containing seeds.

Virginian Creeper scrambling over Shrubs.—The effect of allowing this beautiful creeper to ramble in this way is rich and striking. At a distance it looks as if the shrubs were clothed with glowing red fruit of enormous size. Looked at through the rays of the setting sun, nothing can be more rich and beautiful; the leaves seem aglow with crimson and gold, as if the rays of sunlight were passed through as well as reflected from them. As these plants seem to do little or no injury to the shrubs, they ought to be more frequently mixed among them and allowed to ramble at will for effect. They are far more beautiful thus than against walls. The colours may be equally or more brilliant on the walls, but the free growth and drooping branchlets give a grace and elegance unattainable on walls. Home plantations, as well as shrubberies, might often be draped with this charming plant. Its chief fault is the fugitive character of its brilliant colouring; hardly does it reach its best than the leaves begin to fall, but as a free, rambling plant, the Virginina Creeper is interesting and beautifnl at all stages of its growth. The ample size and verdant colour of its leaves, the drooping beauty of its shoots, and the interesting character of its clinging stems and tendrils, have been too much lost sight of while impatiently waiting for the fiery colour which heralds the fall of its leaves. —T. F.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 3.—Sowing Sweet Peas under the protection of a hedge; also in pots; potting autumn-struck Heliotropes; putting in a few Senecio cuttings in order to get up stock; also Vine eyes, Croton, Scutellaria, Petunia, and Calceolaria cuttings in heat (this being the best time for spring striking); putting Dahlias into heat for cuttings; planting standard Apple trees, Penny Royal, Fennel, Tarragon, Chives, and Lavender, and transplanting Lettuce; putting into slight heat a few Wallflowers weekly; also Kalmia latifolia; putting Salvia patens into heat for cuttings; placing Potatoes in loft very thinly to sprout for planting; looking over Pelargoniums and picking off damped leaves.

Jan. 4.—Digging ground for Onions; sowing some seeds of Viola cornuta, putting them into heat, and covering them with glass; also a box full of Red and White Celery; also Wood's Early Frame Radishes in pit, to come in middle of March; finishing potting Dendrobium nobile, and beginning with others, using very fibrous peat; planting Lilacs and Honeysuckle; planting Lavender and Wallflowers; putting a few Forget-me-nots in slight heat; laying turf wherever required; making leaf-bed for Carrots and Potatoes; pruning dwarf Apple trees.

Jan. 5.—Potting all Odontoglossums except a few nearly in flower, using Sphagnum and peat; also some Sweet Briers; putting in a good quantity of Carnation cuttings for blooming in October; also Fuchsias in heat for cuttings; planting some young Gooseberry trees; putting in Feverfew and Chrysanthemum cuttings.

Jan. 6.—Sowing seed of Salvia patens; potting Hollyhock cuttings; putting in cuttings of Achyranthes and of Tree Carnations; planting Hypericum calycinum under Oak trees, where they grow well; planting Rhubarb; shifting herbaceous Calceolarias into their flowering pots; covering up Celery with litter during frost only; giving Maréchal Niel Roses in pots a rich top-dressing; also Oranges; filling two-light frame with soil for Carrots and Radishes; cleaning Creepers in conservatory.

Jan. 7.—Sowing Syon House Cucumbers, and keeping them at 65° at night, 70° by day; giving Roses planted out in conservatory a top-dressing and watering; plants ready for house decoration: Lily of the Valley, Narcissus, Heliotropes, Hyacinths, Tulips, Callas, Sweet Briers, Deutzias, Scented-leaved and Scarlet Pelargoniums, and Mignonette.

Jan. 8.—Potting imported bulbs of Lilium auratum and placing them in a cold, shady house; also some yellow Calceolarias for early flowering; pricking off seedlings of Lobelia speciosa; planting Spiræa japonica, dividing the roots; also Daphne Cneorum and Schizostylis, and dividing them into small pieces; putting in another forcing of Rhubarb; looking over Apple and Onion stores.

Flower Garden.

Gladioli.—Bulbs of these should be looked over to see if any of them have suffered during the winter. If it is intended to purchase any new varieties they should now be obtained.

Hollyhocks.—It is necessary to propagate these early in the year, especially in northern districts, in order that the plants may have a chance to produce good spikes before the damp nights or rainy days of autumn prevent the flowers from opening well, or cause them to decay as soon as they are open. Plants of any scarce varieties may be placed in a little heat to start them into growth, and when the cuttings are long enough they may be taken off and started in a little bottom heat—just sufficient to feel warm to the hand. Cuttings put in late last year must be looked over, and any that may not yet have formed roots should also be placed in a little bottom heat. Those that are rooted may have the withered leaves picked off, and otherwise receive any attention which they may require. The old stools of ordinary sorts winter well in cold frames, if these are placed in a position well exposed to light and air; a damp situation must be avoided.

Glasshouses.

Orchids.—In cool Orchid houses carefully avoid using an excess of fire-heat, as nothing is more hurtful than a dry, arid atmosphere. Cool-house plants will require to be kept rather moister at the root at this season than any other Orchids. The temperature should not be allowed to fall below 45°, and it should not be pushed above 48° with fire-heat. Give abundance of air to this house whenever the outside thermometer stands above 48°, especially in calm weather.

Greenhouse and Stove Plants.—Any plants coming into flower should have a little extra encouragement at the root in order to enable them to develop fine heads of bloom. Established plants of Eucharis that have flowered late in autumn should be liberally fed, in order to recuperate their energies, when they will yield another crop of bloom as the days begin to lengthen. Keep the majority of the plants as near the light as possible, and maintain a temperature just sufficient to keep up a healthy circulation of the sap. Choice small plants, such as Sonerilas, Bertolonias, &c., will pass through the winter safest on a warm shelf near the glass, and should now be kept moderately dry at the root. Any plants infested with mealy bug or scale should be examined regularly every alternate day, with the view of thoroughly exterminating these pests. Plants of a woody character, such as Gardenias and Ixoras, on which mealy bug is troublesome, may have their main branches painted over with a weak mixture of tar and clay. This quickly makes short work of these insects, and has the additional advantage of sealing up their hiding-places on the branches. Hard-wooded plants must be kept well ventilated and carefully watered, giving sufficient of the latter at each watering to moisten the whole ball of earth equally throughout. Any plants affected with white scale should be thrown to the rubbish heap, as it is an almost hopeless task to clean them. Heaths are especially liable to suffer from mildew during damp weather, and any affected in that way should have a dressing of sulphur, blown off the palm of the hand amongst their leaves and stems.

Ferns.—Attention must be paid to the deciduous kinds of Ferns, which are apt to be neglected when divested of foliage. They should be kept moderately moist at the root all through the winter, otherwise much of their strength will be lost. The powdered varieties of Gymnogramma require a warm, dry atmosphere during the winter. Large plants of these should be frequently examined, and any parts damped off should be at once removed. Some of the more delicate varieties of Cheilanthes and Nothochlæna must be kept carefully watched, as, owing to their tomentose character, they are very liable to suffer from damp. Avoid giving Gleichenias too much heat; a temperature of from 45° to 50° will carry them safely through the winter; the only exception is G. dichotoma, which requires warmer treatment.

Fruit.

Vines.—A good Grape room should be dry, well ventilated, and heated with pipes from a boiler outside; but fire-heat in a room that is not subject to sudden fluctuations will only be needed when the atmosphere is damp or the temperature falls to 40°. The bottling system being now so well understood and appreciated, this portion of the routine may be dismissed with the statement that the most successful preservers of late Grapes have found the first week in January to be the best time for the final cutting. Immediately after the removal of the Grapes the Vines should be pruned and cleansed, in order that they may have a good three months' rest.

Strawberries.—The first week in January is a very good time for taking in the first batch of Strawberries in pots, provided they are in every way satisfactory, and unless this is the case it is useless to attempt forcing. Select the most promising in the smallest pots from one or more of the best kinds, wash the pots and examine the drainage before taking them indoors, and when the balls have become moderately dry, ram each plant, top-dress and place them in a light, airy situation, where they can be easily tended with water. Where Peach houses and Vineries have to do duty for a properly-appointed Strawberry house, it is much easier to lay down rules for the management of the plants than it is to carry them out; but one thing is certain, the Strawberry under glass must be started and carried on to the "setting" stage at a very low temperature, say from 40° to 45° at night with a rise of from 10° to 15° more by day, according to the state of the weather.

Vegetables.

As soon as the ground will admit of it, a border should be prepared for the earliest vegetables and salads, such as Peas, Carrots, Radishes, and Lettuces. The most sunny, sheltered, and driest situation in the garden should be selected for these early sowings, and they should have all the cultural aid that can be afforded, in order that they may the sooner supplant the crops of the same kinds now being forced. In this latter department, see that supplies do not run out from want of regular introduction of fresh roots. Seakale requires to be put in fortnightly, and Asparagus once in three weeks, in order to maintain a constant supply. For salads, a few Chicory and Dandelion roots should be planted in sand in any dark warm shed every week, and a few plants of Endive at a like interval will ensure a constant supply. When, through stress of weather, work runs short, hotbeds of leaves and stable litter can be made up for forcing Potatoes, Carrots, Turnips, Radishes, Lettuces, &c. Such forcing beds retain the heat longest when leaves preponderate—say two-thirds of leaves to one of litter. Frames may be placed on them as soon as they are formed, and on about 9 in. of light soil the seeds may be at once sown. If Potatoes are planted, the frames will require to be covered with mats to protect the tops from frost as soon as they peep out of the soil.

GLASSHOUSES AND FRAMES.

CONSERVATORY CLIMBERS.

Now that the short dull days of winter have arrived, it is high time to give attention to the thinning and regulating of all kinds of conservatory climbers, in order that the light and air which they obstruct may be allowed to have full play for the benefit of the plants beneath them. Much judgment and discretion, however, are necessary in doing this, for without a full knowledge of the habits of the different varieties and their mode of flowering, whether on the old or young wood, a good deal of mischief may be done. If we take the Bignonias, for instance, and remove the long dependent shoots made during the present year, we take away the bloom that would appear in the spring; and the same would happen in the case of the Lapagerias and others; but to prune out such from Passifloras, Tacsonias, and similar plants is a work of necessity, in order to allow room for fresh shoots to occupy their places. Those of the current season having so far served their purpose, at least two-thirds of them formed during the summer may be removed, leaving the remainder till fresh growth has made some progress, when they too should be cut away, except such as are likely to be required for laying in to fill vacant places.

This kind of treatment leaves just sufficient foliage to keep the roots slowly at work and the sap in circulation to feed the spurs and plump up the buds left near their base. The almost perpetual flowering character of Tacsonia exoniensis and T. Van Volxemi is such that it is impossible to cut away anything from them without sacrificing some bloom at the extreme tips of the pendulous shoots, and the only way to keep them in order is to be constantly regulating and encouraging the young ones, and gradually cutting out such as are getting too long or becoming exhausted. This will prevent undue crowding, and will allow their flowers to be seen to the best advantage. There is no way of growing these equal to having them in a lofty ridge, with just the main stems made secure, and the lateral branches allowed to depend straight down overhead, which is far more natural and effective than any kind of training, however well they may be carried out; indeed, these and Passifloras are only adapted to this mode of culture, and exceedingly graceful they are when well cared for and not allowed to get into a wild, entangled condition.

The great drawback to Tacsonias is their liability to scale, that often assails them to such a degree as to have the appearance of being splashed with minute spots of whitewash, and this kind of scale is, of all others, the most difficult to kill. The best remedy I have ever found is to paint the bark of their stems over with some Fowler's insecticide, mixed with clay, so as to make a thin wash similar to what Vines are usually dressed with, and this stifles them and keeps the plant free from attack for some time after. Paraffin used at the rate of a wineglassful to four gallons of water is a sure cure, and being so easily and quickly applied, as it may be by means of a syringe, is a great boon. Lapagerias, like Tacsonias, are also very subject to the same kind of insect, and likewise thrips, especially if they happen to be in houses where

the atmosphere is a little too dry, or other conditions not altogether favourable to their growth. Handwashing these is a difficult and tedious process, owing to the stiff and peculiar formation of the leaves, and here, therefore, the paraffin will be of rare service.

In regard to the general treatment of Lapagerias, the thing is to encourage as much young growth as possible, and the way to do this is to give an abundant supply of water from the beginning of April to the end of October, which will assist it through its flowering period as well. In Chili, its native habitat, it blooms during the rainy season, when the sky is dull and overcast, thus showing that it is fond of a good deal of moisture at that time; but when we look at the structure and immense substance of the flowers, they afford convincing proof that it must take abundant supplies to feed them. If well drained, and in a bed composed of rough fibry peat, as they should be, it is impossible during the summer months to give too much water, as they will nearly grow in it if it be not stagnant or remain too long in the soil to cause it to become sour and inert. The shoots of Lapagerias flowering only once they should be cut away when the blooms die off, unless it may be thought desirable to save seed. These come on pods of various lengths and sizes, and germinate readily when ripe, if sown in heat in sandy, peaty soil kept regularly moist.

Next to those already mentioned, I think Tecoma Jasminoides one of the most desirable of conservatory climbers, but to get it to flower freely it must have a very light house, with full exposure to the sun, in order to get the wood well ripened. Even with these advantages it is a shy bloomer when planted out where its roots can run unrestricted; and the way to produce the most satisfactory results is to confine it to a limited space, and keep it rather short of water during the early part of the autumn and winter. The habit of this, like the Bignonias, is to flower on the growth of the previous year, and the pruning, therefore, must be regulated accordingly.

Besides the general cleaning and regulating of all kinds of conservatory creepers, the present is the best time for adding to or renovating any old borders that may have become exhausted, or the soil in an unsuitable state for healthy root action, as, owing to the semi-dormant condition the plants are now in, they will bear more pulling about than at any other season. For the generality of them there is nothing better than good sods of fibry peat and loam chopped up rather coarse, and a liberal supply of sand added to keep it open and porous. If from 6 in. to 12 in. of this mixture is given, and a covering of the old soil laid over the top, it will result in a greatly increased state of health of the plants and a more floriferous habit.—D. S.

Filmy Ferns (Todeas).—The culture of these handsome Ferns is in many cases limited, on account of there not being in gardens suitable places in which to grow them. Any one, however, having a conservatory or greenhouse may easily cultivate them with little trouble or expense. Where beds exist in the conservatory, little semi-circular nooks may readily be formed in them by taking out some of the existing soil, and building all round with peat cut into convenient-sized turfs. A sheet of glass should be placed in front and one on the top, and the Ferns, which may either be grown in pots or pans, and placed on a little white gravel, or planted out, will, if kept moist, grow vigorously, and, in some cases, succeed even better than those for which more elaborate provision has been made. The idea was suggested by Todea Ferns similarly situated in the large conservatory in the Royal Botanic Gardens, Regent's Park; there, overhung with the fronds of graceful Palms and other plants, they succeed well, and have an interesting appearance. The walls of peat are rendered much more effective when covered with club mosses, small-growing Ferns, Fittonias, Ficus minima, and similar plants.—S.

Cestrum aurantiacum.—For training to pillars or rafters this fine climber is unequalled amongst autumn-flowering greenhouse plants, and it is, moreover, a plant requiring the simplest culture. It should be planted in a bed of rich soil, and be cut hard back in spring. Thus treated it will not fail to produce every autumn a profusion of rich golden blossoms in long, drooping terminal branches, which contrast finely with the bold deep green foliage. Though it is a native of Guatemala, it has proved itself capable of withstanding the winter, with only the protection of a wall.—W.

An Ornamental Grass (Agrostis pulchella).—This very pretty ornamental Grass has been so useful to us for mixing with cut flowers for vase and room decoration, and so much admired when used in this way, that I have much confidence in recommending it to all who grow Ferns and other choice plants for producing fronds and sprays of green for this purpose. It is an annual, grows from 9 in. to 1 ft. high, and when used as above it gives elegance to flowers so arranged, such as is rarely met with. Sown annually at the end of May in small clumps on the herbaceous or flower border, and covered slightly with fine soil, it will grow freely, and be very acceptable for cutting at a time when the beauty of many things grown outside is fading. It requires no more care while growing than keeping free from weeds, and a few small stakes and matting placing round the clumps to prevent the wind from blowing it to the ground. We have grown it for several years very successfully as described above; but the present year, instead of sowing it outside, we sowed a few 6-in pots. with it, placed them in a little heat until the seedlings were up, and then removed them to a cold frame, intending finally to plant it out without breaking the balls of earth; however, our borders were so full of other gems we could not find room in which to plant it, so we placed the pots on ashes for a few

Ornamental Grass (Agrostis pulchella) for pots or borders.

weeks in the summer, and took them into a cold greenhouse at the end of September, since which time from a limited number of pots we have been cutting regularly, and shall be able to continue doing so for some weeks to come. It will keep well in any part of the greenhouse where it can have some degree of light, and the soil in which it is growing kept moist. We cut the finest spikes first with a pair of narrow-pointed scissors; this allows the lesser spikes to develop as large as those first cut. All who have seen it growing in pots think it very pretty, and have wished to know the name of it that they might grow it for themselves.—T. J.

Anderson's Speedwell (Veronica Andersoni).—This is one of the best of the larger-growing Speedwells for winter flowering in pots, and its deep blue blossoms are valuable in a cut state, or on the plant they supply a colour in the conservatory by no means plentiful. In mild winters it sometimes lives out of doors near London. Cuttings struck in spring and grown on into 6 in. pots, or planted out in June in good soil, and lifted and potted in October, make bushy plants for Christmas.

Pompone Chrysanthemums. — The neat little plants of this section, to be found in the London markets in autumn, are the produce of cuttings inserted in cold pits or frames, or under hand-lights in June. These cuttings are obtained from old plants grown in some stray corner for the purpose. They are planted thickly in sandy soil, well watered, and kept shaded until rooted, when air, light, and sun are freely admitted to them. When well established, they are transplanted in an open border of sandy soil 18 in. apart. Stopping the shoots is practised, sometimes twice, the last time being just before they show bloom-buds. They then make dwarf bushy plants, which are lifted and potted in 5-in. or 6-in. pots, as soon as the buds are set, and placed in a half-shady situation until frost appears, when they are taken under cover until they come into flower.—S.

Hyacinths and Tulips for Winter-flowering.—These, as well as Narcissi and other bulbs, are now being forced for market by thousands, one grower alone using as many as 80,000 bulbs yearly. They are potted in 6in. pots as soon as received from Holland in autumn, and are placed in square beds out of doors, and thickly covered with Cocoa-nut fibre. This, being light, can easily be removed in order to select the most forward bulbs from time to time for placing in heat. In order to discover which are ready for forcing, they are turned out, and if well-rooted are taken indoors, plunged in a gentle bottom heat, and kept dark until their flower heads show themselves; light being afterwards gradually admitted to them until they will bear full exposure. The first batch of Hyacinths and Tulips is sent to market the day before Christmas, if possible, and a succession is henceforward kept up until they come into flower naturally out-of-doors. Roman Hyacinths are also grown in considerable quantities. They bear rapid forcing, and come into flower from October to Christmas, when flowers are scarcest. They are forced, as a rule, in shallow boxes, and potted four or five bulbs in a 6in. pot just before they come into blossom. They are also largely used in baskets and vases, but their chief value is for making bouquets, as, on account of their sweet-scented pure white pips, they can be used for such purposes, with the certainty that they will be appreciated.—S.

FRUIT.

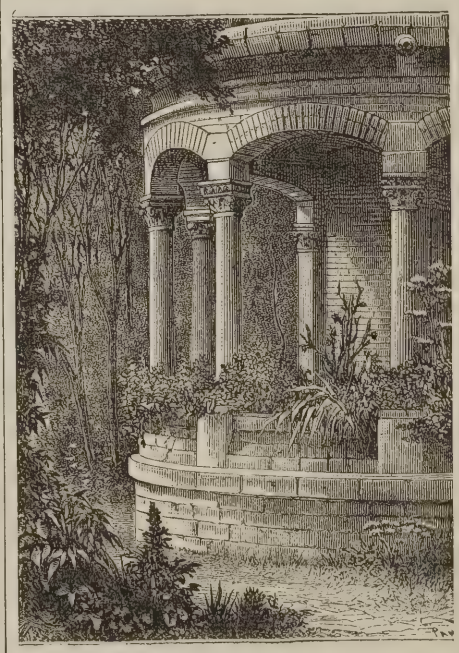
Winter Covering Fig Trees.—Although the wood of Fig trees will withstand any ordinary frost without injury, it is best to be prepared against exceptionally severe weather, as I find trees of several years' standing to be much more fruitful than young, fresh-planted ones, which even in poor soil will produce shoots of too luxuriant growth to either withstand frost or produce much fruit; and, as the labour involved in protecting is trivial compared with the crops which a few good trees may be relied on to yield, I find it best in our uncertain climate to cover the trees about the first week in December. Our trees, which are fan-trained, are unfastened from the wall, and the wood is laid in a bundle at its base, where it is easily covered with any available material. We use Reeds for the purpose, from their being plentiful on the marsh lands here, and therefore of little value; they are cut and stored in autumn, and they will last good for several seasons. We cover the bundles of shoots sufficiently thick to exclude light, as that, acting on the frozen wood, is probably more injurious than frost. As soon as all danger from severe frost is over, the covering is removed, when any pruning required is done, and the wood is again fastened in its former position. Short-jointed, well-ripened shoots will almost invariably produce a crop, even when other fruit crops fail. The longevity of Fig trees is proverbial; the finest and most certain-cropping tree we have is probably over 100 years old, and is annually laden with hundreds of fine fruit.—H.

Preserving Grapes in Bottles of Water.—I have often thought that if those who recommend this mode of keeping Grapes throughout the winter would not give such elaborate instructions about the "Grape-room," more people would be induced to try the system. We have no finely fitted-up Grape-room, and yet I keep Grapes, even tender-skinned ones, successfully in bottles of water. The place in which we keep them is an ordinary room, round the walls of which are several shelves about 9 in. wide, and to each of these is fixed an upright board about the same width. Along the top, every 4 in. apart, is cut a notch 1 in. wide and 1 in. deep. Quart wine bottles are set along the shelves as closely as they can be put; each bottle is filled with water, into which are

put a few pieces of charcoal, and laid in a slanting position, with the necks in the notches just alluded to. This is a simple way of erecting a Grape stand, but it answers admirably. Each bunch of Grapes is cut off the Vine with about 6 in. of wood attached to it; the end of this wood is inserted into the neck of the bottle so as to be about 2 in. in the water, and the bunch hangs over the front of the upright board. The mouths of the bottles are not stopped, and the water is never changed, but filled up as it evaporates; no fire-heat is used in the room, but daylight is admitted as in the case of an ordinary dwelling. During damp, sunless days, the windows are never opened, but at other times air is freely admitted. We have had some score of bunches of Black Hamburghs cut and bottled in this manner since the beginning of October, and not more than two berries in each have decayed during that time, all being plump and fresh, while some of the bunches left in the Vinery have lost half of their berries, and others are shrivelling; so that the advantages of bottling are very apparent. I may state that the room is kept at no given heat, but fluctuates with the outside temperature; frost must, however, be excluded.—C.

Renovating Unfruitful Vines.—It is a very common occurrence to meet with amateurs whose Vines are a source of continual annoyance to them, going on year after year bearing but very little fruit, and what they do produce of an inferior description, through shanking, a condition which may generally be traced to an unsatisfactory state of the roots, which have got too low down in damp, ungenial soil, or where there is an accumulation of stagnant moisture. In all such cases, instead of dallying with them and looking season after season for more satisfactory results, that are not realised, I should recommend the roots at once to he lifted, and a new preparation made; in the first place there should be sufficient drainage, which may consist of 8 in. or 10 in. in thickness of broken refuse—bricks, burnt clay, clinkers, stones, or anything of a similar nature that is most easily obtained; on this lay a bed of good ordinary new soil, of not a too light sandy character, and, if very heavy and retentive, add a sufficient quantity of sand, lime-rubbish, or burnt clay, to make it sufficiently porous without being too open. It will also be an advantage to add to the soil ½ in. or 1 in. of crushed bones at the rate of about a bushel to every three or four superficial yards of the border. In the absence of these, if the soil be not naturally rich, a moderate quantity of good rotten manure should be added. The work should be commenced by removing the soil at the furthest part of the existing border away from the front of the house they occupy, using forks for the purpose, so as not to mutilate the roots, which must be carefully dealt with and taken up as entire as the nature of the operation will permit; all the existing outside border ought to be removed, if there be an inside border as well, and if it be ascertained on examination that there is a fair amount of roots in the inside; if the border be all outside, about 3 ft. or 4 ft. of the portion nearest where the Vines are planted should be left undisturbed, as if the whole length of root were lifted so late in the season as this most likely they would not bear much next year, and lifting the lower extremities of the roots and placing them sufficiently near the surface in new soil will generally be found effectual. Before replacing the roots, they may be shortened to about half the length that has been taken up, spreading them out evenly, and bringing them to within 8 in. or 9 in. of the surface; when the work has been completed, on the top of all, 8 in. or 10 in. of litter should be laid, so as to throw off heavy rains and keep out frost, as if the soil were congealed down as low as the roots the latter would be seriously injured. If there happens to be any spare frame lights, wooden shutters, or, failing these, an old oil sheet, or anything that will ward off excessive rain, it will be a still further advantage. Many people are deterred from interfering with the roots of unfruitful Vines, and remaking the bed in which they are grown, under the impression that it involves a serious amount of cost and labour; yet such is by no means the case, as there is little difficulty in the matter when new soil can be had without considerable expense. I have found that the best time for lifting Vines is at the close of August or beginning of September, whilst the leaves are fresh and green; but in most cases with amateurs who do not start them early, they are bearing more or less of a crop either ripe or approaching maturity at that time; consequently the work has to be deferred until later on, often till the present season. Vines that are thus lifted should by no means be hurried in the spring, but left to come on with little, if any, excitement beyond that resulting from solar heat.—T. S.

Flowers on Walls.—There is a way of growing flowers on walls in various countries which deserves more attention than it has received with us. It consists of leaving the upper portion of a terrace or wall hollow, and using this for flowers. The crest of the wall is, in fact, a narrow flower border; but though narrow, with a space for 2 ft. or 3 ft. of soil from 1 ft. to 3 ft. through, thus giving ample root room for the production of a vigorous and graceful vegetation. The architect or builder can easily arrange for such wall-vases. The accompanying illustration shows the effects obtained in the slender wall of a small garden pavilion. We have often seen very charming effects produced in this way on the Continent, even in poor houses where little evidence of



Gardening on Walls.

other beauty was to be seen. By adopting the principle of variety instead of repetition in such cases, a beautiful garden of flowers might be grown on the crest of many a barren wall near, or part of, a town house. Hardy plants of a permanent character should always be chosen for such positions, and those with graceful foliage should have the preference. A top dressing of rich soil could be given yearly, and when well established, such plants as the smaller Yuccas, Acanthuses, &c., would make a charming effect.

Dicentra (Dielytra) **formosa.**—This has formed with me an excellent border plant during summer and autumn. It resembles the kind known as D. eximia, but is of a stronger and hardier habit of growth. It also flowers more freely, and its blossoms are larger and of a brighter rose colour. It forms an excellent band to a shrubbery, or isolated clumps of it in raised positions produce a good effect, or, backed up by a row of variegated Cornus, it has a fine appearance. In rich, deep soil it grows with great freedom, and flowers successively for several months. Its blooms are useful among cut flowers, and its leaves may be used in like manner as a substitute for Ferns.

Michaelmas Daisies.—Among the many kinds of these ornamental autumn-flowering Asters, few are more graceful in habit than A. pendulus and A. ericoides. Isolated in light, open places, these two kinds have been very attractive. The flowers are, of course, much inferior to such kinds as A. Amellus, but this loss is amply substituted by the profusion in which they are produced, as well as their longevity.

SELECTING AND PLANTING FLOWERS.

In selecting hardy plants for a small garden, preference should be given to those which have been improved into florists' flowers, as by using them a varied display of colour can be obtained with varieties of the same plant, which lessens the difficulties of soil and treatment.

A splendid and varied succession of flowers may be obtained from plants of the florists' classes without going in for the expense and trouble necessary to bring them up to exhibition mark, and in several kinds there are hardy, free-flowering varieties, quite as showy for gardens or cutting, and more suitable for ordinary border cultivation. Every garden of hardy plants should contain a selection, however small, of each of the following kinds:—

Flowering from March to June:—Early Tulips, Parrot Tulips, Alpine Auriculas, Border Auriculas, Border Polyanthus, Pansies, show and fancy, Ranunculus Turban and Turkish, Anemones coronaria, and stellata, single and double late or show Tulips, Pyrethrums, flowering in May and again in autumn.

Summer Flowering:—Pinks, show and fancy, Carnations, show and border, Antirrhinums in variety.

Summer and Autumn Flowering:—Pentstemons in variety, Chrysanthemum indicum in variety, Phloxes, early and late, in variety, Chrysanthemums, Pompones in variety. The varieties of each of these kinds vary from forty or fifty to several hundreds.

Of other hardy plants, the Iris and the Lily should on no account be omitted. The common German Iris has sported into many varieties quite worthy of being associated with the choicest florists' flowers, and the English and Spanish Iris are quite equal to florists' flowers in beauty and variety. Of the Lilies, the Common White, L. auratum, L. lancifolium rubrum, L. chalcedonicum, and L. tigrinum and its varieties, are neither expensive nor difficult to grow.

Of other herbaceous plants the following are the very best, and should give in ordinary seasons a succession of flowers extending over the greater part of the year. As florists' and half-hardy flowers and annuals will keep the summer garden gay, the selection contains a large proportion of spring and autumn flowering plants:—Christmas Roses (giant and common), Scilla sibirica, Anemone appenina, Anemone pulsatilla, Anemone nemorosa and its double rose-coloured variety, Anemone sylvestris, Hepaticas in variety, Anthericum Liliastrum, Aquilegia vulgaris in variety, Aquilegia chrysantha, Aquilegia cærulea, Aquilegia cærulea hybrida (Veitchii), Dog's-tooth Violets in variety, American Cowslips in variety, Polyanthus Narcissus in variety, Narcissus Trumpet, major and minor and Orange Phœnix, Paper-white Narcissus, Narcissus poeticus, Narcissus Jonquilla, Crown Imperials, Triteleia uniflora, Primroses (single and double) in variety, Primula cortusoides amœna in variety, Delphiniums in variety, Calandrina umbellata, Phlox verna, Phlox setacea in variety, Brodeia coccinea, Campanula Hendersonii, Campanulas in variety, Dielytra spectabilis, Spiræa japonica, Spiræa filipendula flora plena, Spiræa palmata, Lychnis Haageana, Lychnis chalcedonica flora plena, Œnotheras in variety, Omphalodes verna, Trollius europæus in variety, Ranunculus aconitifolius plenus, Potentillas in variety, Stobæa purpurea, Statice incana, Statice latifolia, Vinca major, Vinca minor, Anemone japonica hybrida, A. Honorine Jobert, and Senecio pulcher.

Nearly the whole of the above list of plants have been described in detail in the pages of GARDENING, so that only two require comment—namely, Spiræa japonica and Dielytra spectabilis. These being usually grown as greenhouse plants, have come to be regarded as tender, whereas the first is quite hardy, and the second nearly so. Spiræa japonica should be procured as strong clumps in the autumn, and planted where it is sheltered from the sun in the heat of the day in summer. It must never

be allowed to want water while it is growing, or it will suffer seriously. Out of doors the foliage is much darker in colour than when grown indoors. Dielytra spectabilis may be seen growing in two small front plots at Hadley, near Barnet, facing east, and exposed to the full sweep of the north-east wind, the ground falling rapidly to the eastward. The position is as high as Hampstead and Highgate; the soil, a rich loam resting on gravel. Last May both clumps were in flower, and one was between four and five feet across, so that there can be no question of its hardiness in dry, well-drained soils, in positions where it escapes damp frosts. In a bed by itself on a sunny lawn its beauty would be seen to advantage. The clumps above-mentioned spread their drooping leaves and flowers equally on every side, which they could not do if crowded by other plants.

Planting.—Herbaceous plants should be planted in September, but many of them can be more readily procured in spring. They do not in that case flower well the first year. The ground should be a rich, deep, well-drained loam, and should be well dug two spits deep, and liberally manured with old, well-rotted manure. This should be well mixed with the soil. Planted in such a soil, nearly all the plants above-named will require no further attention for several years, with the exception of such bulbs as Tulips, which require lifting and drying. When the clumps show signs of deteriorating they should be lifted and divided, and fresh soil and manure added; but the soil should never be dug all over, as that is only destroying the roots of the plants; neither should leaves of trees which fall on the beds be swept up: they are the natural food of plants, and will soon disappear. With a well-planted herbaceous garden the services of the jobbing gardener may be dispensed with, except to cut the grass, roll the walks, nail up climbers, and remove weeds. A mulch of well-rotted dung should be laid amongst the roots of the plants in winter, and pricked in with a fork before the plants start growing in the spring, and the result of this simple culture will be a far more enjoyable and ever-varying garden than any bedding plants can possibly produce. J. D.

RENOVATING BEDS OF LILY OF THE VALLEY AND FORMING NEW ONES.

THE Lily of the Valley is a flower which everyone admires, but which few grow as it deserves to be grown. The plants are often allowed to get overrun with weeds, and consequently flower very sparingly. They should be kept quite free from weeds, and the soil between the roots should be frequently stirred, especially after heavy rains. Great attention is required after the flowering period, as it is then they begin to root and prepare for the next flowering season. They ought never to be allowed to get too dry, from the time they have done flowering until August, and should receive a watering of liquid cow manure once a week. The roots should be taken up and replanted at least every four years. In doing this, as well as forming new beds, the ground must be deeply trenched and thoroughly cleaned. In whatever shape or form the beds are the roots should be planted in drills about 3 in. to 4 in. apart each way, but so that the crowns stand above ground. Then just cover the crowns with old, well-decomposed leaf mould. Planting may be done from the end of October till the end of March. Although the Lily of the Valley delights in a shady situation, it will grow quite as well in sunny places, but the blooms will not last quite so long. The bare places under trees, shrubs, &c., might soon be improved by planting Lily of the Valley, which, with its delicate and fragrant flowers and lovely green foliage, will soon repay the little trouble bestowed upon it. T. J. D.

The Irish Heath (Menziesia polifolia var).—The flowers of the white varieties of this native plant may be classed amongst the most lovely of all delicate blossoms, and when seen upon the plants, or when cut for use as domestic or personal ornaments, they are able to compete successfully with even the most select of tropical flowers. During the past few years, blooms of the white varieties have been welcomed by Covent Garden florists, who make excellent use of them in the arrangement of bouquets; but it is as seen on the dark-leaved little bushes themselves that the spires of snowy bells are most attractive, and a rood or so of these plants 18 in. or 2 ft. apart would be a very serviceable addition to any garden where cut flowers of a choice character are desired, or a few plants might be used as a fringe to beds of Rhododendrons and other American plants. Although a peat soil is eminently suitable for these Heaths, nevertheless it is by no means an absolute necessity, as a good fibrous loam meets the requirements nearly as well, and, like most other plants, they evince a preference for pure fresh air. The type (No. 1 in the annexed illustration, the upper figure to the left), as found so abundantly in some parts of the west of Ireland, bears bells of a ruby-purple colour; (No. 2) M. polifolia var. alba, has snowy-white bells; then of this there is a large and more inflated form (No. 3) known as alba major or globosa, and the variety (No. 4) named M. polifolia bicolor is perhaps the most singular of all in its changing variations, which range from pure white to deep purple, through all the intermediate tints of blush-white and pink, while some of the bells are distinctly striped with purple on a white or blush-coloured ground. All these variations may occasionally be found on the same flower-spike, as is shown in the engraving in the upper right-hand figure. —F. W. B.

Varieties of Irish Heath (Menziesia polifolia.)

RIDGING UP SOIL IN WINTER.

I AGREE with all that Mr. Cornhill has said (p. 486) respecting the ridging of ground in winter. Our soil here is of a stiff, retentive nature in winter, but bakes and burns in summer; and if it be stiff and lumpy in the spring, or run into a state akin to the consistency of clay with excessive moisture, it becomes almost impossible to crop it fitly or to reduce it to a pulverised condition. Ridging will do good if it be done whilst the soil is fairly dry in the autumn; but if the operation be left until it has become saturated with wet, then it will turn up in huge lumps, and in lumps it will remain unless severe frosts pulverise it. I would often like to have my uncropped ground neatly dug or forked over in the autumn, or during open weather in winter, but if I did have it so worked and a week or two of rainy weather succeeded, it would then look very much as if it had been rolled, and would run together in such a way as to make moving it in the spring heart-breaking labour. Where it cannot be ridged and it is intended to dress it with stable manure in the spring, it is far the wisest plan, even at the risk of being thought untidy, to leave it untouched, weeds and all, for the winter, and let the worms do the work of aërating, which they will perform much more effectually than human labour can. When it is intended to grow Potatoes—our staple crop here—with patent manures, I like to turn up the soil in ridges 2½ ft. to 3 ft. in width, and to allow it to remain rough and unkempt for the winter; then in the spring, when the soil has become fairly dry, have the furrows forked over, draw shallow drills with a hoe, plant the tubers, dress with the manure, and fork down the pulverised soil from the sides of the ridges to cover the seed. The remainder of the ridge can then be forked down at leisure either before or after the Potato plants appear. Planting of all kinds of hardy flowers, such as Primroses, Polyanthuses, Pansies, &c., that should be done in the autumn, and in some cases must be, let the result be what it may, is, nevertheless, best done in the spring, as the rains of winter cause the particles of the soil to run tightly together, the roots are fixed as in a vice, and in the heat of summer the soil is baked so hard, that it is almost impossible to get it clean and usable. It is an undoubted axiom that the wetter the soil in winter the more will it bake in the summer; whilst a dry soil in winter, if it be of average depth, will be the coolest in summer. The more the soil is pulverised, the more the surface is disturbed and made fine, the more retentive is it ot moisture; and, except when the winter has been severe and the frost has thoroughly entered the soil, the highest condition of pulverisation is found when the worms have had undisturbed action, and the ground has lain untouched till March, or until dry weather prevails. Recent winters have rendered the ground more difficult to work in the spring than was formerly the case. Then several weeks of severe frost did a large amount of good; now, mild winters and heavy rainfalls

keep the weeds growing, render the ground close and heavy, and leave slugs, snails, and other pests in undisputed sway. I heartily recommend all who have stiff clayey soils to cultivate to use some discretion about moving them in the autumn or winter, lest the labour they bestow on them may do more harm than good.

A.

POLYANTHUSES AND AURICULAS.

ALTHOUGH the bedding-out system, as it is termed, has many crimes against hardy plants to answer for, I do not think the default in the cultivation of choice Polyanthuses and Auriculas can be laid at its door. It is notorious that these once-favoured florists' flowers never were grown by gardeners, or those of the horticultural fraternity, who have been at any time bitten with the "bedding-out" mania. With the exception of the few trade growers, at all times but a few, who have from time to time cultivated them, almost all other growers have been amateurs—that is, persons who found in some other profession or trade than horticulture a livelihood, and grew these particular plants as a hobby, or as a healthy and interesting means of recreation. The real hardy plants that have suffered from the practice of "bedding-out" have been all those fine border plants that will grow almost anywhere outdoors under ordinary cultivation. As a result, thousands of gardeners have grown up who had no more knowledge of the great mass of hardy plants than the plants had of them. Choice or florists' kinds of the Polyanthus and Auricula could never have been brought into that category; they are not border plants, and could not be grown as such. Just as the monks of the Middle Ages, in their secluded monasteries, kept alive in an ignorant and careless world a taste and love for intellectual knowledge and culture, so also did the few descendants of the old florists during the interregnum, through which I happily believe we have passed, keep alive the interest in Polyanthuses and Auriculas, and now we find that limited interest is fast increasing, so that there is hope in a few years these ancient florists' flowers will be more widely grown than ever. Why there should have been a decline in their cultivation as exhibition plants it is no more possible to explain than is the almost entire collapse of Tulips, Ranunculus, Anemones, and many other equally good things which, a few years ago, were extensively used as show plants.

It is, perhaps, but natural that new generations should have other tastes, but if it is possible to lead some of the younger lovers of flowers back into the ways of their forefathers, and to develope a fondness for some of the old loves, really good service to hard plants will be done. I am pleased to find a firm like that of the Messrs. Clibran can offer plants of many of the fine old kinds, although I fear that the sorts offered so low as 9d. each would have little affinity to the fine old kinds that, because of their rarity, are necessarily so dear. I have before me now a trade list which shows even such inferior kinds as Black Prince and Napoleon are quoted at 1s. 6d. each, whilst Cheshire Favourite is 2s. 6d., Exile and Formosa 3s. 6d., and Lancer and George IV. 7s. 6d. each. It may be taken for granted that these are the lowest prices at which they can be offered, and yet it is found almost impossible to get good strong plants sufficiently fast to supply requirements. A Lancashire trade grower of good reputation wrote the other day that he could not issue a list this year, as many of his kinds had largely suffered. It is such ailments and difficulties in culture and increasing a stock of these choice things which keeps them so dear. It may be assumed that the trade growers would be only too pleased to sell them cheaper if they could. A seedling new kind would, perhaps, take ten years to make a few dozens of plants, even if all possible mishaps were avoided. Old kinds increase much less rapidly than this, and some it is difficult to keep alive at all. These remarks apply almost with equal force to Alpine Auriculas, but good kinds of these may be had at about 20s. per dozen if not too choice, but of course new kinds are more costly. No doubt those who may be induced to embark in the cultivation of these choice flowers (and may they be many) will soon learn to realise the high value of their plant pets.

A. D.

ANSWERS TO QUERIES.

3869.—**Raising Seeds.**—Keep the seeds in a dry place till March, then sow in 6-in. pots in light sandy soil—say two-thirds peat or leaf-mould and one-third loam, with plenty of sand to keep it open. Press the soil in tolerably firm. If the seeds are soaked in lukewarm water for twenty-four hours before sowing they will germinate quicker and better. Do not cover them too deep, and place a square of glass over the top of each pot. They will grow in the greenhouse without bottom-heat, although doubtful seeds do better with it. Keep them just moist only till they grow.—E. H.

3880.—**Culture of Lilium Giganteum and L. Washingtonianum.**—In the case of L. giganteum some little patience on the part of the grower is necessary, for this Lily requires four, and sometimes five, seasons' growth before it comes into a flowering state. The proper time for shifting it is just as the foliage dies off, and a nice fine, mellow compound of fibrous loam should be employed, adding to it some leaf-mould and a little well-rotted manure, for this is about the only species that is really benefited by the addition of manure to the soil. It is, indeed, a greedy feeder, and should have free supplies of liquid manure when in full growth. During the winter keep the soil moist, and keep the bulb in a cold frame or greenhouse, or even outhouse will do, for it is hardy enough; but when in a box is better for some protection. It also enjoys the shelter of a glass roof during the spring months, but if this accommodation cannot be afforded it may be placed in a sheltered situation in the open air, where it may remain until the blooms are showing, when the protection of a glass roof will again be desirable. After flowering, the old bulb dies away, but young offshoots are generally formed, which may be taken off, and will flower in their turn at their appointed time. With respect to open-air culture, there is no great difficulty, as, even when the situation is cold, the safety of the bulb may be ensured by a coat of ashes or cocoa fibre. The best place for this Lily is amongst Rhododendrons, or shrubs of early growth, where a certain amount of shelter is afforded not only in the winter but also in the spring, when the young, tender foliage appears above ground; and the best soil is that which contains a considerable amount of organic matter and a fair proportion of sand. Thus a compound of sandy peat loam and leaf-mould in equal proportions will suit it well. One reason why many fail with this Lily is that the foliage gets injured by our late spring frosts, and when this is the case the bulb does not much increase in bulk that summer. Snails are also extremely partial to the succulent foliage of this plant, and it is oftentimes a matter of considerable difficulty to protect it from their ravages. A good coating of soot around the bulb will keep them from passing over the soil on to the plants, and when they make a bridge of other plants to cross on to it, the leaves may be finely sprinkled with soot. Generally speaking these pests appear most in spring, and if watched for at night for a time they may be killed off before the summer arrives. For the treatment of Washingtonianum we refer you to p. 493, answer 3755.—G. C. B.

3884.—**Draining a Garden.**—First dig a hole or two in the garden, say 3 ft. deep, leaving them open, and see how high the water rises. If it attains the height of the pond, digging a blind well will be of no use, and it will be better to rest content with the 22 in. in depth that will utilise the pond as an outfall. Advantage should be taken of every opportunity of raising the surface that occurs in after years.—E. H.

3922 and 3931.—**Garden Walks.**—"S." and "Venetian Red" would, I think, find concrete answer their purpose. Burnt clay, slag, or sandstone, finely broken, or gravel will answer; the materials should be from the size of eggs to peas; a little of the dust will not spoil it, however. Six parts of either of the above to one of fresh Portland cement. The materials must be thoroughly mixed, then just enough water added to wet the whole, and again well mixed. It should be laid evenly from 4 in. to 6 in. thick, and well rammed or beaten with the back of a spade to consolidate it. It must be mixed fresh, about, say, a cubic yard at a time; a little of the finest materials can be put on afterwards; this will fill up all holes, and give a nice finish. If well done this will look much like Portland stone, and last a lifetime. The ground should be prepared, of course, and all necessary drains and gullies first laid. The work must not be done in frosty weather, and should not be walked upon until quite hard.—H. W. M. X.

3923.—**Improving a Lawn.**—The method is very simple, but mainly depends on the cause of the failure of the turf. During winter keep it well rolled, and in the spring dress it with a good coating of wood ashes if procurable. Before the application of the above, sprinkle a quantity of grass seed, say, one bushel of renovating grass mixture, to be obtained of any good seedsmen, such as Sutton, Carter, Barr and Sugden, Hooper, &c., and add to this half a pound of Trifolium and White Dutch Clover. Where the mistake is generally made, is that people lay down a turf and think that is all that is required, and that it will take care of itself, whereas if there is a periodical sowing of seeds once in every three years, perhaps, and an application of manure from time to time, this will improve even the worst lawns, provided the ground is not soured by want of proper drainage.—GRAMEN.

3925.—**Salt as a Fertilizer.**—If the soil be dry naturally, salt may be applied more thickly than if the soil be cold and adhesive. In the former case 6 cwt. per acre may be given, and in the latter case 4 cwt. is, perhaps, enough. This would give, in the first case, about 1 lb. per rod; but in such a small way, perhaps, rather more may be applied with safety. We prefer to sow salt broadcast over the soil on a dry day as early in the winter as possible, and thus let it get thoroughly incorporated with the soil before planting time comes. Soot and lime may be applied in the spring to Potatoes with freedom, about 5 cwt. of soot to the acre being regarded as a liberal dressing, but if applied to a growing crop a second dressing may be given after there has been heavy rains. Whilst special Potato manures or guano are best applied in the furrows when the tubers are planted, it seems most advisable to have such dressings as salt, lime, and soot mixed equally with all parts of the soil.—A. D.

3927.—**Pruning Gloire de Dijon Rose on South Wall.**—This operation may be performed towards the middle of March if the weather is mild and likely to keep so; if severe, it will be wise to defer the pruning until the end of that month, as all Teas and Noisettes require later pruning than the hybrid perpetuals. The wood damaged by frost, misplaced and unripe shoots, and, in fact, all wood causing a crowded appearance should be cut away, and that remaining laid in regularly for blooming. The shoots may be shortened slightly, and it will be desirable to well mulch the roots with manure, as trees planted against walls require extra attention in this way, as the roots have only one side to extend and get support. Carefully preserve all new wood from the base, as climbing Roses are not unfrequently very "leggy," and then look unsightly. If properly supported new wood will appear from year to year to take the place of that worn out, misplaced, or damaged.—WILLIAM WALTERS, *Burton-on-Trent.*

3932.—**Gas Lime in a Garden.**—Your informant was quite right as to the greater efficiency of gas lime in the extermination of slugs, &c. A little discrimination is all that is required. If the ground is to lay fallow, a larger quantity may be used than if it is going to be cropped soon after the application. There could not be a better season than the present time of the year, for the gas lime could be spread over such land as is to be prepared for the forthcoming season's crops with less fear of any harm accruing to the future produce. Some people mix it up with their manure-heap, and so apply it altogether.—CALX.

—— Gas lime is a somewhat dangerous dressing to apply in gardens if in a crude or raw state fresh from the gasworks. The safest method of applying it is to mix with a barrowfull just double the quantity of soil from an old turf heap or rubbish midden. This should be turned about twice in the course of a month, and then the gas and ammonia being largely

absorbed in the soil, the danger to vegetation is lessened. At the same time it should be not less deadly to ground vermin. Where seeds are soon to be sown it should be used sparingly, and the safest plan is to give the seed bed a dressing of fresh but slacked lime when the seeds are sown, and another dressing at night when the seeds are coming up.—A. D.

3935.—**Planting Flowers.**—Bulbs of all kinds may be planted now; so may all kinds of Pansies and Violets. Daisies, Wallflowers, Primroses, Polyanthus, Sweet Williams, Forget-me-Nots, and other autumn-sown annuals may be planted any time from this to March when the weather is open and the soil works well. Then, in March, buy a small collection of hardy annuals, such as Candytufts, Escholtsias, Clarkias, Godetias, &c. Procure also seeds of Stocks, Asters, Zinneas, and Phlox Drummondii. Sow these latter in pots in a frame where there is as little heat as possible. Transplant the Stocks, Asters, and Phloxes early in May. The Zinnias are not quite so hardy, and may remain a little longer. Roses are desirable if the soil and climate are suitable. The former may be improved; but the latter, if laden with smoke, will be a bar to their full enjoyment. Carnations and Pinks may be planted in February; so also may hardy herbaceous or other plants—Delphiniums, Phloxes, Pyrethrums. Remember the old adage, "If you want a thing done well, do it yourself." Flowers require loving care.—E. H.

3936.—**Fragrant Roses.**—It is somewhat a difficult matter to say which are the twelve hybrid perpetuals most highly scented. At this season of the year, when we have not our friends to appeal to, it must be, to a certain extent, a matter of memory. I, however, give the following as possessing this, to my mind, a most essential point in deciding the qualities of a good Rose—viz: Monsieur E. T. Teas, Le Havre, Charles Lefebvre, Beauty of Waltham, Madame Charles Crapelet, Senateur Vaisse, Jean Liaband, La France, Alfred Colomb, Louis Van Houtte, La Rosina, Baron de Bonstellen, Duc de Wellington, Sir Garnet Wolseley, Exposition de Brie, Marie Baumann, Madame Fillion, Bessie Johnson, Madame Lacharme, Abel Grand.—WILLIAM WALTERS, *Burton-on-Trent*.

3937.—**Secateurs.**—These are among the most useful instruments ever introduced. My gardener has had a pair for the last three years, and with them he has manipulated some hundreds of trees each season. All the care required is that they should not be strained by being tried on too large branches, in which case the spring is apt to be strained. Secateurs cut ever so much cleaner than a knife, and do not require a hundredth part of the sharpening that the old-fashioned method of knife-pruning entailed. For the higher branches of standard trees there is a larger and more powerful kind of pruning shears, technically termed "Averruncators." These, however, are more expensive, but none the less lasting.—FORFEX.

3939.—**Wireworms in Pots.**—Too much care cannot be exercised in a proper supervision of potting sorts before consigning them to the pots. Prevention is better than cure at all times, as any future remedies may, or may not, prove detrimental to the plants. By this I mean the infusion of lime in water, and other remedies mentioned in most horticultural works. To remedy the evil afterwards, however, the best way would be to turn out the plants and pick out the miscreants, replacing the mould by some that has been carefully prepared.—VERMIS.

3178.—**Cloches.**—In answer to "Y. S.," I have read that the Cloches are made by Messrs. Breffit and Co., 83, Upper Thames-street, E.C., at the price he wants—viz., 10d. to 1s. each.—K. M.

3923.—**Improving a Lawn.**—Have all the weeds and Daisies removed from the lawn in March, then top-dress with a rich, light soil half an inch thick. Apply to a good seed-house, such as Carter's or Sutton's, state the size of lawn and nature of soil, and position. On receipt of order, a renovating mixture will be sent, arranged in suitable quantities of Grasses and Clovers, which, if sown thickly, will make a good lawn for croquet in the summer.—E. H.

3925.—**Salt as a Fertiliser.**—Thirty pounds of salt per rod may be safely applied to porous land. It is difficult to say how much salt should be mixed with a bag of soot for Potatoes, as soot is a less dangerous matter than salt, but in no case should the salt exceed the quantity per rod named above; the soot, of course, may be almost any reasonable quantity, from a bushel to a sack per rod. The salt should not be sown in the drills with potatoes; it should either be spread on the land and forked in, or else be sprinkled between the rows after the potatoes are up and hoed.—E. H.

3924.—**Butterfly Tulip.**—They are closely related to the Frittilaria, and the same treatment given to them will suit the Calochortes. At least, I have found them do best planted in light rich soil, of a rather sandy nature, and not disturbed too often. Plant in autumn, or as soon as received, covering the bulbs about 3 inches deep.—E. H.

3926.—**Orange Trees.**—Seedling Orange trees, unless grafted with fertile wood from another Orange tree, are a very long time in producing flowers. Better have the young tree grafted by some gardener, who could place the tree in a close frame or house until the union was perfect. Orange trees are not difficult to cultivate. They require clean, well-drained pots, and rich open loamy soil. Plenty of water during the summer, with less during the winter. They may with advantage be placed out of doors in the summer months. A greenhouse temperature suits them well. I am assuming that they are grown for merely ornamental purposes.—E H.

3928.—**Keeping Chrysanthemum Blooms.**—Chrysanthemum blooms will keep a long time in a dark cellar. I don't know that there is any secret in it. Of course the leaves die. I have kept them best with the stems inserted in damp sand. The blooms must be arranged thinly; if they touch each other they will be liable to damp. They must be cut before they begin to fade, but I may say I have never had occasion to keep them so long as three months.—E. H.

3929.—**Raspberries Blighted.**—How long have the Raspberries occupied the present site? In similar circumstances I should transplant to new soil. If that could not be done then dress heavily with lime and soot mixed together, and fork it lightly in. When used fresh both these substances are famous insecticides, and they sweeten and scour the soil.—E. H.

3930.—**Chrysanthemums for Pots.**—Large flowering Chrysanthemums, Prince of Wales, Mrs. Dixon, Mrs. G. Rundle, La Nymphe, Hero of Stoke Newington, Mrs. G. Glenny, Prince Alfred, Queen of England, Golden Empress of India, Mrs. Heales, John Salter, Princess of Wales, Venus, White Beverley, and Elaine. Pompones, Fanny, Celo Nulli, Helena, Salamon, Dick Turpin, Rosinante, Bijou d'Horticulture, James Forsyth, Automus, St. Michael, Mr. Astie, White Cedo Nulli.—E. H.

3931.—**Garden Walks.**—There is no cement of bright hue available for path-making. Would not a good sprinkling of powdered brick over the asphalte, when the path was formed, answer the purpose? If of too pronounced a colour, it might be strewed with ground sandstone. I think with the materials on hand a very good and pleasant-looking walk may be formed.—E. H.

3932.—**Gas-lime in the Garden.**—In reply to "Lumbricus," I have used gas-lime. I found no benefit in it, but, on the contrary, it caused sad havoc to Gooseberry trees, Raspberry canes, &c. Neither did it destroy the slugs, &c. Nothing would induce me to again try the experiment.—SUFFERER.

—— Gas-lime should not be applied to land cropped with vegetables, nor yet land just previous to sowing seeds, but it may be applied to vacant land now, and dug in at the rate of about one bushel per square rod, mixing it well with the soil.—E. H.

3933.—**Unfruitful Pear Trees.**—Does the Pear tree stand in a low unfavourable situation? If it does not I cannot understand why the flowers do not set, or at least some of them. Perhaps the soil is very light. How old are the trees? It is not easy to assign a cause for unfruitfulness without more information.—E. H.

3934.—**Plants for Clayey Bank.**—Plant creepers—such as Clematis, Periwinkles, some of the choicer Ivies. A few of the hardy climbing Roses would look well. Cotoneasters planted on or near the top would hang over and look well. A Pampas grass and a hardy Fern or two, such as Osmunda regalis and Lastrea felix—mas cristata would be at home, peeping up from amid the creepers. The Osmunda might be planted near the base of the bank, as it likes moisture.—E. H.

3938.—**Insects in Acacia Tree.**—Dress the parts affected with Stockholm tar (not gas tar). The former is a vegetable product, and will do no harm; not so the latter. Gishurst compound, softened down with warm water to a thick paste and rubbed over the parts, will probably kill the grubs or weevils.—E. H.

3939.—**Wireworms in Pots.**—Trap the wireworms with bits of carrot or potato inserted beneath the soil in the pots. Examine the traps daily and destroy the insects.—E. H.

—— In answer to a correspondent asking for the best means of destroying wireworms attacking plants in pots, I should suggest, if it were possible, without injuring the plants, that a careful search should be made at the roots for the worms, and that when re-potted one or two slices of potato, carrot, turnip, or beetroot should be buried about an inch below the surface. Each slice should have a wooden skewer stuck into it, by which it can be removed every morning for examination. If there are any wireworms present they will be sure to go to these baits. If the plants cannot be unpotted the insertion of these baits in the earth will be found very effectual.—G. S. S.

3984.—**Dandelions on Grass Plot.**—*W. S.*—Dig them up with a knife or spud whilst the ground is wet. In summer you can get rid of them by putting a good pinch of salt in the heart of each plant.

3985.—**Manuring Garden.**—My garden is an old one, of light, sandy soil, dark in colour. It has been heavily manured each year with cow manure. Would it be of benefit to change the order for one season and apply some kind of phosphate? If so, what kind and quantity?—B. G. [Apply a good dressing of lime now and a dressing of soot in spring, giving no manure this year.]

3986.—**Protecting Pansies and Iris.**—*Thos. Rogers.*—A thin coat of coal ashes on the surface of the soil is all the protection you need give them. Even this is not necessary in well-drained, warm soils.

3987.—**Plants for Conservatory.**—*S. S.*—As you do not state whether your conservatory is a small or large one, we are at a loss to advise you. Creepers suitable for a large house would be of no use for a very small one, and *vice versâ*. In a large house you could have tall Ferns, Palms, Camellias, &c., but these would not do for a house a few feet square.

3988.—**Winter-flowering Climbers.**—Will you give me the names of two or three winter-flowering Climbers best suited for planting out in a town garden?—J. G. [We presume you mean for out-door planting. There are but very few hardy winter-flowering climbers, but the following will probably answer your purpose: Chimonanthus fragrans, Jasminum nudiflorum, Forsythia viridissima, and Cydonia japonica.]

3989.—**Broad-leaved Myrtle.**—*Myrtle.*—Thin out the shoots a little, leaving those that are firm and well ripened, as it is these that produce blossom. If the plant is too high cut it back to the height you want it. This may cause it to bloom better in future.

3990.—**Marechal Niel Rose.**—*Myrtle.*—If you have a good border outside plant in it. You will have less trouble with it than with an inside border, and the Rose will probably do better.

3991.—**Soil for Bulbs.**—Will not decayed turf from a rather loamy pasture land, and well-rotted manure, with the addition of a little river sand, answer every purpose as a compost for bulb-growing in pots, as I have a difficulty in getting peat?—EARNUM B. [Yes.]

3992.—**Soil for Camellias.**—*F. W.*—Good turfy loam and sand, with a little well-decomposed leaf-mould, will do well for young Camellias. Peat will also do, but loam and peat in equal parts would be the best. Pot tolerably firm. Keep in an airy and light situation. Read articles recently given in GARDENING on the subject.

3993.—**Sandringham Celery.**—*Orange.*—From any good seedsman. You will find plenty of them in our advertisement columns.

3994.—**Pruning Medlar Trees.**—*R. H.*—They require no pruning.

3995.—**Horticultural Dictionary.**—*Seeley.*—Vol. I. of GARDENING and our query columns form the best horticultural dictionary we know of for amateurs.

3996.—**Herbaceous Plants.**—*One Willing to Learn.*—The twelve kinds you name are good ones, but they will not all flower at the same time.

3997.—**Melons for the Middle of June.**—We would sow a few seeds in the middle of January, and a few more a fortnight later. Conqueror of Europe is a handsome fruit when well grown, but is not considered so well flavoured as some of the newer kinds.

3998.—**Hydrangea not Blooming.**—I have a large Hydrangea in my greenhouse which bloomed well last year; this year it has made good growth, but has not bloomed. Ought I to cut it down—and if so, when?—E. I. W. [Let it remain as it is. It will probably flower well next year. If you cut it down you will cut off all your bloom buds.]

3999.—**Geraniums Losing their Leaves.**—*Charles H.*—Zonal Geraniums nearly always lose a quantity of leaves during winter. Water them only when dry, and never wet the foliage. Give plenty of air and keep frost at a distance.

4000.—**Treatment of Young Vines.**—*E. J. W.*—Much information on this subject has lately appeared in GARDENING.

4001. **Watering Ferns.**—Are there any Ferns, the fronds of which should not be watered? If so, what kinds? Also, is it better, generally speaking, to water the fronds as well as the roots of all Ferns that are either in pots under glass, or planted in a Fernery?—H. B. [The gold and silver Ferns (Gymnogrammas) should never be watered overhead, neither should Adiantum farleyense, or A. macrophyllum. Many Ferns with fine pinnæ are best not watered overhead. As a general rule ferns may in summer be dewed over with a fine syringe; and some of the kinds with thick leathery leaves may be syringed with some force to keep them clear of dust and insects. A moist atmosphere is necessary for Ferns, but at this season care must be exercised.]

4002.—**Cuttings Laurels.**—What month in the year ought Laurels not to be cut?—A. R. M. [They may be cut in any month with comparative safety. The best month is February.]

4003. **Achillea rupestus.**—*Sandgate.*—This is a hardy herbaceous perennial.

Names of Plants.—*W. Melron.*—1, Sedum of some kind; 2, Browallia elata; 4, Saxifraga sarmentosa.——*R. W. B.*—Acer cissifolia.——*An Old Subscriber.*—1, Echeveria secunda glauca; 2, Sempervivum tectorum; 3, Variegated Sedum; 4, Sedum carneum variegatum; 5, S. glaucum; 6, Saxifraga pentadactylis.——*E. B. H., Norfolk.*—Osmunda cinnamomea.—— *Gam.*—Stanhopea oculata.

QUERIES.

4004.—**Material for Garden Paths.**—Can any reader give any information about a material called porphyritic? It is a kind of gravel used for garden paths, and I am informed it answers very well. I want to know where it is to be obtained, and about the cost per yard, and perhaps some one could say where it might be seen laid down.—J. COCKBURN.

4005.—**Gentiana acaulis.**—Will any reader tell me how to raise this plant from seed?—H. B. T.

4006.—**Lilies in Towns.**—What kind of Liliums will do out of doors near a town? Soil, sandy and rich.—LEWISHAM.

4007.—**Pond leaking.**—Can anyone advise me as to the best method of preventing leakage from a small pond I have lately made? It is supplied by a stream which sometimes fails in summer, and the water soaks away rapidly. As I wish to grow water plants I do not like to line it with cement. Would "puddling" answer; and, if so, how, and with what should it be done? The soil is an ordinary loam, not gravel.—E. DE B. M.

POULTRY.

Brahma Fowls.—In regard to "T. F.'s" remarks in GARDENING, October 30, I beg to say I did not recommend Brahmas as fowls for small places; my remarks were confined to poultry as a profitable investment. "T. F." has made a mistake in recommending the Hamburgh family, as they are notoriously the very worst bearers of confinement as far as cleanliness goes. I can inform "T. F." I have kept two Brahma cockerels in a house 3 ft. square without run for two or three months, and they are perfectly clean and in excellent plumage. In regard to poultry as an investment, I think a farm of thirty acres as follows would, in the present state of agricultural pursuits, become a profitable undertaking: 15 acres of Grass, 7½ acres of corn, part seeded, 7½ acres of green crops, as Turnips and Potatoes, &c.; keep four milch cows, a strong pony, 1500 laying hens, three breeding geese, one gander; and during the summer months, if it was found that the land would keep more, young geese might be brought on, as many small farmers and cottagers in this locality sell them when beginning to feather at 2s. 6d. each. The land must be like this, cheap and contiguous to several good markets.—NORTH YORKSHIRE.

Fowls Cured by Paraffin.—One of my pullets a few days ago became very oppressed in its breathing. It was obliged to keep its mouth open, and was continually choking. I determined to use paraffin oil. I first inserted a dry feather in the wind-pipe, twisting it gently round to discover any trace of worms, which I could not. I then twice repeated this operation with an oiled feather with this result, that in two days the pullet was quite recovered. As I could not see any worms on the feather, I cannot say the disease was the gapes. Whatever the cause, the fowl was evidently in a bad way. I must add great care is evidently necessary in using the feather not to choke the fowl.—N.

Lameness in Fowls.—Kill your fowl at once; it is suffering from liver complaint, and will infect the others. When the liver is examined it will be found covered with small ulcers; there is no cure.—AN OLD HAND.

Fowls with Colds.—"Crooked Spire's" fowls have got the roup; he will soon cure them by using the following: One teaspoonful of strong alum water and a little cayenne pepper once a day, followed in twelve hours by a teaspoonful of castor oil. If the nostrils or eyes are affected, bathe and clean with same solution of alum water. I should also advise "Learner" to try the remedy, for it is a sure cure if taken in time.—GEORGE LITTLE.

—— In reply to "Crooked Spire," I should advise what I have just successfully tried, and have never found fail. My fowls had cold and coughs. I mixed in their hot, soft food every day for a week one teaspoonful of powdered ginger, one teaspoonful of hot curry powder, and two teaspoonfuls of camphorated chalk. Mix these well in before adding the hot water. In a week all were well but one chicken, it looked roupy about the eyes and got thin, so I killed it. As I have long found camphor a useful remedy for colds in human beings, I thought it must be equally good for fowls. I have never found this mixture fail, and camphorated chalk, as prepared for tooth powder, is the easiest and cheapest way of using camphor for fowls. I daresay black pepper would do instead of curry powder; the fowls always eat this mixture most greedily.—P.

Black Hamburgh Fowls.—In reply to enquiries about Black Hamburgh fowls, my experience is they are most profitable. I believe the great secret is to hatch early, and dispose of nearly all last year's birds before they begin to moult. We had a constant supply of eggs all through the severe weather of 1879-80. In 1879 I realised £13 9s. 8d. by keeping about thirty hens; expenses, including purchase of hens for sitting, wire netting, &c., £8 1s. 9d. A narrow wire netting with cut edge on the top of fencing keeps them in. I have two good cockerels hatched in April I would dispose of, with a few hens in good plumage, to start a beginner.—SHERWOOD FOREST.

Ascel Fowls.—Is this a new variety? I have never heard of the name before, except in the Crystal Palace catalogue. Would any reader give a description of this variety? A few birds of this kind were exhibited at the last show held at the Crystal Palace.—PETWORTH.

Purifying Feathers.—Would any reader tell me the best way of purifying poultry feathers for use?—T. S.

Turkeys with Swelled Heads.—I have some young turkeys put up to fatten, two of which have got large swellings on their heads. They have been carefully washed with warm water, but with no good effect. They are not "crammed," but eat as much as they like. They have been quite healthy up to now. Will any one tell me how to treat them?—M. E. G.

Books.—"Poultry for Prizes and Profit," by James Long. "Rabbits for Prizes and Profit," by Charles Rayson. Published 170, Strand, London.

Spanish Fowls.—I have a black Spanish cock, and during the last few months the white on its face has grown so much over its eyes as to nearly blind it. Can any reader give me any information how to stop the growth?—A CONSTANT READER.

Heat for Hatching Eggs.—Respecting "J. L.'s" inquiry regarding heat, in artificial incubation. As the result of months of accurate trial, I find that a heat of 90 deg. to 100 deg. is the most successful in every way, with plenty of fresh air and ventilation. I have hatched nearly every egg in a batch where temperature has been on an average 96 deg. to 98 deg., but have lost many batches by heat getting over 100 deg. to 105 deg., whereas, on the other hand, as low as 84 deg. on one occasion did not appear to affect the issue. With a heat of 100 deg. average the eggs will be truer to time, but birds weakly, some unable to hatch. By 5 deg. less, time will probably be a day or two longer, but better as regards results.—G. S.

—— I find that the proper temperature for hatching eggs is 102° to 104°; but 108° will spoil a few if it remains so for some hours. On the other hand, 98° will not spoil any if only let stop for a little time. Let 103° be the standard for the eggs. The common fowl takes 21 days; ducks, 28 to 30 days; geese, 28 to 30 days; turkeys, 30 days.—E. G. M.

Brahma Fowls.—I have a young Brahma cock, six months old. Will this fowl be old enough for breeding purposes by next month?—CONSTANT READER.

Fowls Diseased.—*G. W. R.*—Your fowls have probably got the roup. Read article in GARDENING, Dec. 18th.

Columbian Fowls.—Can any reader inform me where I can get the Columbian fowl, or how it can be produced, and what are its merits?—COLUMBIAN.

Fowls with Swollen Eyes.—Can any reader inform me how to cure a Spanish Pullet which I have? The flesh under the eyelids is all swollen up over its eye, about the size of a marble. It is not a bladder which Spanish fowls sometimes have. It stands moping about the yard with its head on its shoulder, and its comb is of an ashy-white colour. It appears to suffer from the cold and wet weather.—COLUMBIAN.

HOME PETS.

Curing Rabbit Skins.—I cure these as follows: Put the skins on a clean board, fleshy side up, and point 9 or 10 nails into the outer edge of the skin to stretch it. Put a tablespoonful of saltpetre and a pinch of alum into a saucer, pour half a gill of warm water into the saucer, and when the saltpetre and alum is dissolved, take a clean rag and rub the fleshy side of the skin with the liquid; rub it twice afterwards at intervals of two days; at the end of the week the skin will be cured and the fur unharmed, nor will there be the least smell from it. I have cured rabbit, hare, and sheep skins with such treatment, and the sheepskins have been washed and possed in the poss-tub to clean the wool, and the skin was none the worse for the possing.—R. B.

Canaries with Long Nails.—The long nails should be cut back about one half. Procure a very sharp pair of scissors, or, better still, a very sharp watchmaker's cutting plyers. Take out the bird, holding him on his back gently. Then draw out the claw, and, holding it at the joint of the nail, nip it, the nail, half off. Be careful not to wrench the nail, or it may injure the bird for a long while. To guard against this, let the joint of claw and nail be held between the left-hand forefinger and thumb. The best food for canaries, as a rule, is one-third summer Rape seed and two-thirds Canary seed. But if the birds are liable to diarrhœa, less Rape seed and a little Hemp seed may be given. At moulting time a little Saffron in the water helps them to cast their feathers quickly, and of course to renew their plumage equally quickly. If canaries are intended for breeding, they should get somewhat richer food in spring, as hard-boiled egg, a little Maw seed (unless constipative), and a little Hemp seed occasionally, but no green food, and, in point of fact, if Rape seed be given, they do not at all require green food. There should always be fresh sand on the bottom of the cage.—M. W. R.

—— If "Amateur" will take his bird out in his hand, and hold the claws up to the light, he will see a vein of red running partly through each; he may take a sharp pair of scissors and cut back to within about one-eighth of an inch of the termination of this vein. Do it carefully, or the result will be to make it bleed, which would of course cause pain.—FERNDALE.

Goldfinches and Canaries.—How can I get a goldfinch to mate with a canary hen? I have tried all sorts of ways, but never to any purpose.—T. SMITH.

Quassia Chip-Water for Canaries' Bath.—Would water in which Quassia chips have been soaked be injurious for a Canary's bath, as I think it would be good for destroying the insects? My bird always dips his beak several times before going in.—BETA. [We would not try it in the way you name. If you wash the bird in it you may do some good.]

Thrush not Singing.—Can any one tell me if there is any means of getting a thrush to sing? It is an early bird of 1879, and sang well last spring and summer, but it has not sung since moulting. It seems in perfect health. Is there such a thing as a bird organ? If so, where can I get one? Would this be a good time to teach him to sing a tune? I feed him chiefly on Barley-meal, with an occasional treat of worms or meat. I have lately given him a little crushed Hemp-seed, mixed with the meal. I keep it in a cool place, and put it out in fine weather.—DOLLY.

Lime-washed Cages for Canaries.—Will any reader inform me if lime-washed cages are injurious to Canaries? If so, what would do better than lime?—J. H. L.

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REGISTERED FOR TRANSMISSION ABROAD.

SILVER FIR.
(PICEA NORDMANNIANA.)

THIS distinct and beautiful variety of Silver Fir was discovered by Prof. Nordmann growing on the summit of the Crimean Mountains; it was afterwards found to be common on the declivities of other mountains adjacent to the Black Sea towards the east, where it forms a majestic tree from 80 ft. to 100 ft. in height. Since its introduction into this country (some thirty-two years ago) it has proved to be one of the hardiest varieties of the Silver Fir. It commences growth late in spring, thus never suffering from the effects of spring frosts—a great recommendation for planting in low-lying situations, where many of the less hardy Conifers do not succeed satisfactorily. It is slow of development when young, and inclined towards a spreading habit; but when once planted out into permanent quarters, and its tap-root fairly established in the ground, it begins to grow more rapidly, and soon shapes itself into a well-balanced tree. In suitable soils it makes an annual growth of from 15 in. to 18 in. Deep, heavy, rich loam, resting on clay or rock, is the most suitable formation for its healthy progress. The contrast in its pale green foliage in summer between the old and young growths, and the beautifully glaucous coating underneath its foliage, is very effective; while the silvery appearance underneath its leaves is hardly perceptible in young plants unless closely examined, but when the tree is older, and upwards of 20 ft. high, this glaucous appearance is at once in striking and beautiful contrast with the colour of the branches on the upper side. The timber of this tree is said to be harder than that of the Common Silver Fir (Picea pectinata). The latter tree grows to a height of upwards of 140 ft., girthing 16 ft. at 5 ft. above the ground, and containing from 450 ft. to 550 ft. of timber; whereas Picea Nordmanniana only grows to a height of 100 ft. in its native habitats. Silver Fir timber does not command a high price, therefore Picea Nordmanniana can hardly be recommended to be planted with a view to its becoming a profitable timber tree; but, on the other hand, for its ornamental character, planted singly on lawns or in groups amongst other trees, it is one of the hardiest and best of trees belonging to the extensive family of Coniferæ.

NORDMANN'S SILVER FIR (PICEA NORDMANNIANA).

HARDY PLANTS FOR WALLS.

PERHAPS nothing in the garden is more objectionable to look upon than walls or buildings defaced by nail holes, the result of tacking up climbing plants, unless it be their sprawling about in the wild, uncared-for condition which they too often assume. No wall that has any pretention to neatness and finish should have a plant trained to it without either a trellis or strained wires, unless it be such plants as Ampelopsis Veitchi and the different varieties of Ivy, that cling with such tenacity, as not to require any other means of support than that which Nature has given them. A very fine and pleasing effect may be made by using these two kinds of plants alone in alternate divisions of 5 ft. or so wide, according to the space to be covered; but when this is done, it should be with the Ivies of neat, close growth, such as Hedera elegantissima and H. aurea, which, if clipped every spring, make fresh bright foliage. The contrast between these and the Ampelopsis is most striking, and particularly so during the autumn, after the latter becomes a rich claret colour, as it always does in a light, exposed situation. The only drawback which it has is its being deciduous, but by planting it, as above indicated, between ornamental Ivies, its foliage is not so much missed for the short time it is off as it otherwise would be. Those, therefore, who have walls they wish to cover with something really cheerful-looking, that will give them little, if any, further trouble, cannot do better than use these plants for the purpose; and if the soil before putting them in is well broken up, and a little rotten manure added, they will not be long in running to the top especially if assisted occasionally during the summer with soap-suds or other similar sewage, as their roots, being so close to the building, are not in a position to be benefited by any rain that may fall. On dwellings, most people have a desire for Roses, and charming wall plants they are, besides which it is the only situation in which some of the best of them can be grown successfully, owing to the shelter and protection they require. Take the Maréchal Niel for instance, the young foliage of which gets pinched and cut about when grown exposed as standards or on trellises, but on walls facing south or south-west they escape and flower profusely. The grandest display of this fine Rose I ever

saw was in a position of this kind; but, wherever planted, the thing is to encourage as much young wood of medium size as there is room to lay in, as it is from this that the whole of the flowers are produced. To spur this in or to prune as most other Roses are pruned is to cut these away, as almost every bud, except those at the base, contains a bloom in embryo, and it is the same with most other climbing Roses, all of which flower with much greater freedom when treated in the above-named way. The best plan for training these is to drive in some studs with holes in the end, through which to run the wires for support, and then get a strain from one end, that each may be made tight and fast. If these wires run along every second or third course they will be quite near enough together, and save the introduction of nails and shreds, besides giving greater security. For training Clematises, Honeysuckles, and other similar twining plants, wires strained vertically are best, as then they are in the right direction for the young shoots, which wend their way up them without any assistance. The great improvement that has been made in the first-named of late renders them very desirable as wall plants, a position in which they succeed admirably, and show off their magnificent flowers to great advantage. C. Jackmani and others of similar depth of colour are most striking on pale walls, the light backing showing up in capital contrast with the blue flowers, and red brick does the same for such delicate shades as C. lanuginosa and others of that class. To grow these really well they require great depth of soil, and not only this, but plenty of rotten manure as well, and to be liberally assisted when growing and blooming with water or sewage, which greatly prolongs their beauty. The flowers of these being made on the young growth, the way to treat them is to cut off most of that made the previous year, leaving only a bud or two at the base, each of them will start and again fill up the space made vacant. Some growers cut them entirely down, but that only answers for certain kinds, and for such as are grown in beds, but even with these it has a weakening effect, as they are so long denuded of foliage. Another strikingly ornamental plant for walls is the old Bignonia radicans, a plant that is not nearly so well known as its merits deserve. I well remember how much I was struck with it the first time I saw it in bloom, rivalling, as it did, many of the tender exotics grown with so much care under glass. The flowers of this fine old creeper are about 6 in. long, trumpet-shaped, and are borne in clusters at the ends of the young shoots, and as these are somewhat stiff and stand out from the wall 2 ft. or so, the whole are seen to great advantage. Bignonia radicans is a plant that requires a warm aspect and a light, dry soil to grow in, and if these conditions can be secured, it soon covers a large space. Before planting the best way is to drain the border at a good depth by putting in a layer of brickbats, which will quickly carry off surplus water during the winter, and raise the temperature several degrees; and if, in addition to this, the roots be kept mulched over in frosty weather, the plant will be rendered tolerably safe. Many of the supposed tender plants would stand a great degree of cold if protected in the above-named manner, as the collar and the main feeders are the parts first affected, they being very susceptible of injury from rupture of the bark and sap vessels after being frozen through when gorged, as they are then, with moisture. One of the grandest plants for a south wall is the Exmouth variety of Magnolia grandiflora, a truly regal plant, having leaves nearly 1 ft. long of a very bright pleasing green colour, and Tulip-shaped flowers as large as a basin, that exhale a strong perfume resembling that of a cut Lemon. Near the west coast and in favoured localities the Magnolia is sufficiently hardy to stand away from the protection of a building; it then forms large, handsome shrubs on lawns, but inland, and in colder districts, it is useless attempting its culture in this way, as, although it may escape for a time, it is sure to get destroyed in the end. A deep, light, sandy soil suits it best, and in this it ripens its wood, and flowers with more freedom than when it grows rampant with large pithy shoots. Lardizabala biternata, Ceanothus azureus, Escallonia macrantha, and Passiflora cœrulea will succeed in favoured situations, but are not to be depended on as permanent plants, one of the best of which for villa residences is Cratægus pyracantha; that does well on any aspect, and is highly ornamental when laden with its coral-red berries. The habit and growth, too, are all that can be desired for a wall, and the branches admit of training horizontally along on wires with the greatest regularity. For the sides of porches or other low, exposed positions of that kind, Berberis Darwini and stenophylla come in admirably, as they are very hardy, and have foliage of a bright, shining green; in addition to which they flower in the most profuse manner possible during the early spring months. The way to treat them is to spur them in immediately their beauty is over, so as to afford time for fresh young growths to form, on which they bloom the following year. S. D.

TOWN GARDENING.

FRUIT AND VEGETABLES.

I WILL now give a few hints on the culture of the Vine, the Strawberry, and the Vegetable Marrow, which trio will be found to be the most suitable in the way of fruit and vegetables to grow in town, and then proceed to window gardening.

The Vine.

Out-of-doors.—The great thing is to have a good situation. A Vine will grow and look green on almost any wall, but if you want fruit, and wish it to ripen, you must have a wall looking nearly due south. Moreover, your wall must not be shaded, at least for any considerable portion of the day by any high building, but be freely exposed to the sun's rays from morning to night. Supposing such a favourable position to be secured, however, the next thing to be considered if you want really to make a success of it is the

Border.—Now, though the Vine will grow and often fruit well in almost any kind of soil, yet if this happens to be too much or too little drained, too rich or too poor, your Vine may live, but will not do well; certainly will not give you any presentable fruit. So that unless the soil at the foot of the wall is suitable, or if there is any doubt at all about it, by all means make a proper border. The first point is to give the Vine as much root room as possible within reasonable limits. A border for such a Vine or Vines should certainly not be less than 4 ft. wide, and if it is 8 ft. or 10 ft. so much the better, but it need not be more than that. A suitable depth is 2½ ft. or 3 ft., and you should allow for drainage as well, and if you can raise the bed a foot or so above the ground level, so that all may be high and dry, and consequently warm, for low, wet soils or beds are always colder than high and dry ones—remember this in everything—so much the better. So that if you take out your bed as large as you can up to the size given and make it about as long as it is wide, unless more than one Vine is to be planted, then longer in proportion to the depth of about 2 ft. 6 in., and if necessary arrange a drain at that depth; it is better to do so in any case. The bottom of the bed should be made hard by ramming stones into it, or, better, making a concrete bottom sloping from both sides slightly down to the centre where the drain is. Put 9 in. or 1 ft. of broken bricks or other clean rubble on the bottom, and over this a layer of grass-sods or turves turned grass side down.

Soil.—Fill up with the most suitable soil you can get. This must not be too rich, or the Vine will make a rapid but soft and fruitless growth, nor must it be too poor and rubbishy. The best soil for the Vine is one naturally rich enough to supply all that is needed, and no more; so that a good sandy loam, rather inclined to be peaty, or else with a small proportion of peat mixed with it, mixed with only a small proportion of leaf-soil or manure, and a slight admixture of crushed bones, burnt oyster-shells, and soot if the soil comes from the country, is most suitable. It should be used in rather a rough state, and trodden in firmly, and also be made 6 in. or 9 in. higher than the ultimate intended level, as it is sure to sink.

Planting and Varieties.—The best time to plant is in spring, just when the young shoots are 3 in. or 4 in. long. The best kinds are, Early Black July, a fine Grape, Early Saumur Frontignan, white, and Royal Muscadine, amber-coloured. The Vine should be planted on a little hillock raised 4 in. or 6 in. above the general level of the bed, for this and all fruit trees cannot endure to have the collar at all buried.

Training.—As to the training, much depends on the height or length of your wall, whether there are any windows in it, &c. Of course if it is a very high wall and the Vine is to reach the top, you must not spread it out laterally nearly so much as if the wall were only 5 ft. or 6 ft. high, and in such a case the Vines must be put pretty close together, say 5 ft. or 6 ft. apart if the wall is over 12 ft. high, and the main shoots or rods had better be trained up vertically; four or five of these will be sufficient. If the wall be low, then let the main shoot run up to the top without stopping; take out the point and prevent its going any higher, select three or four of the strongest side shoots from this on each side, and pretty nearly equi-distant from each other. Train these out laterally or horizontally, and if the wall is not more than 6 ft. high, these side rods may reach to 10 ft. or 12 ft. on each side, but not all at once. When you have got your Vine into shape, that is, as many leaders or rods as you want fairly started in their proper places, let them grow the first year as they like to a length of 6 ft. or 8 ft., then take out the points; this will be about July. They will not grow much more after this, but the strength will flow into the buds forming at the axils of the leaves along these shoots. When pruning time comes, that is, always when the leaves have all fallen in autumn, cut all these long rods back to about 2 ft. from the base, or 3 ft. if very strong. In the spring every bud at the axil of each leaf will develop into a shoot, and these secondary side shoots are those that produce the fruit, though they will not have any to speak of the first two or three years, that is, if the plant was a young one. When these side or fruit-bearing shoots have developed three full-sized leaves stop them, and continue to stop all future shoots from these or any other part of the plant all through the summer, except the one at the end of the main rod if it is a strong one; if not, take it out and take the nearest vigorous one you can get. Train this so as to form a continuation of the rod; stop it at 6 ft. or 8 ft. and cut it back to 2 ft. or 3 ft. again in the autumn, so as to let the Vine extend only about 2 ft. each year. In this autumn pruning all the side shoots or spurs must be cut back, leaving only two, or at most, if the second bud is not strong, three buds from the base. In spring each of these will produce a shoot, and just as they start you must go over them, and pinch out all but the strongest and fattest looking, leaving only one. These will, the third or fourth year, show fruit at the third or fourth joint, and as soon as you can see the blossom, pinch out the point of the shoot at one joint beyond the fruit, and all barren shoots to be severed the same at the third or fourth joint. Now you have the whole system at a glance; the main rods trained straight and equi-distant either horizontally or vertically, as may be most convenient, and the side shoots, bearing the fruit, regularly thinned out in spring, leaving only the one most likely to bear fruit, these stopped and in autumn pruned back. As soon as a main shoot or rod gets worn out, from the excess of eyes formed, which will be after three or four years of fruit bearing, cut it right out, and induce another young one to take its place springing from the base. There are other systems of training Vines, but this is, in our experience, the best, at least for out-door work. What is termed the "long rod" system is very good, but more suitable for Vines under glass.

Watering.—Plenty of water must be given at the roots, especially in such a made and drained border, just when the fruit is swelling, but only if the weather is dry and artificial moisture is needed, as the Vine does best in a somewhat dry soil; and you cannot syringe the foliage too often in dry weather, except just when the Vine is in bloom and setting the fruit, when it is better to be kept dry, and, of course, when the fruit is ripening no moisture is needed.

The Strawberry.

Strawberries may be grown in an ordinary bed in the garden, as in the country, but we

should strongly recommend a higher and more favourable situation, such as a raised bed, or one made on a flat roof of an outhouse or on the house itself. Strawberries do not require a great depth of soil to grow and fruit in, so that a bed made in a good-sized box or case, 1 ft. or more deep, and as large as possible, or a raised bed with boards for the sides, will suit them capitally. Some inches, as many as you have room for, of gravel or "ballast" should be placed in the bottom, over that a layer of Grass sods or spent Hops, and then fill up with good loam, rather inclined to be sandy, with a small admixture of very old and decayed manure or leaf-mould, put your plants in 1 ft. or at most 15 in. apart, or even less, for you will do best with small crowns close together, especially where room is limited, and make the soil very firm, indeed hard. We advise planting in spring, for these and for everything else in fact, so that the plants may get a good hold on the ground before winter. Protect them with litter or in some way in winter; in fact, if you can do it, it is far better to have glass over them at this season; the plants will bear next spring. Any kind will do that is vigorous and free bearing, and a late kind rather than an early one, so that it is hardy as well. Syringe the plants pretty often when starting and again when the fruit is swelling, and at this time supply what sustenance is necessary by means of frequent soakings of liquid manure at the root, taking care that the liquid does not touch the leaves or fruit. Of course the plants must be exposed to the full power of the sun at all times, or there will be little or no fruit.

Propagating, &c.—Take layers off into 3-in. or 4-in. pots at the proper season, setting the pots on the bed, and a stone on the runner to keep it in place till rooted; and stop the runner beyond the pot. As soon as well rooted and established, separate them from the old plants, and stand or plunge them close together in a sunny place either for the formation of new beds, or for shifting into larger pots to be fruited there. Strawberries in beds must have all runners that are not required for propagation removed as soon as they appear; they must be kept well weeded and the surface occasionally stirred, though the soil must be made and kept firm. Do not let a bed stay after it has fruited for two years, but make a new one. Just as they are starting the second year give a top-dressing of rich soil, and do not stint them of liquid manure when the fruit is set, especially if the weather is dry.

In Pots under Glass.—If you have a greenhouse or a frame or two, plants grown in pots under glass give the best results. The layers for these are rather better taken from beds; you can very likely purchase them, but you can get them from pot plants as well if there is no other way. Layer them into large 3-in. or 4-in. pots as early as you can, using a nice rich sandy loam and not much drainage. As soon as rooted, separate them and stand close together on or plunge in ashes in a sunny place. See that they have enough water, and when the pots are full of roots shift into 6-in. pots, and plunge or stand as before out-of-doors. Give them plenty of water, and when getting pot-bound give liquid manure pretty strong at every other watering, and vary the nature of this as much as you can, using manure water, soot water, guano, &c., in turn. As soon as the air gets dirty, about October, remove to a cold frame or house and plunge in ashes or hops, &c., close to the glass, and do not crowd them too much. Give plenty of air, and in spring a few may be removed to a sunny shelf of a greenhouse, and liquid manure and water given as required when they start into growth, or a frame with a bed of gently fermenting material be prepared and filled with some of the forwardest of them, plunged in March or April; these will fruit early, but do not let the roots get through the pots into the manure, &c., beneath, or you will have nothing but leaves, and fine ones, too; or they may be left to fruit in the cold frame. The main thing is to get the plants well ripened and hardened in the open air in autumn for the next year's fruiting. Do not over-water them at that season, but give enough to keep the soil just moist and prevent the plants flagging. Always prefer plants having one rather smallish, but firm and prominent central bud or crown.

Vegetable Marrows.

The way to grow these is to have a raised bed, with plenty of nice, sweet, fermenting materials underneath, in a warm and open situation, and yet protected from cutting, and especially from east, winds, which are most injurious in town gardens. Nothing is better than stable manure, if this can be had, though it must be well sweetened before use. Put a barrowful of good loam, with some leaf-mould or decayed manure, on the top, and if you are in good time, not later than the middle of May, sow the seeds on this under a hand-glass or a bottomless box, and a sheet of glass over it will do well. When up, and the second rough leaf is formed, throw away the weaker ones, and plant the two strongest and stockiest as far apart on the bed as you can; if the bed is small, one plant will do. Cover them over with the glazed boxes till they have got a good start and begun to run; then remove. Give water (tepid) when needed, and by the end of June and in July they will make a wonderful growth. Do not stop them, but let them run, though if so many fruit begin to swell on a single shoot that it cannot supply them, and they begin to turn yellow or drop, take out the point, so as to throw the strength into the fruit.

Give plenty of water, and syringe the foliage frequently. Good fruit can also be grown by planting in good-sized boxes or artificial beds on a flat roof, and they will often do better on such a raised position than down on the ground. Put plenty of drainage in the box, and fill up with a mixture of equal parts of good loam and manure in a half decayed state or fresh, so that it is sweet is best.

Plant the Marrows out in June. Where no special hot-bed is made early enough to raise the seeds, this can be done in pots or boxes of sandy loam and leaf-mould, placing them in a frame with gentle heat, or in a greenhouse, or a warm kitchen window. When the first rough leaf is formed, pot off singly into large 3-in. or 4-in. pots; harden off, and plant out in the boxes or beds early in June, or earlier if there is any bottom-heat. But there is no absolute necessity for this latter. We have seen some of the finest plants and fruit produced by putting a couple of plants into a frame that had been used for raising bedding plants; when these had been removed and the heat had subsided, the lights were kept on for a time, and when the plants began to run outside taken away altogether. We have found Moore's Vegetable Cream and the Long White the best kinds to grow.

B. C. R.

THE LAW RELATING TO GREENHOUSES.

With regard to this question, the law on the subject shortly stated appears to be as follows: By the 38 and 39 Vic., chapter 55, sec. 157, it is enacted that every urban authority (*i.e.*, the Local Board) may make bye-laws with respect to certain matters therein specified, one of which is "with respect to the structure of walls, foundations, roofs, and chimneys of new buildings for securing stability and for the purposes of health," but nothing is said about greenhouses. These bye-laws when made are required to be submitted to and confirmed by the Local Government Board, and are required to be printed and hung up in the offices of the local authority, and a copy delivered to any ratepayer of the district to which such bye-laws relate on his application for the same, and to be open to the inspection of any ratepayer of the parish at all reasonable hours (see secs. 184 and 185 of the same Act).

It is by virtue of these bye-laws that the surveyors of the local authority interfere with the erection of "greenhouses," although it is questionable, judging from the wording of the Act, whether it was ever intended that such a class of buildings should have been affected by it; the buildings contemplated by the Act clearly mean buildings intended for habitation. The question therefore resolves itself into this: "Is a greenhouse a building within the meaning of the Act?"

As I have said before, the power of confirmation of bye-laws rests with the Local Government Board, but it is provided by the 182 sec. of the above Act "that no bye-law made under this Act by a local authority shall be of any effect if repugnant to the laws of England or to the provisions of this Act;" therefore I take it that not even the approval of the Local Government Board could be held to justify the enforcement of any bye-law which might be shown to be repugnant to the provisions of the above-mentioned Act.

The above applies to places out of the metropolis, but as many parts of the suburbs are just within the limits of the Metropolis Local Management Acts, I append such information as can be gained upon the subject in these Acts.

By the Metropolitan Building Act, 18 and 19 Vic., c. 122, as to the regulation and supervision of buildings, it is stated in the list of exemptions from the operations of that Act, that "all party fence walls and greenhouses, so far as regards the necessary woodwork of the sashes, doors, and frames, shall be exempt from the operation of the first part of that Act." This is the only mention that I can find of a greenhouse, and the questions to decide are, is the above exemption a complete exemption, or only a partial one? and is a greenhouse a building within the Act? If it be only a partial exemption, then all the other portions of a greenhouse not being sashes, doors, or frames must conform to the regulations of the Act which relate to the structure of buildings, and which enacts that "every building shall be enclosed with walls constructed of brick, stone, or other hard and incombustible substances." G. W.

The Milk Thistle.—This old native biennial or annual plant should find a place oftener in our gardens in these days of fine-foliaged plants than it does. It is a hardy, easily grown

Milk Thistle (Silybum marianum).

biennial, and raised readily from seed. It looks exceedingly well in the mixed border before the flower-stems spring up. It is, however, most suitable for growing in a semi-wild state on dry banks and similar places. It has large and handsome shining green leaves variegated with white.

House and Window Gardening.

MY GARDENING FAILURES.

I read Gardening every week, and occasionally its perusal inspires me with hope; more frequently it plunges me in what I may call poetically an abyss of gloom and blank despair. All this may sound uncomplimentary, but it arises from the fact that I am passionately fond of God's choicest gifts—flowers, and am at the same time an ass. An ass I dub myself, inasmuch as year after year I strive to work out horticultural problems which in theory seem as easy as the traditional A B C, only to find that in their practice "that way madness lies." Furthermore, I spend much valuable commodity, money, to wit, in the purchase of choice plants, and when I find them at the expiration of a few weeks "faded and gone," a charming and highly satisfactory result which always follows, I again call myself an ass, because I might have bought much Tobacco with the money, and asphyxiated myself, or at any rate cultivated heart disease.

With your permission I will give you two specimens of my good fortune. Last year I bought many hundreds of bulbs, paying a high price at a first-class seedsman's, and carefully planted them about the end of October in my little garden. I followed out all the popular notions most scrupulously with regard to the

conditions of soil, the depth at which I planted my bulbs, &c., and this was the result. Crocuses flourished magnificently, that is, until the flowers came. Then, ah then, fowls of the air descended in the shape of sparrows, and from early morn, when I was of course asleep, until dewy eve, or at such periods as I was not "armed" with a small pistol, they waxed fat on my golden flowers, and exterminated the purple and white ditto in their vigilant search for more yellows. This I did not grumble at, because, as my wife says, it was my own fault for planting them. Besides, sparrows look cheerful about the garden, and their melodious chirp at early morning, particularly if one has been burning the midnight oil (as is frequently my fate) and one wants sleep, is invigorating, and teaches one the beauties of patience.

With regard to the other bulbs, one perhaps in every six came up. Some flowered and some didn't. Those that flowered were very "'ornary" specimens, as some one hath it, and of those that did not, it is unnecessary to enter into description of the beauties of the blossom. Then I bought seeds; and, sir, picked out packets with some of the most terrific names I could light upon. The result in their case was a wilderness—a lovely wilderness where flowers gave way to foliage, and quite right and proper too. Geraniums made "leaf" and "wood" to perfection. Bloom was at a discount. That of course did not matter, because plenty of foliage and lots of wood does away with any trivial disappointment in the matter of blooms. At any rate I had to persuade myself that it must be so.

This year I have built myself a greenhouse. Now, thought I, miserable ass that I was, shall I have flowers. I bought Ferns, Primulas, Camellias, Bouvardias, Cyclamen, Palms, India-rubber plants, Oleanders, Geranium, Heaths, Hyacinths, Tulips, and really more things than I care at the present time to contemplate. Result: Camellias have generously shed every bud they possessed; Ferns turned brown and withered; Primulas have run up into tall stalky plants, something like Lettuces run to seed, lost all their original colour, dwindled in the flower until the blossom is only half the size it originally was, and generally gone wrong; Cyclamen have likewise turned over the wrong leaf, literally; the flowers have withered, the stalks become sappy and soft, and seem to me, in my asinine capacity, as though they were in want of a tonic; Geranium trusses have died down, and the plants appear to be suffering from jaundice, as all the leaves have turned yellow.

My house is a lean-to, heated with a stove and hot air pipes running all round it, and out at a chimney at the back. I endeavour to maintain a heat of 60°, but candour compels me to admit that it occasionally differs.

Would some kind friend, eschewing all technical terms, for they drive me crazy, tell me in good round Saxon the cause of my repeated failures? Likewise say what would really flourish, and what would inevitably fail. I might thus have a chance in picking out a fresh stock from your advertisement columns of choosing something which would not end entirely in DISAPPOINTMENT.

Camberwell.

Aucubas for Windows.—Small, compact plants of the various forms of Aucuba, when well furnished with berries, are much valued in London during winter for window decoration. The way in which they are chiefly obtained is by fertilising old-established plants with male pollen, and then layering in light sandy soil, good-sized branches with bushy heads being selected for the purpose and pegged down. In a short time they strike root, when they are severed from the old plant, and in autumn are lifted, potted, and placed indoors to colour their berries. Standard plants are obtained by grafting on the common Aucuba.—S.

Myrtles.—These are among the best of window plants when kept fresh and growing. They will stand a good deal of rough usage, but in order to have them in good health they should be grown in turfy loam and sand, and be frequently syringed to keep them clear of dust. They need plenty of air, and succeed best in the window of a cool room. During summer they are best placed out-of-doors. The common Myrtle (Myrtus communis), which we now illustrate, is the kind generally grown in windows, but the double-flowered kind is by some considered much more beautiful. A neat bushy plant looks very nice when in bloom, but the beauty of this Myrtle is much enhanced if trained as a standard with a stem about 2 ft. high. However, as the double-flowered Myrtle grows rather slowly, it is a good plan to graft it on the common broad-leaved kind (Myrtus communis), of which rooted cuttings, when planted out in suitable soil, make in one season plants fit to be grafted on at the above-mentioned height. The best time to perform this operation is in the end of August or beginning of September, when the branches of the Myrtles are sufficiently ripened, and the plants must be kept in close air until the scion has taken, after which period they may be treated as is commonly the rule to deal with plants under such circumstances, that is, to gradually harden them off, to untie the ligatures, and to cut away the branches of the stock. It must be understood that all the branches must not be cut clean off at once, as that would very likely cause the death of the plant from overflowing of sap, while, on the other hand, these branches assist to strengthen the trunk until the scion has grown sufficiently to consume all the

Common Broad-leaved Myrtle (Myrtus communis).

nourishment the roots furnish. Care must be taken to get a well-shaped crown, therefore a judicious stopping of the branches must be made in time, and, of course, they must be pruned annually in spring by cutting back the strong ill-placed shoots, so as to cause them to form a bushy well-shaped head.

WINTER AND SPRING FLOWERING PLANTS.

THOSE who make a point of furnishing their dwellings with flowering plants during summer, and who have no glass accommodation, except ordinary garden frames, often feel much at a loss in winter for material wherewith to maintain their indoor decoration; but, by the use of a good-sized frame, say three or four lights, the length of time during which they enjoy these flowering subjects may be greatly lengthened by always having something in bloom from the latter part of winter through the spring, provided the right plants for the purpose are selected. It must be borne in mind that I am now treating of such plants as will only require protection from frost, with no artificial heat whatever; and, therefore, it is essential that the subjects employed are all but proof against damp, as in a hard winter it frequently happens that the frame will require to be kept closed, or almost closed, for several weeks together, the lights being covered with a thick coat of Fern, litter, and mats, and the sides also surrounded with as much litter as will keep out frost.

Amongst the first plants that I should recommend for this kind of treatment are the different varieties of Primula cortusoides, than which nothing can be more beautiful early in spring; their flowers, which are produced in profusion, vary from white to the deepest lilac, almost approaching crimson; these Primulas will live in the open ground in favourable spots, but they never flower so finely as they do when grown in pots; 6-in. or 8-in. pots are large enough for them; they should be well drained, and good loam should be used with a little leaf-mould and sand. The Japanese Primula (P. japonica) is suitable for associating with them; this, in proportion to the size of the plant, should have plenty of root-room, the soil, too, should be well enriched with rotten manure, and manure water should be applied freely when the plants are in vigorous growth. Thus treated they will make leaves as large as the hand, with flowers proportionately strong; the whole plant, indeed, will be so different from what it is usually seen when confined to small pots with insufficient sustenance, as to assume quite another character.

Some of the laced forms of Polyanthus will form suitable companions to these, making handsome window plants, as do also the common double white and lilac Primroses; different varieties of Myosotis, of which dissitiflora is one of the best, also succeed well under similar treatment; the pots for these need not be larger than from 4 in. to 6 in. in diameter. Hepaticas, naturally early flowerers, will come into bloom in a cold frame a month or six weeks earlier than in the open ground; the beautiful double blue and pink varieties are two of the best, their flowers lasting long in a cut state.

Dodecatheons (American Cowslips), of which there are several beautiful kinds—white, lilac, and violet—likewise do well in cold frames, and are amongst the most distinct and beautiful flowers which one can possess.

Campanulas, though not early bloomers, should likewise have a place in this frame of specialties. The elegant drooping C. fragilis, both blue and white, are amongst the very best plants that can be grown for a window, blooming, as they do, in such profusion as to almost hide the leaves of their pendent shoots, and, when their principal flowering season is over, still giving a succession, though less in quantity, up to late in the autumn; 6-in. or 7-in. pots are large enough for them. The stately C. pyramidalis is a perfect contrast in every way to the foregoing, its flower-spike forming an elegant pyramid, that, when well grown, with plenty of pot room, will attain a height of from 6 ft. to 10 ft.; there is no plant grown that is more effective in a hall or on a staircase, and during the time of its blooming, for several weeks, it will do with less light than most plants. Both the blue and the white varieties should be grown; they require liberal pot room, say pots from 9 in. to 13 in. in diameter, according to the size which the plants are required to attain. These are biennial, and, if propagated from suckers in spring, or raised from seed, as previously recommended, they will come in most usefully next summer. In the case of these, as well as the other sorts of Campanula just named, care should be taken to pick off the capsules as the flowers fade, otherwise they are sometimes liable to communicate decay to the advancing buds; good ordinary loam answers best for them.

A few of the better varieties of Pansies I would also recommend, but they should consist of the best and most distinctly-coloured show kinds, which are vastly preferable to the magpie-coloured fancy sorts. Although naturally early-flowering plants, when grown in pots they come in some weeks sooner, and, not being exposed to the beating rains and cutting winds of early spring, have a fresher appearance than those seen at that season out-of-doors; another advantage is that where the flowers, which are serviceable for cutting, are so required, their stems, when grown in this way, are considerably longer than those of outdoor blooms.

As a matter of course, Violets should be included, the Czar and the Queen of Violets being two of the best for the purpose; they succeed well in ordinary loam, with some manure and leaf-mould; Pansies thrive most satisfactoilry

in fully one-half vegetable mould mixed with loam; in both cases enough sand should be used to ensure porosity; 5 in. pots for the Violets, and 7 in. or 8 in. for the Pansies will be found to be sufficiently large.

As regards Dielytra spectabilis and its white variety, if moderate-sized roots are now taken up and placed in 8 in. or 9 in. pots, they will bloom several weeks before those out-of-doors, producing their handsome drooping sprays unscathed by spring frosts. The pendent blooms of this plant are never seen to greater advantage than when hanging from the sides of a vase mixed with other flowers. To these should be added Scillas (including S. sibirica, S. bifolia, S. campanulata and its white variety) and Dog's-tooth Violets (both white and rose-coloured kinds). Hyacinths, Narcissi, Crocuses, and Snowdrops, as a matter of course, should receive attention, as many of them being grown as the frame or frames will hold. The whole of the above plants should be plunged in a bed of ashes inside the frame. Thus managed, they will require less attention in the way of watering, and be much less liable to suffer through the effects of frost, should any mishap occur so as to cause its getting inside the frame, which should stand in a sheltered place, but, above all, thoroughly exposed to the light, and under the full influence of all the sunshine that at this dull season can be got; to still further admit of the solar rays exerting an influence over the growth of the plants, the frame ought to be well raised at the back, so as to make it slope abruptly to the south; 18 in. of straw should be packed round the outside, and kept in its place by stout stakes driven into the ground; dry litter ought also always to be at hand to lay over the glass.

In covering frames in winter, I have found it best during severe weather to first lay mats on the glass, then 6 in. of litter or Fern, and another thickness of mats on the top, and if light wooden shutters or light frames, on which have been nailed some ordinary asphalted covering, be laid on the top of all, the whole will be kept dry, which is a great desideratum, as when covering material is dry it wards off double the amount of frost it is capable of doing when wet; by laying mats under the litter in the way described, the glass is kept much cleaner than it otherwise would be—an important matter, as the more light the plants get the better. Air in abundance should be given on all favourable occasions, and care should be taken to keep the ashes in which the pots are plunged as dry as possible. From a frame such as that just described, with the plants fairly attended to, a great deal of pleasure, as well as a good supply of flowers, may be had, that will go far to while away the dreary months until blossoms are more plentiful out-of-doors.—B.

GLASSHOUSES AND FRAMES.

A FEW HINTS UPON THE CULTIVATION OF ORCHIDS.

HAVING been amongst Orchids for a considerable time, I thought a few remarks how I grow them would not be out of place in GARDENING ILLUSTRATED. Taking, for example, the Dendrobium nobile, D. Gibsoni, D. fimbriatum, D. densiflorum, and D. chrysanthum, which are equalled by few and certainly not surpassed in the beauty of their flowers by any other Orchidaceous plant, and if the undermentioned directions are resorted to, they will be found very easy of cultivation.

All Orchidaceous plants require to grow them successfully a season of rest, a season of flowering, and a season of growth, all of which should be as near as possible to the seasons of those parts of the globe which they so profusely inhabit, and the above named varieties should especially be subjected to a change of treatment as mentioned above, otherwise they will never flower to perfection.

As is well known, three seasons are only mentioned in India—the hot or dry season, which is succeeded by the rainy season, and then follows the cold or winter season. In the hot season almost all the varieties of Orchids produce their flowers; in the rainy season they make their growth, and during the cold season they have a period of rest. It is an easy matter to imitate the different seasons in our Orchid houses, and by adhering to the simple rules we could flower the above genus at any time of the year required. The Dendrobium nobile, chrysanthum, Pierardi, &c., grow well when fastened on pieces of wood with copper or metallic wire. Oak branches with several arms or forks protruding in different directions are the most suitable wood for them. When the plants are making their growth, a little Moss should be fastened to the wood for the young shoots to root into.

A strong moist heat is necessary in the growing season, when they may be often slightly syringed overhead. They may be propagated by taking one or more of the stems while in a dormant state, taking care not to injure the roots, and carefully potting it in turfy peat and Sphagnum Moss, and not much raised above the level of the pot, which must be carefully drained, then plunged in a gentle bottom heat of Cocoa-nut fibre, when the plant will speedily produce young shoots.

The flowers of all the Stanhopeas are more or less fragrant, and the following method of culture will be found easy and successful: Over the drainage hole of the pot about to be used place one of a smaller size, generally covering about half of the bottom of the pot; around this is placed a quantity of broken pots, filling the pots three parts full. Next select a sufficient quantity of fibrous peat and place it on the drainage, none of the pieces being less than the size of a Walnut. In placing these, care must be taken to leave a passage for the water to escape; this may be more effectually secured by introducing a few pieces of broken pots between every layer, more or less according to the size of the plant; in fact, it is a good plan to continue the broken pots all the way up the centre to the bottom of the pseudo-bulbs after the peat becomes level with the top of the pot; the external layers of peat may then be made fast with small pegs of various sizes. These pegs penetrate the lower layers of peat and secure the whole firmly together. About 6 in. above the edge of the pot the plant is placed on the top, the roots carefully laid out and covered up to the bulbs with smaller pieces of peat and Sphagnum Moss. Continue to fasten with pegs, as before mentioned, until it is 9 in. or 12 in. above the level of the pot.

When a single pseudo-bulb is first potted it should be but slightly raised above the pot, but as it grows larger it may be progressively elevated. Unless the plants are very healthy, water is given but sparingly at the roots, and in winter very little or none is given. Great care must be taken to preserve the roots, which by overwatering, especially in winter, are almost sure to be destroyed. The general temperature of the house ought to range from 60° to 85°; in the afternoons of the growing season it must be closed early and the paths well watered, and occasionally a little water sprinkled over the plants. It is a great advantage to have a bed of Cocoa-nut fibre in the house in which to plunge the pots, as the heat from it circulates through the peat and potsherds and causes the specimens to grow with great luxuriance. Young plants are obtained by taking of one or more of the bulbs and potting them as recommended above. CHAS. WOOD.

Cool-house Orchid.—Almond-scented Odontoglossum (O. madrense).

An Almond-scented Orchid (Odontoglossum madrense).—This is undoubtedly one of the most distinct and handsome of all the species of a deservedly popular genus of cool-growing or greenhouse Orchids. Its flower-spikes bear from five to six snow-white flowers of wax-like—indeed almost leathery—texture, both sepals and petals being blotched with clear chocolate-purple at the base. The lip is cordate, having a bilobed crest, and is blotched with lemon-yellow and mottled with orange. Each flower measures 2 in. in diameter. The accompanying illustration was made in Messrs. Veitch's collection at Chelsea, where its deliciously Almond-scented flowers lasted from six to seven weeks as fresh as when they first opened.

Seedling Gloxinias.—I find these to make the best of flowering plants for rooms or for table decoration. I sowed two small packets of seed on February 20 last, and when the plants were large enough to handle, I had them dibbled into small pots and put on a front stage in an early Vinery, potting them on as they required it into 5-in. pots. The best plants commenced flowering the first week in July; on the 14th of July I had sixty in flower, and every one quite distinct. Some of the plants measured 20 in. across, and some of the flowers 4 in., and since that date I have not been without Gloxinia blossoms. Early in September I moved some plants into the stove, which soon came into flower, and the remainder will come in in succession, so as to keep up a supply through the winter.—W. W. P.

Sonerila Hendersoni. — This winter-flowering plant and its varieties (six in number) now rank amongst the most attractive occupants of warm greenhouses in the London nurseries. Their foliage is richly marbled and shaded with silvery-bronze, whilst their flowers, which run through all shades of violet, mauve, and pink, are produced in great numbers. They are well adapted for growing in pans, baskets, or vases; and even in 3-in. pots, handsome, bushy, little plants of them may easily be had. Grown in the latter way, a number of plants, some of which bear over thirty spikes of blossom, form an attractive fringe to Palms, Dracænas, and other fine-leaved plants.

VEGETABLES.

French Beans in Winter.—We have generally a fair supply of French Beans out-of-doors till November 1. By that time those which were planted in a low pit about the middle of August are ready for use. These are followed by a later sown batch in the same pit, and after they are done, those sown in pots come in. The earliest in pots are fit for use by the first or second week in December. Another sowing is made to succeed these and to come in at Christmas, and after that sowings will be made every three weeks until the middle of March, which will give a constant supply of

Beans until after Easter. French Beans are not difficult to force. For some time I have always sown the seed in 4-in. pots, and when the young plants were about 6 in. high, shifted them into 8-in. ones. With six or eight in a small pot, I found that they became very much crowded before they were many inches high, and that the pots became so full of roots that they required water nearly every hour in the day, and if they chanced to become the least dry it checked their growth very much; but now I never start them in small pots, but sow the seed at once in the pots in which the plants are to remain. Several dozen of 8-in. pots are cleaned, and about 1 in. deep of crocks is placed in the bottom of each; the soil, which consists of one-half loam and the other half leaf soil, is then placed over these to the depth of 3 in., and made very firm. Seven or eight Beans are laid on this, and covered over with 2 in. of the soil; this is also made firm, in order to prevent its becoming quickly dry. The pots are then placed in a house, where the heat is about 50° at night and 70° during the daytime. No water is given until the green leaves appear, then they are never allowed to become dry. Just before they come into flower they are top-dressed with a rich mixture, and at the same time twigs are put into each pot to support them when the Beans become heavy. Liquid manure is never given until the pods are visible. As one batch is exhausted another takes its place. Osborn's Forcing is the only kind we use for forcing; it is a compact-growing kind, and each pot will produce from six to eight dozen pods. Canadian Wonder, although excellent out-of-doors, grows too tall to cultivate under glass.—C.

Mushroom Culture without Manure.—It is not always that one can secure the horse manure and other necessaries to grow Mushrooms in the way recommended by some writers on Mushroom growing. This autumn I wanted to have some fine crops in a new Mushroom house which we have, but could not get any horse manure. I therefore collected a quantity of turfy soil, the result of thin cutting; with this I mixed a quantity of old, rotted straw and some green Grass, and threw the whole into a large heap, until it heated violently. It was then turned and well mixed, and, when still warm, was wheeled into the Mushroom house, beaten firm, and the spawn inserted in the usual way. The result is an excellent crop of good Mushrooms. When the crop seemed well-nigh exhausted, we dusted a sprinkling of salt over the bed, and watered it with tepid water, and shoals of fresh Mushrooms speedily made their appearance. Last year, among many makeshifts to secure Mushrooms, we used rotten sawdust mixed with a little horse manure, but with only moderate success. In the open ground tolerable crops were obtained late from heaps of soil mixed with Grass; but the best was from a quantity of manure very wet, in fact drenching, from a manure hill. This was placed 1 ft. thick, well beaten, and pieces of spawn inserted, wrapped in a good handful of hay. They were covered over with rich earth, and the crops were all that could be desired.—M. T. I.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 10.—Digging herbaceous border and among bedded Roses; sowing frame of early French Forcing Carrot intermixed with Radishes; also a little Incomparable Celery in heat; potting some standard Roses for next year's forcing; also some Broad Beans, placing them in Vinery, and a batch of Potatoes placed in slight heat; putting in Vine eyes; also cuttings of Purple King Verbena, Chrysanthemums, Alyssums, Salvia splendens, Heliotropes, and Fuchsias; throwing out trenches and filling them with manure on which to plant Seakale for forcing next season; planting Sweet Bays; throwing out holes in which to plant Pear and Nut trees after having trenched the ground; fumigating Gardenias and Calceolarias to keep down fly; turning manure in order to get it heated for Potato pits; pruning Roses on pillars.

Jan. 11.—Sowing more pots of Mignonette; potting Dendrobium Paxtoni and other Dendrobes in Moss and peat fibre; putting Epidendrum erubescens, Lælia majalis, and Disa grandiflora in a cold house to which air is freely admitted; putting cuttings of Salvia patens in heat; also putting in some Gooseberry and Currant cuttings; planting some Apple, Peach, Apricot, and Pear trees; also Raspberry canes.

Jan. 12.—Digging amongst bush fruits; sowing French Beans in pots and placing them in second Vinery; potting Nemophila and Saponaria for baskets; putting in cuttings of Gnaphalium lanatum, and also of Begonias; planting out Schizostylis coccinea; wheeling a portion of the rubbish-heap on to the Gooseberry quarter; making pegs in wet weather for flower beds; cleaning Onions.

Jan. 13.—Digging vacant ground; potting off autumn-struck Petunias; also Cucumbers, plunging them in pits, keeping them at 70°, and covering them at night; shifting autumn-struck Centaureas into 6-in. pots; striking cuttings of Lobelias in heat; also cuttings of Oxalis and Heliotrope; shifting herbaceous Calceolarias into larger pots; transplanting some Ghent Azaleas in order to prepare them for forcing; manuring Roses liberally; also any Plum trees that annually bear heavy crops, giving two barrow-loads to each. Turning the rubbish-heap in order to hasten decay so that it may be ready for use when wanted.

Jan. 14.—Digging borders in Rose garden; potting Veitch's Ashtop Potato for wall sides; also autumn-struck Fuchsias, and placing them in heat; plunging Fig trees, and starting house at 58° at night and 63° by day, fire-heat; putting in more Seakale and fourth crop of Rhubarb; still sending in Asparagus, Seakale, Mushrooms, Broccoli, and Spinach; putting seed Kidney Potatoes in hampers in loft, placing them end upwards and singly so as to get strong sprouts; putting ashes over Peas just coming up; pruning wall Roses, having finished those on trellises; planting some Winesour Plums.

Jan. 15.—Sowing Cyclamen seed; also Little Gem Peas under cases; taking offsets from Echeveria glauca and putting them into slight heat; potting Gladioli in two parts loam, one part manure, and one part peat and sand; putting Zygopetalum maxillare on Tree Fern stumps and placing them in a cool house; putting in cuttings of Tree Carnations; planting some Chives, Sorrel, and Royal Albert Rhubarb; Hyacinths coming into flower freely.

Glasshouses.

During the next three months Camellias will play an important part in greenhouses, especially where there is a sufficient number of plants proportionate in size to the dimensions of the house which they occupy. If these be arranged so as to act as a background to forced Azaleas, Cytisus racemosus, Epacrises, Correas, hardy shrubs, Cinerarias, Primulas, forced bulbs, standard Tree Mignonette, Salvias, Epiphyllum truncatum, &c., in combination with Agaves, Draceenas, Yuccas, Cordylines, Dasylirions, Lomatias, Phormium tenax, Tree Ferns, Cycads, and Macrozamias, a collective effect may be made not easily surpassed at any season of the year. Where a good supply, in small pots, of Lycopodium denticulatum, Isolepis gracilis, and Centaureas is at hand, they will be found most useful in hiding the larger pots.

Roof Climbers.—So far as these are concerned, there are few that, just at the present time, will contribute much by their display of flowers, but they should be all carefully gone over, and so far cut in as to prevent anything like crowding, or their spreading under the whole roof surface in a way that will too much exclude light. In securing them in their places, the practice of tying them in so tightly as to give the whole a stiff appearance should be avoided. On the contrary, a sufficient number of shoots should be left hanging in a pendent position to prevent this. Where insects of any description are troublesome, they should be thoroughly cleaned while the plants are comparatively in a dormant condition. For a like reason, and to enhance the general appearance, all the permanent occupants should, as often as time can be found, have their leaves sponged; this is the more necessary at this season when the syringe and garden engine are better not used.

Temperature and Air-giving.—The temperature of conservatories should be from 46° to 50° in the night, according to the weather, with a proportionate rise by day; this, as a matter of course, will necessitate an almost continuous use of fire-heat, to avoid the over-drying influence of which sufficient moisture must be given in the immediate vicinity of the pipes, otherwise the air will get so dry that its effects are certain not only to be seen in causing the unexpanded buds of Camellias to fall off, but it will also act injuriously upon other plants. Be very careful about the admission of air, even at such times as the sun happens to shine out clear and bright, giving it, as far as possible, at the roof. Much better let the thermometer rise considerably on the few occasions that it may be expected to do so for several weeks hence than admit a volume of cold air in direct contact with the plants.

Winter-flowering Heaths.—As soon as these have done blooming they should be at once cut back, so as to cause the principal shoots to break low enough to keep them from assuming the straggling condition they will get into if left to go on for another season without the last summer's growth being sufficiently reduced.

Primulas.—Both the single and double varieties should, where possible, be kept in a light house or pit, where they can be accommodated with a night temperature of from 45° to 50°, keeping them as close to the glass as circumstances will permit. The plants of the single varieties intended for later flowering should be some degrees cooler than this, and all must be watered with care, as if the footstalks of the leaves get much wet they will be liable to decay.

Cyclamens.—To grow these plants well they should be treated through the winter as to temperature much in the way recommended for Primulas, as, unless kept a little warmer than an ordinary greenhouse, they will not grow or flower anything like what they are capable of. Keep a good look-out that there are no aphides upon them, otherwise they get established in quantity on the young advancing bloom-stems without being noticed, in which case they will cause the flowers to come deformed.

Cinerarias.—If a sowing were made sufficiently early, and the plants have been well attended to through the season, they will naturally have come on into flower without anything above the usual greenhouse treatment, to which they should never be subjected, as even a very little heat injures them by destroying the under leaves and drawing the bloom-stems up thin and weakly, which spoils them for the general purposes of decoration, and if the flowers are wanted for cutting makes them comparatively worthless, as they flag directly. Keep the successional later-blooming plants as cool as possible, so that they are out of the reach of frost; by this means they may be had to flower in good condition up to the middle of May, during which period they will be found most useful, as they furnish shades of colour, especially blue, not only beautiful in themselves, but such as much enhance the effect produced by flowers of other colours with which they are associated, either in the conservatory or in a cut state.

Herbaceous Calceolarias. — Plants raised from seed sown last summer, and afterwards potted off singly, should at once be attended to by moving them into larger pots before their roots get at all confined, for if this occurs, the stunting influence will be such that they never afterwards can be induced to grow on freely, or to attain anything like the size and ability to produce such a quantity of flowers as when encouraged by liberal treatment. If, as may be supposed, they are occupying 3-in. pots, a portion may be moved into 4-in. ones or larger, in which they can be allowed to bloom. Those that are intended to have a second shift in addition to the present may be transferred at this time to 6-in. pots. They delight in rich, light soil, such as is composed of two parts good, free, turfy loam, with a third part consisting of equal proportions of leaf-mould and rotten manure, all mixed up with sufficient sand. In potting, avoid the extremes of leaving the soil so very loose as at one time was looked upon as conducive to their well-being, and also the opposite of compressing it in the pots to that degree of solidity necessary with Pelargoniums. The plants should have a light position in a pit or house that can be kept at a temperature of about 40° in the night, with a moister atmosphere than many plants require.

Shrubby Calceolarias intended for flowering in pots should be similarly treated; these do better with potting somewhat harder than the herbaceous species. Both should be from time to time examined to see that they are free from green fly. Where only a few individual plants amongst a number are affected, dipping in Tobacco water will prove an efficient means for the destruction of the insects, or they may be killed by fumigation, but where this is resorted to it will be safer to repeat it slightly several times than to subject the plants to a severe application, as they are much easier injured by Tobacco fumes than many subjects.

Show and Fancy Pelargoniums.—Plants of these that after being cut back were

shaken out and replaced in small pots, if not already transferred to those in which they are to bloom, should be attended to, as with them also any approach to a root-bound condition will stop growth and proportionately weaken their flowering capabilities; good turfy loam, of not too light a nature, well enriched with rotten manure and a little sand added, is necessary to grow these plants satisfactorily, and in potting, the soil can scarcely be made too solid by ramming it tightly in with the potting stick. When it is left too light there is always an inclination to run too much to leaf, with a comparative indisposition to flower. As soon as potted, they should at once be tied into shape, avoiding the over-formality consequent upon the unnatural trellis style of training sometimes resorted to, likewise that which leaves the branches with so little support that the plants cannot be moved when in flower to wherever required without the shoots falling about in a straggling unsightly manner. The fancy sorts, from their more sturdy growth, stand in less need of support, but both kinds should be trained sufficiently open to admit of plenty of light getting to the whole of the leaves, and to preserve a stout, bushy outline, which is their natural habit. Keep them, if possible, within a short distance of the glass in the lightest house available, and be careful for the next two months never to give water until the soil has got drier than it would be advisable to allow it in the case of most plants.

Chrysanthemums.—If cuttings of these are not put in, no time should be now lost. Choose shoots that are stout and strong, and have not be drawn up weakly, for, though the latter will root freely enough, they are a long time before they acquire strength. Do not put them in heat to induce them to root, as this has a direct tendency to cause top growth, which it is most desirable to avoid until roots are formed. They will strike easily, but slower inserted in a mixture of one-half loam and sand, covered with ordinary propagating glasses in a greenhouse temperature kept near the glass. It is advisable to see that they are free from aphides before putting them in. If the plants from which they are taken have been at all affected with these it will be better to dip the cuttings in Tobacco water previous to insertion.

Cool Orchids.—The house devoted to these should now be kept at from 38° to 45° in the night, and 5° or 6° higher by day, according to the weather. The principal plants to be considered in this department are the Odontoglossums and Masdevallias, both of which, but especially the latter, must never be submitted to drying treatment at the roots. The different other cool species that need total rest through the winter, during which time they require to be kept dry, may be treated in this way so far as will not entail much shrivelling, which is not likely to occur, as the atmosphere here will not be nearly so dry as that where more fire heat is used.

Flower Garden.

Now is the time for making new walks, and improving and renovating those already in existence. If the gravel be discoloured or Moss-grown, break it up with forks, and leave it loose until rain has fallen; then rake it over and roll it down, when the walk will look as if fresh gravelled. Walks under the shade of trees and shrubs where there is no Grass to be killed need not be broken up, as a sprinkling of salt will both kill the Moss and give brightness to the gravel; but for use in open spaces salt is not to be commended, as, even with the greatest care, it frequently kills the Grass verges, and after a time it acts as a manure, and increases rather than diminishes weed growth. Levelling turf and relaying it should be forwarded as fast as the weather permits; also all grubbing, trenching, and alteration. The shrubbery borders may now have their annual pointing over, an operation which is necessary, not so much for the benefit of the shrubs as for the removal of weeds and the fixing of blowing leaves. Herbaceous borders are now looking weedy, and where, as is usually the case, such borders contain large clumps of bulbous plants, not much can be done to improve matters till these show themselves above ground, but as soon as they do so, contemplated rearrangement and division of the plants may be proceeded with, and the borders may be manured and dug as deeply as the occupants will permit. If the weather be open and favourable, the sooner all intended planting of Roses is completed the better. Standards and others requiring support should be staked at once, to prevent injury from high winds, and the beds should be mulched as before recommended. Beds of Anemones, Ranunculuses, and choice Hyacinths and Tulips that are peeping above ground will be all the better for a covering of Spruce or Laurel boughs laid thickly over them. Echeverias have suffered severely, and the reserve stock must be looked to, in order to see that no losses occur amongst them. All other bedding plants, more particularly those required in quantity, must be examined, and tender kinds introduced into heat for the production of cuttings. See that roots of Dahlias and Cannas are secure from all danger from frost; the middle of February is sufficiently early to introduce them into heat.

Carnations and Picotees.—Ventilate frames in which these are growing freely, but let no rain fall upon the leaves. Raise the lights by tilting them on blocks, and in fine weather remove them. If there be any traces of aphides on the leaves, fumigate on calm nights until they are destroyed. A pair of sharp-pointed scissors is useful to cut off portions of decayed leaves. Plants in beds must be looked over occasionally, and those not steady in the ground must be made firm by pressing round the base of the plants, and a neat stick should be placed to each in order to prevent any injury from high winds.

Single-flowered Japan Pink (Dianthus Heddewigi) (See next page.)

Dahlias.—The roots of these are sometimes injured by being stored in unsuitable places, such as those that are either close and damp or too dry. It is well, therefore, to examine them carefully. Close, damp sheds with a northern exposure do not answer. If the roots are not keeping well, look over them, remove decayed portions, and place them in boxes in dry mould, removing the boxes to a Vinery, Peach house, or other structure from which frost is excluded.

Hollyhocks.—All decayed leaves and portions of leaves should be removed, and air should be given on all favourable occasions, excluding damp. In foggy or close, wet weather it is best to keep the lights closed; mould soon gathers on decayed portions and must be looked after. Plants in pots in houses from which frost is excluded are not likely to suffer any injury; they must not, however, be allowed to become over-dry at the roots.

Pansies.—Favourable weather should be taken advantage of to pot such plants as are intended for pot culture; 6-in., 7-in., or 8-in. pots answer best, and either one of these sizes may be used, according to convenience. One plant, if large enough, will be sufficient for a pot, but small plants may be utilised by placing two or three in each pot. The soil ought to consist of about four parts turfy loam, one rotten manure, one leaf-mould, and one sharp sand. Press the mould in firmly with the fingers round the roots of the plants, and see that plenty of drainage is placed in the bottom of the pots.

Fruit.

Vines.—In mid-season houses, as soon as the fruit is cut, forthwith prune the Vines and they will go more effectually to rest. Indeed, to do them justice, all Grapes should now be cut and put in bottles of water; they will keep better if cut now than if left on the Vines another month. Any dry room in which a temperature can be kept above 40° is suitable for the purpose, and as much wood as possible, both behind and in front of the bunch, should be cut along with it to act as a deterrent to an overplus of moisture being communicated to the fruit.

Peaches.—Prune the trees in late houses; wash or paint them over, as a preventive against insects, with soap-suds, Tobacco water, and sulphur, made to the consistency of thin paint by adding clay or cow manure to cause adhesiveness. This done, top-dress the borders by removing all the loose, inert top soil, and replacing it with good loam, a little bone-dust, wood-ashes, or pounded charcoal. Peach borders in either early or late houses should never be allowed to get dry, and if the drainage be good and there be a free outlet, there need never be any fear of the borders getting too wet. New borders in course of formation should be completed as soon as possible, as it is quite time the trees were planted if good growth be desired this season. A good Peach-producing soil should consist of loam of medium texture, rather stiff than light, chalk or lime scraps, and charcoal. Manure, if required, is best applied in a liquid state when the trees are in full vigour.

Melons.—For fruit required early in May sow at once, and, in order that they may germinate kindly, they will require a bottom-heat of 80°. The seeds should be put in pairs in 3-in. pots, and when up, the weakest plants should be destroyed. When sown, as is frequently the case, a number of seeds together, the check caused by division is considerable. Grow the plants as near the glass and with as much light as possible.

Vegetables.

Plant Cabbage out according to demand from the store beds of the autumn sowings, and sow a sprinkling of some small early sort in a frame or in a warm border. Examine the stored roots of Carrots, and remove all decaying ones, from which cut away the decaying portion, and use the wholesome part at once. Sow a few Early Horn Carrot seeds on a slight bottom-heat. Sow Cauliflower seeds in frames in a very gentle heat. Freely expose on every favourable opportunity those wintered in frames, and tilt up the sashes at back and front during rainy weather.

Sow Celery seeds in pans of light rich soil in gentle heat. In case of hard frost, protect the Celery in ridges with litter or Fern. Lift the old plantations of Horse Radish, and store the roots in sand in a pit or cellar, but every particle of the roots, small and large, should be removed from the soil. Make fresh plantations in deeply trenched ground. Sow some seeds of the white and green Paris Cos Lettuces in frames, and the Bath Cos in rows where they are to remain. Draw the lights off the frames containing late autumn sowings in favourable weather. If a frame can be spared for the purpose, sow some Tripoli or white silver-skinned Onions for salading, as they will come in six weeks sooner than the main outdoor sowings; and what are not required for this purpose can be transplanted in the open ground.

Peas.—For the first sowing of Peas, the driest portion of ground at command should be selected; the soil may be drawn in ridges about 8 in. high, flat at the top, and 12 in. broad; they should be made by drawing as much of the soil from the whole surface of the bed as will form these ridges at a distance of 3½ ft. apart for such varieties as William the First or Sangster's Number One. Sow on the top of the ridges, covering with about 3 in. of any sandy, open material, such as old potting soil, covered with 1 in. of ashes; or if this be not at hand, the ordinary garden soil, mixed with one-third of its bulk of sifted coal-ashes, is a good substitute. As a precaution against mice, coat the Peas with red lead, or lay under the covering of soil 1 in. of Gorse chopped fine on the top of them. It is advisable to sow thickly at this early season; a quart of early kinds will be found sufficient for a row about 18 yards in length. If the situation be at all exposed, as soon as the Peas appear above ground, take as much more soil from between the rows as will form a ridge on each side of the Peas high enough to break the force of the wind. Do not tread on the land more than can be avoided. Should the ground have been dug early in the autumn, such crops as the above may be put in without trampling upon the soil at all by simply using a few boards about 10 in. or 12 in. wide that will reach across the bed; the little extra labour involved in their use will be amply repaid in the produce.

Broad Beans, where required early, should also now be sown. If the land be at all inclined to be wet, sow on the surface and cover as recommended for Peas, in which way it is evident the seed will be much better able to resist the effects of the excessive moist condition of the soil. In heavy, retentive ground, and in localities where the spring is backward, it is far preferable to defer sowing for at least a month.

Potatoes.—The earliest sorts of Potatoes should now be placed in single layers in shallow boxes, in a place where they will receive sufficient light to cause the sprouts to grow stout and strong. The best varieties for general cultivation are the Ashleaf Kidneys. Of Round Early Frame kinds, Handsworth and Early Oxford are among the best. The boxes in which the tubers are placed should be protected from frost.

Lilium lancifolium.—Some time last year I sent you an account of some Lilies (Lilium lancifolium) which I had grown in a box without disturbing the bulbs. I stated that in the beginning 1878 I planted six bulbs in a box, which was of an oblong shape, being 8 in. wide, 10 in. long, and 14 in. deep, and that these bulbs threw up six stems, bearing altogether 24 flowers, in the autumn of that year. After the stems had died down, the box was placed in the summer-house for the winter. In the spring, when the Lilies had shown themselves well above the soil, the box was put in its place for the summer. The plants were watered with weak guano water up to the time of flowering. This year (1879) thirteen stems were thrown up, producing 87 flowers. The box was put away as before, but in the spring of the present year the bulbs, with the earth disturbed as little as possible, were shifted into a larger box, this one being about 18 in. square by 24 in. deep. Soon after shifting, the bulbs threw up 26 stems, which bore 229 flowers. Two of the stems had 16 flowers on each of them, three had 14, two had 13, two had 12, the rest having from 1 to 11 on the stem, those having only one bloom on being very small. The plants were watered with guano water (½ oz. of guano to a gallon of water) three times a week from the time of their being 6 in. high until they flowered. After the plants have flowered they should not be left to take care of themselves, for while the leaf continues in a healthy state it is elaborating sap for the nourishment of the bulb; and therefore the longer you can keep the leaves healthy, the better will your chance for flowers be the following year. Those readers of GARDENING who had Gladioli in their gardens last summer might have noticed when taking up the bulbs, or corms, that the plants whose leaves had died early in the season—a thing which often happens to Gladioli—had formed very small corms; while those whose leaves had remained healthy until after the flowers were over, produced fine healthy corms of a good size, thus showing that it is the leaves which form the bulbs of plants.—S. D. SAUNDERS.

FLOWER SEEDS FOR THE COMING SPRING.

THE catalogues of some of the large seed houses having just reached us, we have made a selection of plants from those of Messrs. Sutton & Sons and Messrs, Carter & Co., which are worthy the notice of our readers. They may be all raised from seed sown in the open ground in March, and will give a good display during summer.

Cut-flowered Japan Pink (Dianthus laciniatus).

Double Japan Pink (Dianthus diadematus).

Dianthus Heddewigi, D. H. laciniatus, and D. H. diadematus.—These are greatly improved strains of the Japan Pink (Dianthus chinensis), and are among the most attractive of annuals. The flowers are of the richest colours, and of great value for cutting for bouquets or vases. A cultural article on these Pinks was given in GARDENING, Dec. 25 last, p. 511.

New Everlasting (Helichrysum Fireball).—This is a double crimson-flowered kind raised in Messrs. Carter & Co.'s seed grounds. Most of the Helichrysums are but dull in colour, therefore this will be an acquisition. An article on the culture of Everlastings appeared in GARDENING on p. 497, Dec. 18.

Eschscholtzia Mandarin.—An easily-grown annual and one of the most showy. Its flowers are of a rich orange colour inside, the outer petals being brilliant scarlet. When seen in masses this is a remarkably showy plant. Its flowers last for some time in water.

GROWING ARUM LILIES (CALLAS) IN WATER.

SEVERAL remarks lately made in GARDENING remind me of a system which I once adopted of growing this plant as an aquatic in the open air. When well grown, this Arum is a grand plant whether in flower or not, its fine leathery leaves giving it a truly tropical appearance, but as generally grown it gets drawn or leggy, and, except when placed amongst other plants, it is

not always what would be called a good habited plant. It is truly noble when grown in groups or masses, a condition, however, in which it is seldom or never seen. To accomplish this, the following plan may be adopted: This Arum is well known to be half-hardy and semi-aquatic; therefore select some sheltered nook on the lawn for it; if near a shrubbery in a recess, so much the better. Towards the middle of May collect your plants, twelve, twenty, or thirty, as the case may be; go to the brewhouse and procure one of those large, shallow vessels known as coolers. These are either round or oval, and would hold, according to size, from twelve to thirty of the plants. Carry

Crimson Eschscholtzia (E. Mandarin).

the cooler to the spot selected, and place it in such a position as when filled with plants it would appear to the best advantage. When *in situ*, mark out on the Grass the space occupied by the cooler, remove it, and then remove the soil from the inside of the marked space to such a depth that when the vessel is placed in it its rim shall be about 6 in. below the surface; clear all your excavated material away. Group your plants in the cooler as you would arrange a bed of shrubs, the strongest and tallest being in the centre; fill the cooler so that the pots may stand in about half their depths in water. If the cooler should be old and leaky, puddle it outside with clay. Procure some thin strips of wood (stout wire will do as well), and introduce them between the plants tolerably close together, crossing them if necessary; tack down these strips to the edge of the extemporised tank. The plants will now appear to be growing in water through a trellis. Procure a quantity of Moss, in as large pieces as possible; lay this evenly on the wire or strips of wood all over among the plants, bringing it out so that it may appear part of the natural turf. You will now have a group of Arums growing in water, but apparently growing out of the turf, and the proximity of the Moss to the water will keep it always fresh and green. Plants thus treated will present a grandeur rarely seen when grown in the usual way, and it is highly probable that treated in this manner in many localities they would survive the winter. T. W.

CULTURE OF TRITONIA AUREA.

FEW bulbs are more easily managed, or more easily lost by mismanagement, than this. The bulbs should be bought as soon as they can be got, and should be out of the ground as short a time as possible. They may be planted 3 in. or 4 in. deep, in pots or boxes, in any soil, a mixture of sandy peat and light, fibrous loam suiting them best. They may be placed anywhere out of the reach of frost, but the less they grow during winter the better. They must, however, be watered at once, and the soil must never be allowed to get dry. This is the most important point in their treatment. They succeed well as border plants in any soil except clay, but seem to like moist beds of peat soil best; they may be planted out in April or May. I have had the shoots killed to the ground by frost in May without injury to the bulb, though of course the growth was weakened and retarded. Treated as a cold frame bulb, and planted out, they will flower in the south in August, but in the north of England a month later, and in cold places it is better to bring them on for a longer time under glass and plant them out later, or to treat them altogether as greenhouse bulbs, for which they are well suited.

Though tolerably hardy, there are two objections, besides the lateness of their flowering, to leaving them out all winter in the open ground—one, that they are liable to be killed in severe winters unless well protected with litter; the other, that, owing to their habit of straying, in which they much resemble Lilies of the Valley, they are apt to leave the place in which they were planted, and come up where they are not wanted. It is better, therefore, to lift the whole stock in autumn; and as they may, if necessary, be potted many together, and separated when planting-out time comes, this takes little trouble or room. I lift mine about the beginning of November. This must be done carefully; for although the tops are not yet dead, the shoots which form the new bulbs next year are already several inches long, sometimes even more than 1 ft. These shoots are jointed suckers, not unlike those of Couch Grass, and as soon as they have completed their horizontal growth, the nucleus of a new bulb is formed on the last joint. This young bulb then makes roots, and sends a shoot perpendicularly upwards to become the flowering-stalk of next year. I have not ascertained the exact time at which the parent bulb ceases to be necessary or useful to its offspring, but I believe it to be soon after the young shoot appears above ground. The sucker connecting the new bulb with the old gradually dries up into a hard, wiry thread.

When the bulbs are lifted in November for replanting, if sufficient care be taken, the last year's bulbs will be found—to outward appearance, alive and sound, like the old corms of Gladioli—connected with the new bulbs by these threads. If the shoots of the bulb have once been made, and been broken off, or allowed to dry up, no treatment will make it produce another shoot. The old bulbs can readily be distinguished by having no stalks or shoots, and may be pulled off and thrown away. It will be understood after what has been written above that anything like drying off or storing the roots in a dry place is fatal. They had better not be left uncovered for a single day. When the suckers dry up they die, and the bulb, though continuing sound in appearance, dies with them. Care must also be taken in potting to keep the long suckers at the same depth as the bulb, turning them round the inside of the pot, for if the points are brought above ground before they have completed their horizontal growth and commenced the formation of a bulb, the suckers die. When planted they must be carefully and repeatedly watered. The shoots on appearing above ground will probably all be found to touch the edge of the pot; hence, if you can spare say a 4½-in. pot for every two or three bulbs, they are in the most convenient condition for planting out again with a ball of soil when the time comes. C. W. D.

Late-blooming Antirrhinums.—Plants of these hardy biennials in a large bed, cut over in October in order to secure a crop of seed, throw up large numbers of side shoots, and which yielded an abundance of richly-coloured flowers. How useful these are at a time when there is little else in bloom out-of-doors those can best estimate who have to find flowers somehow, and who are only too glad to have any useful plant from which to cut. The plants in question were from seeds sown indoors early in spring, the seedling plants being pricked out into boxes until strong enough to be planted out in rows in the open ground. These dwarf kinds produce a much larger proportion of striped and fancy-coloured flowers than is usually found in the tall strains, and the bed, when in full bloom, was indeed worthy of admiration. What a beautiful mass of bloom may in this way be had at the cost of a few pence for a packet of seed, and if merely wanted for cutting, the plants might be grown in any out-of-the-way place for that purpose.—D.

HOW TO GROW THE HYDRANGEA.

APART from its interest as a pot plant, the Hydrangea has considerable claims upon our attention as a shrubbery-border plant, and seen, as we sometimes find it, in favourable spots upon the sea-coast, it is certainly one of our most effective deciduous shrubs. In Devonshire and Cornwall, South Wales, more especially near Swansea, North Wales, Anglesey, and some other districts, we have frequently met with specimens of the Hydrangea growing in the open ground, huge bushes 6 ft. and 8 ft. in height, and quite as much in diameter, each producing scores, perhaps hundreds, of trusses of its gorgeous flowers, sometimes pink, and in other cases a soft cœrulean blue. Where, indeed, a soil is strongly impregnated with iron, whether it be loam, peat, or sand, you may almost make sure of blue flowers being produced.

Soil.—The Hydrangea is a plant which, to grow it to perfection, does not need a compost, that is, there is nothing gained, but rather the contrary, by compounding a soil for it. I have spoken of loam, peat, and sand; the two former of these will suit the plant perfectly in the simple form, and, indeed, much better than when mixed together. For choice, however, I prefer a nice mellow loam, not too light, and in that, with occasional waterings of liquid manure, the plant will grow in the most perfect manner. The fashionable soil, especially for producing blue flowers, when I practised near London, was the Norwood loam. That was rather strong, and parts of it full of red streaks of iron rust, but when broken down and exposed to the weather for a few weeks it formed a fine potting soil, and one in which the plant delighted.

Propagating.—The Hydrangea may be very readily propagated by cuttings, and those which are taken from near the base form the best plants. My own rule used to be to put the first batch of plants into the forcing-house about Christmas time, and those, if the temperature was growing, gave some nice cuttings before the end of January. These were taken off when not exceeding 1 in. in length, and were put in propagating pots in the usual manner, the only precaution taken being to surround the

Crimson Everlasting (Helichrysum Fireball).

base of the cutting with some sharp sand The temperature of a Cucumber frame is the most suitable for striking this plant, always observing the good old rule never to allow the cuttings to droop until the roots are formed.

Potting and Temperature.—Directly the cuttings are nicely rooted pot them off, using the soil you intend to continue; put them into small pots first, and when those are full of roots remove them to the size in which it is intended that the plant shall bloom. A few of

the strongest may require 6-in. pots, but as a general rule the 4-in. size will be found sufficiently large for the first season. The temperature for the plants must be brisk, moist, and growing, and care should be taken that the plants be kept near the glass, so that they may make thick, sturdy, healthy growth, the stem not being more than a few inches in height, and each leaf nearly as large as your hand. Ripen such a growth thoroughly, get the leading bud nearly as large as the end of your thumb by the time the leaves begin to fall in the autumn, and then you may make sure of a grand panicle of flowers the following season. To effect this kind of growth a frame or pit is most desirable, especially in the early part of the season, and where that cannot be secured put the plants upon a shelf near the glass, and as they are greedy feeders, place each pot in a feeding saucer, so that water may be put in if necessary.

Hardening off and Wintering.—When the growth is made, gradually inure the plants to the open air, so that by the end of May they may be set under a south wall to get thoroughly matured, and then be removed to a more shady situation to pass the season of rest. Keep the plants comparatively dry when the leaves begin to ripen and fall off, but do not attempt to force a premature ripening by withholding water before the plants give indication that the season of maturation has arrived. The best place to winter the plants will be a dry, airy shelf, and but very little water will be necessary. This completes the first season's management.

Second Year's Management.—In the second year, if flowers are wanted early, say in April or May, forcing must commence at the end of December, and be continued in the temperature of the early Vinery until the flowers begin to show colour, when the plants may be removed to a cooler atmosphere. There is no advantage in potting the plants before they bloom, as they seldom make root in the fresh soil; but each pot may have a feeder containing water placed under it, which may be kept filled during the sunny hours of the day, but at night they will be better empty. When the planks break, reduce the side shoots to three or four of the best placed upon each plant, which may be grown on for future blooming, and the others may be used as cuttings. If particularly large individual flowers are required, thin out, directly they are fully recognisable, half the buds upon each truss, of course choosing the weakest and worst placed. The truss of a well-grown Hydrangea should be at the least a foot or more in diameter, and each flower should be nearly as large as a five-shilling piece. Thus grown, the Hydrangea, whether blue or pink, is a very imposing object, and will remain in perfection in the conservatory for two months.

Treatment after Flowering.—Directly the bloom becomes faded cut the branch away to the secondary shoots, which are to form the blooming shoots for the following season. These must receive all the encouragement that can be given them, and for that purpose it will be necessary to shift the strongest plants into 8-in. pots and the others into pots one size smaller. Use the same kind of soil, and, at the time of shifting, remove the crocks, and at the same time, with a pointed stick, loosen the matted roots around the ball, so as to induce them to root into the fresh soil. Of course, after this shifting, the plants will require to be kept close and shaded until they make fresh roots, and then they must receive just the same encouragement they did in the first season. These plants, if properly grown and ripened, will in the following season produce three or four fine trusses each, and then form very handsome subjects for vases. If it is desired to grow the plants a third year, the same process as to disbudding must be followed, and then a dozen shoots to each plant may be encouraged. I generally, after the second season's blooming, put the plants in the open ground, mixing them in the borders with the American plants, where, in August and September, they form very effective objects.

In Beds and on Lawns.—For early beds in the dressed flower garden the Hydrangea is very desirable. Plants started in January come into flower in April, and form very nice groups through May and June. For single specimens upon the lawn, in places where the wood ripens properly, the Hydrangea forms a very fine object; where it does not ripen, large specimens should be grown in pots or boxes, and be set out upon the terraces in the summer season. They form capital companion plants to the scarlet Pelargoniums. When grown in permanent beds, the soil should be porous and well drained, and should be raised well above the general level of the surrounding soil. Hydrangea hortensis and its variety with the variegated foliage are the kinds most generally grown, the latter especially for its foliage. A few plants of H. japonica may also be cultivated, but they are not so effective as the older species. Those who require blue flowers speedily may crush some alum into fine powder and put a pinch occasionally upon the surface of the soil. This will give blue flowers, but it will be at the expense of the health of the plant, which must be thrown away when it has done blooming.

W. A.

TRAINING APPLE TREES.

YOUR clear illustration of improved espalier fruit tree training on a 10-ft. trellis for cordon Apple trees, given in GARDENING, Dec. 4, affords me an excellent hint, in the direction to which I have recently turned my thoughts. At Bangalore the patient and skilful gardeners grow fairly good Apples all the year round, but about this time, or a little later on, they produce well-flavoured fruit of such size and shape that would not discredit a country show here. But then they ask and get Christmas prices, say 10s. to 15s. a dozen, and occasionally more. They grow them on upright scanty bushes, about 6 ft. high (whose very shape suggests the espalier treatment), for the convenience of picking and pruning. They protect the growing fruit very carefully, tying them up to ease the weight, so that when ripe an Apple often appears rosy red, and variegated with three or four yellow stripes where the sun has been excluded by the slings. They pinch, train, and root prune with much skill, and my object is to aid in promoting a more extended culture in the direction of greater variety, finer fruit, and, what is a great matter (and a natural sequence), reduced price. When reading the article on American Apples in the *Daily Telegraph* of December 3 my ideas at once went back to the Lal Bagh and the Apple gardeners of Bangalore, and by the last mail I sent to Mr. J. Cameron, the superintendent of the Government Gardens, your issue of December 4, with some notes on the subject, adding that I had no doubt that the upright espalier trellis would at once find acceptance with the native gardeners, who are so ready to adopt any plan that commends itself to their keen judgment and skilful industry, as, in point of fact, it would be only gently leading them on in their present mode of culture. I saw Colonel Johnson at the club on Saturday, and told him of this. He has now, as secretary to the Local Government in Mysore, in the Department of Public Works, charge of the Lal Bagh, and we talked over the subject *con amore*, for he is well known as an amateur gardener and grower of fine Roses. He returns there by the next mail, and promised to see that the plan is fairly tried, and will aid the superintendent in what he, I am sure, will also enter into *con amore*. The sketch at page 471 and the details at page 473 are all that is necessary to enable a fair trial to be made, from which I expect excellent results. In the meantime perhaps you or some of your numerous readers might be tempted to give me a list of American varieties from a kindred climate that would succeed in our fine climate of Bangalore, where the mean temperature in shade is 75° for the year, the maximum 93°, and the minimum 57°, over a series of ten years, and where, with "shelter without shade," Mr. D. T. Fish's excellent motto for the Rose grower, in which, from long experience, I most thoroughly concur, and judicious irrigation, almost anything will grow. Bangalore, the garden of South India, is on a plateau of 3000 ft. above the sea, with a sub-tropical climate, and possesses peculiar advantages in having a semi-Alpine climate close at hand (20 hours by rail), at Coonoor and Ootakamund, 6000 ft. and 7000 ft. respectively, where hedges of Fuchsias, and Geraniums, and tree Rhododendrons, &c., are common. An intermediate climate on the little plateau of Nandidroog, 4800 ft. above the sea, close at hand for seed renewals and so forth, and Madras, where the foliage plants, particularly the Acalyphas, Crotons, &c., are magnificent, within 12 hours. As the Orientals say, "What more can I say?"

J. P.

OLD SEEDS.

LAST autumn a friend of mine gave me some seeds of flowers, which he had had since 1874. He said that I might as well give them a trial, although he did not think they would come up very freely. The seeds were sown either in pots in a cold frame or in slight heat. Those seeds which have an asterisk against them were sown in heat. The following is the result of my trial:—

Seed of 1874.

Name of Plant.	When sown.	Came up.	Flowered.
Dickson's Golden Gem Pansy	April 7.	—	—
Viola Admiration	April 7.	—	—
Viola striata	April 7.	—	—
* Balsam	April 9.	April 19.	July 22.
* French Marigold	April 9.	April 17.	June 29.
* Mimulus	April 9.	April 19.	June 20.
Mimulus	April 9. (In one of Looker's patent boxes in a cold frame.)	April 22.	June 16.
* Clematis lanuginosa	April 9.	—	—

It will thus be seen that the Viola and Clematis seed did not germinate, although the greater part of the seed of the Violas was sowed in boxes in a cold frame; still, a small amount was placed in heat, but with the same result. The Balsams did very well, while the Mimulus were first class. The Marigolds did not flower so freely as I have seen them when grown from seed not so old.

I have kept an account also of the time of planting some Gladioli, and of some seed which I bought last year. The following is the result:—

Name.	When sown or planted.	Came up.	Flowered.
Light Gladioli	March 26.	May 3.	August 22.
Light red Gladioli	March 26.	May 15.	August 28.
Gladioli gandavensis	March 31.	May 8.	August 27.
Phlox Drummondi	April 12.	April 24.	July 15.
Linum grandiflorum	April 13.	May 4.	July 8.
Nemophila insignis	April 13.	Apri 23.	June 18.
Minor Convolvuli	April 13.	April 22.	July 3.
Major Convolvuli	April 19.	May 26.	August 25
* African Marigold	April 22.	April 25.	August 22.
Candytuft	May 1.	May 16.	July 6.
Mignonette	May 1.	May 16.	July 8.

Of course these results might have been influenced by weather or locality; still, to those of your readers who wish to have flowers in bloom at a particular time the above notes may be useful. I will add that, with exception of those sown in heat, all the plants were raised in a cold frame and planted out when large enough. Those in heat were removed to the cold frame when they had four leaves, exclusive of the seed leaves, and after having been gradually hardened were planted out.

S. D. SAUNDERS.

ANSWERS TO QUERIES.

3965.—Maggot on Cabbage.—If the soil will bear it, trench it up 2 ft. deep, burying the exhausted soil in the bottom of the trench. Leave the surface rough through the winter, and in February give a dressing of manure, and, in addition, about a bushel of soot and lime per rod would be very beneficial, and if the soil is of a porous nature 20 pounds of salt per rod might be added with advantage, forking it in and well working the land when the surface is dry to obtain a fine tilth before cropping.—E. H.

3967.—Weeds on Lawns.—Something depends upon what kinds of weeds are mixed with the Grasses in the lawns. If they are Plantains or others difficult to eradicate, it will be cheaper to dig up clean and re-sow Grass seeds of good quality from a first-class house. There is not much chance of getting rid of weeds by simply raking with an iron rake, but if the weeds are of ordinary kinds, such as Chickweed, Groundsel, Shepherd's Purse, &c., then raking and hand weeding together may be trusted to keep them under till, by top-dressing and sow-

ing new Grass and Clover seeds in spring, a good growth could be obtained to smother the weeds. Sow plenty of Grass seeds, covering them with the top-dressing.—E. H.

3973.—**White Worms in Soil.**—The best thing to do with the Maiden-hair Fern will be to turn the plant out of the pot, shake away the loose soil, and then with a pail of chilled water wash the roots of the plant, cleansing it thoroughly. Then, when the water has drained away, re-pot in a clean pot, well drained, using sweet fibrous peat and silver sand. A bit or two of rough loam or a handful of finely-broken charcoal will be no disadvantage. Do not give much water till the new growth breaks away.—E. H.

3969.—**Cropping a Garden.**—Unless the Potatoes are of the very short-topped kinds, 2 ft. will be too close. Better plant at least 3 ft. apart if Brussels Sprouts are planted between the rows, as there is nothing gained by overcrowding; rather the reverse. Fifty pounds in weight of guano may be profitably used on fifteen rods of land; better use it as a top-dressing after the Potatoes are up in spring and hoe it in. Soot, also, will be beneficial used in the same manner. Brine from a bacon-curer's will be a good application to porous soil, but should be largely diluted with water. Apply it in spring just before cropping.—E. H.

3961.—**Scale on Vines.**—Add a wine-glassful of paraffin oil to a gallon of liquid in which 6 oz. of Gishurst Compound has been dissolved. Take some pains to mix it thoroughly; then add as much clay, lime, and soot as will bring the mixture to the consistency of paint. Apply it cool with a painter's brush, rubbing it well into the cracks. Of paraffin alone two tablespoonfuls to a pint of water applied with a sponge will kill scale on Vines. Some pains must be taken in mixing.—E.

3974. — **Rhododendrons.** — Rhododendrons: Early-flowering varieties—Sir W. Scott, Albertus, Altaclarense, Jacksoni, Mars, Florence Nightingale, Blandyanum, Beauty of Surrey, Delicatissimum, Faust, Lady Gordon, Iago, Ne Plus Ultra, Pictum, Ingrami, Ornatum, Sir C. Napier. Late varieties—Candidissimum maculatum nigrum superbum, Vandyck, Mr. John Waterer, Mrs. John Waterer, Mrs. Standish, Star of England, Standish's Perfection. If commoner kinds are required plant the varieties of ponticum. Though Rhododendrons grow best in deep peaty or alluvial soil, yet they may be planted in almost any soil that is deep and rich, and free from lime, and not too much exposed to cutting winds.—E. H.

3981.—**Hastening the Decomposition of Manure.**—We can advise no better method of hastening the decomposition of stable manure than is adopted in the making up of a hotbed. Shake it well up, moisten it well, and turn it often. In this way none of the ammoniacal properties of the manure are lost, nor is any driven out by fermentation or dry heating. A regular turning of a heap every two days for a fortnight, and water added often enough to keep down fermentation, causes every portion of the manure to become equally nutritive and in the best possible condition for application. There is waste when manure is applied in a complete state of decomposition, because that process is brought about by fermentation, and that means evaporation of the manurial gases. It is worse than waste; it is almost useless to apply the manure when it has heated itself, fire gauged or hot dry. Without fermentation and in a raw fresh state is, if less wasteful, at least not so readily assimilated as when it is prepared by frequent turning.

3983.—**Best Show Chrysanthemums.**—In giving the names of twelve show Chrysanthemums the querist does not specify whether they are to be solely incurved kinds, or solely Japanese, or a mixture of both. As, however, the term "show" is most commonly given to the large incurved kinds, we give the following selection as a good one: Beethoven, Empress of India, Dr. Sharpe, Golden Beverley, Jardin des Plantes, Prince Alfred, Prince of Wales, Venus, Hero of Stoke Newington, Alfred Salter, Barbara, and White Venus. These make a fine dozen to furnish cut flowers. If wanted for plants, Mrs. Haliburton, Lady Hardinge, Mrs. G. Rundle, Mr G. Glenny, and General Bainbrigge may be substituted for some of the others. Twelve good Japanese kinds to furnish cut show blooms are, Elaine, Fair Maid of Guernsey, Peter the Great, Fulton, Fulgore, Bouquet Fait, James Salter, Baronne de Prailly, Meg Merriles, Triomphe du Nord, Soleil Levant, and Cri Kang.—A. D.

3962.—**New Potatoes.**—It is difficult to give a complete list of all the new Potatoes that came out in 1880, because the knowledge of some does not get far beyond the lists in which their names appear, therefore we can but name those well known. Matchless is a new American, skin pink, tubers flattish, handsome, and smooth, quality medium, and haulm spreading and robust. Pride of America is very like Snowflake all round, but gives generally handsome tubers. St. Patrick a sort very like Magnum Bonum, but the tubers have deeper eyes. Reading Abbey, tubers much like those of Victoria, and similar quality, haulm very tall and robust. Heather Bell, kidney-shaped tubers, white skin mottled with purple, good quality, haulm very spreading and robust. Ice Cream, long white kidney of good quality, haulm medium height. Avalanche, handsome white kidney of high quality, robust haulm. Holborn Favourite, a pretty pink-skinned oval-round, of good quality and has a robust top; and Beauty of Kent, a bright red round, of excellent quality and having a moderately robust haulm. These are all the kinds we can at present call to mind as sent out during the past year.

3972.—**Pruning Clematis.**—The pruning of the Clematis is guided by the section to which the variety to be pruned may belong to. Thus all the spring-blooming kinds flower from the previous year's wood, and therefore in good pruning the strongest growths of the preceding year must be retained and the rest taken out. Still, it would be well with these to shorten back each shoot moderately, as the extreme growth is rarely firm and ripe. In performing this pruning and thinning it is well to unnail the entire plant, and then renail only that to be retained. The autumn-blooming kinds, viz., those that bloom from July onwards, all flower from wood of the present year's growth, and this should be cut back quite hard without compunction, say to within 2 ft. of the ground, every winter. Then new and very strong growth, producing the finest flowers, comes up in the spring and bears bloom profusely in the autumn. Your plant would seem to have got into an overgrown state that renders it difficult to deal with, and it would seem you can do nothing better than thin out carefully, and to the best of your judgment.—A. D.

3975.—**Pancratium carribbæum.**—The Pancratium carribbæum is a stove bulb, somewhat similar in constitution and habit to the Eucharis amazonica. It requires a time of growth with plenty of moisture, then a time of rest with less water, but should never be altogether dried off. The soil should be rich and fibrous in character, and the pots well drained. Most of the failures in bulb culture arise from a mistaken notion that bulbs do not require light and sunshine.—E.

3971.—**Melons and Figs.**—Both Melons and Figs may be grown in pots in the same house with care. Start the Figs first, and when they have made some progress, so as to require a night temperature of 55° or so, introduce the Melons. The latter should, if possible, have a little bottom heat. Could the pots be arranged over the pipes in some way? The Melons of course must be trained near the glass, say within 16 in. If they are trained thinly the Figs may stand under them. Great care must be used in regulating the ventilation and moisture; if the red spider once gets a footing in the house all will be ruined.—E. H.

3960.—**India-rubber Plants.**—India-rubber plants are very suitable for room decoration, but at this season of the year they must have all the light possible, and not be over-watered. It should be borne in mind that no plants—not even the most long suffering—will continue in health in a room where much gas is burned. Place the plant in the lightest position of the room during the day, and move it at night if possible to a room where no gas is burned. In cold frosty weather move it from the window at night.—E. H.

3977.—**Newly Planted Roses.** — If deficient in root and fibre, your Roses could hardly be expected to show much growth or bloom the first season after planting; and if by being "well fed" you refer to repeated applications of liquid manure, matters would be made worse, as this should be given to none but well established plants. In planting Roses from the nursery, first reduce any long naked roots, and cut back those that are bruised to the first fibres above the injured part. Have ready a compost consisting of two parts turfy loam, and one part each of well decomposed manure and sharp drift sand well mixed, and place a spadeful around the roots of each plant. Fill in and tread down firmly. This treatment induces the formation of fibres, and applies both to standard and self-rooted Roses. As regards the pruning, you are quite right. Whether the plant be a moderate or vigorous grower, if deficient in fibrous roots the head should be correspondingly reduced, and thus (to use a homely phrase) "fit the burden to the back.'—J. MARTIN.

3968.—**Pruning Banksian Roses.**—Banksian Roses flower on the late summer shoots; never on strongly grown ones. They should be pruned once a year in July, and not touched in the spring.

3966.—**Lime, Soot, and Salt for the Kitchen Garden.**—Lime and soot may be used in this case with great advantage. About one bushel of each will be a good dressing per rod. Less, of course, will have a correspondingly good effect.—H

3970.—**Summer Snowflake** (Leucojum æstivum).—Sow the seeds in spring in a pan or pans, and place in gentle heat till they germinate. Afterwards cool down and harden off. The second season, or when they require more space, prepare a nursery bed in the open air, and plant them out thickly to get strong. Afterwards they may be planted wherever required.—E.

3974.—**Best Rhododendrons.**—Two years ago I planted a circular bed with the following, supposed to be some of the best sorts: *Centre*—Lady Dorothy Neville. *First Circle*—Concessum, Leopardi, limbatum, The Queen. *Outer Circle*—Warrior, Prince Albert, Stella, Sir Isaac Newton, Purity, cruenta, Bylsianum, John Waterer, and Nero. They are planted in about 2 ft. of peat.—G. H. A.

3878.—**Camellias from Cuttings.**—I have succeeded by taking eyes and striking as one would Grape Vines. Place in well-drained pans, with peat and silver sand in a moderately warm house, with a bell-glass over. I often plant an eye when I cut a blossom.—G. H. A.

3983.—**Show Chrysanthemums.**—I think "W. J." will be satisfied with the following show Chrysanthemums: Empress of India, Mrs. George Rundle, White Venus, Mrs. Dixon, aurea multiflora, Geo. Glenny, Progne, Gloria Mundi, Mrs. Heale, Dr. Sharpe; and in the Japanese varieties Elaine and The Sultan.

4008.—**Soot Water for Plants.**—Will the settling or dregs of a rain-water tub serve as soot water for Rose trees or other plants? and will it do any harm given black as it comes from the tub, which has not been cleaned out for some time, with a little warm soft water added? What is the object of clearing soot water?—DIDO. [It may be given to Roses or other plants as it is, but the sediment on the surface of the soil must be stirred up occasionally, or it will cake and keep the air out of the soil.]

4009.—**Temperature for Camellias.**—Is a temperature of 50° hurtful to Camellias at this time of year? and what kind of manure water is best for them now that they are in bud? Also, will it harm them to shift them from a dirty pot to a clean one the same size?—DIDO. [The temperature is plenty high enough; do not exceed it. Also syringe the plants occasionally in the mornings when air is given. We would not repot them till they have done blooming, or they may cast their buds. Clear soot water, or a slight top-dressing of Standen's manure will be beneficial and safe.]

4010.—**Planting Out Ferns.**—I have a lot of Ferns in my greenhouse in pots, but as my spare time is limited I cannot always water them when they require it, and they get dry sometimes. I am thinking of planting them in a 2-ft. border in my greenhouse, but as the hot-water pipes run round the house I fear it would be too warm for them. I have also thought of plunging them in ashes, so that I could lift any of them for the house when required. Do you think the position would be too warm? they would be about a foot from the pipes.—DIDO. [If you put some slates or tiles against the pipes to keep the heat from the plants they will do very well, provided they are kept well supplied with water.]

4011.—**Geraniums for Winter Blooming.**—How can I manage Geraniums for full winter blooming, such as Vesuvius, Lord Derby, Wonderful, Madame Baltet, &c., and any other equally floriferous kinds? I want large plants covered with flowers.—ENFIELD. [If in spring you have some well-established plants, pot them on as required till they have reached the sized pot you wish them to flower in. Keep them in a warm, airy greenhouse, well exposed to light and sun, and keep all flower-buds pinched off; also stop the points of the shoots occasionally, to keep the plants dwarf. In June, place them in the open air in a sunny position, and give them just enough water to keep them growing. In September remove them to a greenhouse, where they can get plenty of air and a dry temperature of 50° to 60°. After this time all pinching and picking off flower-buds should cease. The soil should consist of good fibrous loam and sand. When in flower a little weak guano water may be given with advantage.]

4012.—**Violets.**—*Beech Park.*—A top-dressing of decayed manure will benefit them.

4013.—**Pelargoniums Blighted.**—*G. J. H.*—Keep them dry through the winter, and in spring cut them back close to the pot, and they will probably make healthy shoots.

4014.—**Transplanting the Glory Pea.**—*J. R. M.*—April or May will be the best time.

4015.—**Maiden-hair Ferns Eaten.**—*G. H. M.*—Search carefully by candle-light; there are slugs or snails somewhere about the plants.

4016.—**Pruning Currants and Gooseberries.**—*J. H. M.*—These may be pruned at any time during the next two months.

4017.—**Pruning Gooseberry and Currant Trees.**—I planted in November last Gooseberries (Crown Bobs) four years old. They have five, six, and seven upright branches, plenty of buds, and no shoots on them. Should these be pruned back? if so, when and how far? How many buds should I leave on each upright branch? The branches are about 2 ft. long. Also Currants (White Grape), with four or five branches, 12 in. to 14 in. long. When should I prune them back, and to how many buds? —NOVICE No. 1. [We would prune them back to about half their length, in order to get them furnished at the bottom.]

4018.—**Algerian Daisy.**—*Beech Park.*—Plant it out-of-doors or put it in a cold frame. The room is not airy enough for it.

4019.—**Sparmannia africana.**—Can you tell me how to propagate Sparmannia africana? I have a large plant about 5 feet high, and should like to have some smaller ones.—H. E. H. [Put in cuttings of the young shoots in sandy soil, in a warm house or frame, in March or April.]

4020.—**Abutilons.**—How should the Abutilon be treated? Mine has grown about three feet high, but has only leaves at the tips of the branches. It is in a 5-in. pot. How is it propagated?—H. E. H. [Cut it back in spring, and put in the tops of the shoots as cuttings, in heat.]

4021.—**Character of Chrysanthemums.**—*A. R.*—We cannot find room to describe Chrysanthemums. Get a descriptive catalogue from some good nurseryman.

4022.—**Edelweiss.**—*Thos. E. M.*—Pot it in sandy soil, to which may be added a handful of potsherds broken to the size of horse beans. Keep it in a cool, place, and water when necessary.

4023.—**Nicotiana longiflora.**—I purchased two small plants of this from Gibbs & Co., but the foliage as fast as it is produced withers off from the top of the leaf. Will any one kindly tell me the soil that suits them, and how they are to be treated as regards heat? I would say that I have a greenhouse heated with a brick flue and the temperature is about 46° to 48° in frosty weather.—AN OLD SALT.

4024.—**Sowing Tulip Seed.**—I have purchased some Tulip seed. What would be the best time for sowing it? also the kind of soil it would grow best in?—CONSTANT READER.

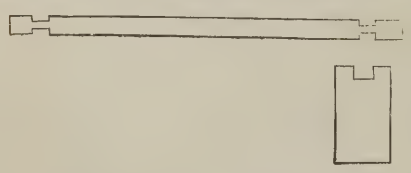
4025.—**Plants for Shady Border.**—I have a garden border which is totally shaded from the sun, and is also rather damp. Will any reader kindly give me the names of some plants that will grow in such a border?—FLEUR.

4026.—**Preserving the Pampas Grass.**—Can any one tell me how to preserve the plumes of the Pampas Grass in their natural state? I have often tried, but have always failed.—J. C.

BEES.

EXPERIENCE IN BEE KEEPING.

Bar-frame Hives.—In making bar-frame hives the first consideration is the size of frame to adopt, then make a pattern of it for future guidance, as it is of great importance that all hives, frames, &c., should be of the same dimensions, so as to be interchangeable. The "Standard" frame, 17 in. by 10½ in., is a great favourite with many, but I find it too large for this locality. With a large frame you sometimes have a difficulty in abstracting honey without disturbing the brood nest, and with them you cannot very well make a small hive; whilst on the other hand, with smaller frames, you can build up hives to any size you like. For these reasons I fixed upon the Woodbury size, which is in general use, as the one best



adapted for my purposes. The first frames I made were exactly similar to those recommended to cottagers by the British Bee-keepers Association in their "Handbook of Modern Bee-keeping," published last year; but finding, as I have stated before, a great waste of heat round the end of the frames, I discarded them, and now use a frame made of three pieces of wood, the top bar of ½-in. wood, 7-8 in. wide and 15½ in. long; at ⅞ in. from each end a slot is cut out on each side ¼ in. square, and a groove cut 1-16 in. deep along the centre of the underside for fixing in guide comb; the two other pieces are of 3-8 in. wood, 1½ in. wide and 9 in. deep; at one end of each a slot is cut out of the centre ½ in. square, then you will find the top bar fits into firmly. No nails are required, and they will thus be found handy for taking to pieces for cleaning or storing; if preferred nailed, French nails or shoemakers' rivets are the best to use, one at each end sufficient. I do not use a bottom piece to the frame; it is only useful in transferring comb, &c., which will soon become a thing of the past when the wooden comb foundation is brought within the reach of all. If a bottom bar is preferred it should be of ¼-in. wood, ½ in. or ⅝ in. wide, nailed inside the end pieces at ¼ in. from the bottom. These should all be cut out by a circular saw to obtain uniformity of size, but if this is not obtainable and time not very precious, they can easily be cut by hand, but as I can purchase them at 1s. 6d. per dozen I prefer doing so. Now there are so many different ways of making the hives to fit the above frames, the simplest one I have used, in which a late swarm has done well, consisted of nine frames placed side by side, a board back and front, with an entrance hole cut in the latter, a piece of strong calico over the top, he whole pasted over with brown paper; of course for wintering I remove the paper from the top and substitute some warm porous material; old bags will do. This hive will require an outside cover. I have made a combination hive, such as is sold for £2 or £3, out of an American bacon box costing 1s. with the aid of a few feet of ½-in. boards, that would hold two stocks with twenty frames in each. This is done by simply nailing two 8½-in. boards along the middle for the ends of frames to rest on; a 2-in. plinth nailed along the top of them to cover the ends of the top bars; the frames will give the distance the boards should be apart; the ends of frames fitting easy inside the plinth, and the bottom of end pieces of frames resting on bottom of box; an entrance is made at each end 5 in. by ¼ in. full, with an alighting board (perforated zinc makes a good one). A division is placed in the middle the same height as the plinths, so as to make two hives; these are fitted with frames and a dummy board, and when filled with comb, thirty-two super boxes are piled above each; or if a slinger is used another height of frames is added. The only objections to this plan is you cannot well disturb one stock without the other, and it is much more convenient to have each hive separate and easily removable. Intending bee keepers should send 6d. to Abbott Brothers, Fairlawn, Southall, for one of their catalogues and the Crystal Palace leaflets, which give the best information on all matters of bee keeping. —BAR FRAME.

POULTRY.

BRAHMA FOWLS.

VERY little is known of the history of the Brahma fowl. In 1857 Martin Doyle, writing of them, says, "They are yet too scarce to have entered into our private possession, and as to tasting their flesh—an experiment which we long to make—such an extravagance has not yet been committed in this country." Now they take precedence of all other fowls at shows, they are running in almost every poultry yard, and they are to be seen in every poulterer's shop.

Mr. Wright, who has taken great pains to ascertain among much conflicting discussion the true story of their introduction into America, from whence they came to this country, says that in 1840 some Indian sailors brought from Luckipoor, a port on the Brahmapootra river, three of these birds to New York. They were purchased by a Mr. Chamberlain, of Connecticut, and chickens descended from these birds were first exhibited in 1850. Mr. Wright maintains that they are a distinct species, and not, as some suppose, an improved variety of the Cochin. He points out the important fact that while the crop of the Cochin is above the normal position, that of the Brahma is below it. Another point of difference is, that the Brahma chickens closely resemble their parents in plumage, while it is extremely difficult to breed Cochins true to colour.

There are two varieties, the light and the dark Brahma, but their carriage, shape, and style are precisely similar, the difference alone being in the colour of the plumage. The hen should be very small and short, but broad over the eyes, causing the sort of frowning brow so often seen in well-bred Brahma pullets. It is not so noticeable in the cock, but is to be seen if looked for.

The comb should be what is called a pea-comb. It is divided into three ridges, the middle ridge being slightly higher than the two outside ones, the whole not exceeding ½ in. in height. Single combs were originally common in this breed, but the pea-comb is now necessary for exhibition.

The beak should be very short, strong at the base, and slightly curved.

The tail short and upright, the two highest feathers coming outwards away from one another. The wings should be small, and the points well tucked under the tail hackles. Cockerels that get driven about the run by older birds often contract a habit of turning the outside feathers of the wing the wrong way. This should be attended to, and some mechanical contrivance used to keep them flat. The back should be wide, and very flat.

The legs a rich orange colour, covered down to the points of the third and fourth toes with soft curling feathers. Straight stiff feathers on the joint constitute what is called a "vulture hock," and is a great defect. The birds should carry themselves in a very proud and stately fashion, according well with their great size and weight.

In light Brahmas both cock and hen should have a pure white head; the hackles of the neck white, striped very clearly with black down the centre. The breast, underpart, and downy feathers white; the wings appearing white when closed; but the inner web, only seen when the wing is open, should be black; the tail rich glossy black with green reflections.

In the dark Brahmas the head should also be white, and the hackle feathers white with the black stripe, but the back and breast, the tail coverts, and tail should be black, also the leg feathers; these latter may be black and white. The top edge of the wing should be black, the lower part white.

The hens of dark Brahmas should be a steely grey, showing white only on the hackle feathers. The light Brahmas are the more ornamental, but it should be borne in mind that a light-coloured fowl is usually more delicate than a dark one.

Brahma chicks are extremely ugly up to about four months. They are long in feathering, and their long legs seem out of proportion, but the worst-looking chicks often turn out the best birds. They require a great deal of Grass; it should be cut up small, and mixed with their soft food to ensure their eating sufficient, if they have not a Grass run.

In setting Brahma eggs great care should be taken in preparing the nest. It needs to be made much damper than that for other fowls. It is a good plan to put a deep layer of cut Grass at the bottom, then some Cocoa-nut fibre, and on the top dry Fern leaves. Insects dislike Bracken Fern, and it makes in all cases very good nests. If the weather is very dry just as the chickens are due, pour about a pint of warm water round the nests on the nineteenth day. Many Brahma chicks are lost, because the shells being so thick, the sticky substance inside gets hardened to the consistence of glue before the little creature can get out. Only moisture will prevent this. M. A.

Brahma Fowls.—I have a dark Brahma cock that has several black feathers in his tail that are mixed with white. I should be glad to know whether or not such a bird would produce good chickens, and if so, would he be best for breeding pullets or cockerels?—NOVICE.

THE HOUSEHOLD.

How to Cook Haricot Beans.—Some weeks since a correspondent asked if any reader could give the French way of cooking these Beans. I have been waiting for this answer, and now repeat it, as I am very fond of this highly nutritious vegetable, and should be glad of any improvement on the following simple way of cooking them. We soak them over night in cold water; in the morning we wash them, and put them on the fire in cold water with a large lump of salt. When they boil up, we draw the saucepan off the fire, and let them simmer gently for about 2 hours or a little more, until they commence to crack, strain them off, and work in a piece of butter about the size of a Walnut or larger, and some fresh Parsley chopped very fine. Those who like the flavour may add a sprig or two of Mint whilst boiling.—FERNDALE.

SECOND VOLUME OF GARDENING.—Our second volume will be completed at the end of February, and an index and frontispiece will be issued shortly afterwards.

GARDENING ILLUSTRATED.

VOL. II.—No. 97. *SATURDAY, JANUARY* 15, 1881. PRICE ONE PENNY. REGISTERED FOR TRANSMISSION ABROAD.

INDOOR PLANT CASES.

THERE are few domestic occupations for the leisure hour more deserving of encouragement than the cultivation of plants in the dwelling house. The Wardian Case has long since become a common article of furniture, and it may safely be asserted that as much real pleasure and instruction are often afforded by these miniature greenhouses as by vastly more ambitious structures. The number of plants which may be satisfactorily grown in an ordinary closed case is far from small; but the enthusiast will certainly wish to add to his collection some of the very beautiful forms of vegetable life to be found among the tropical Ferns, Orchids, and so-called fine-foliaged plants. The gratification of this desire will render it necessary that some arrangement be provided for warming the little greenhouse and transforming it into a small stove or hothouse. Hitherto heated plant-cases have not been largely made and sold, though various forms have been from time to time devised; but there can be no question that their use will be much extended as the advantages they offer in the cultivation even of such plants as are now grown in the ordinary Wardian Case become more appreciated. At the present time the choice of ready-made plant-cases with heating apparatus is limited, and the critical in such matters will probably prefer to construct their own in order to consult their individual tastes on various points of detail. It is with a view of assisting those who have reached this conclusion that the following description has been written. The arrangement set forth has been practically tested by the writer with most satisfactory results, and a strict adherence to the dimensions given may, on this ground, be recommended, but it will be obvious that in these and many other particulars deviations may be made to suit individual circumstances without necessarily impairing in any way the efficiency of the whole. Fig. 2 (A) represents a rectangular box, 3 ft. 5 in. in length, 2 ft. in breadth, and 2 ft. 5 in. in depth—all external dimensions. This box, which should be of 1-in. well-seasoned deal, strongly dove-tailed together, is provided with a false bottom (*b*) securely fixed, so that its upper surface is 9½ in. from the top of the box. In what may be termed the front of the box two doorways are cut, as shown in the figure, each 15½ in. high and 12½ in. wide. The doors for these openings are provided with two projecting studs fitting into corresponding depressions where hinges would ordinarily be placed; the reason for which arrangement will presently be obvious. Between the true and false bottoms of the box two partitions

HEATED PLANT CASE. (Open).

(*c c*) are fixed, as shown by the dotted lines, at 12 in. and 13½ in. respectively from the front and left-hand (as the reader looks at the figure) end of the box, thus forming a chamber of these dimensions as to depth and breadth, and of 17 in. in height. This chamber is for the reception of the heating apparatus, and it is essential that air-communication between it and the rest of the box be entirely prevented by caulking all the joints and angles with a mixture of red and white lead with linseed oil, and by screwing over them slips of wood with the interposition of felt smeared with the same compound. Two holes (*d d*), 2½ in. in diameter, are bored through the left hand end of the box at the top and bottom of the apparatus chamber, so as to provide for the ingress and egress of air to and from the source of heat. At the opposite end of the box a circular orifice 9 in. in diameter is cut, equidistant from the sides and bottoms, and is provided with a circular zinc ventilator of the ordinary form, having a button in the centre, by means of which the openings in the outer plate may be wholly or partially covered by the under plate. A number of 1½-in. holes are bored through the false bottom, say 2 in. apart, omitting that portion which forms the roof of the heating apparatus chamber. At a distance of ½ in. from the front, back, and sides of the box, a continuous strip of wood, ½ in. in thickness, is screwed to the upper surface of the false bottom, with the interposition of stout flannel or felt smeared with the red and white lead mixture, so as to form a water-tight channel or gutter (*f*); and in this channel two holes are bored through the false bottom, into which pieces of ⅜-in. composition tubing (*g g*) are fitted, so as to convey any water from the channel into a pan to be placed in that portion of the box communicated with by the right-hand door. These holes may be at the back and front of the box and midway between the ends, and the composition pipes may be bent as shown by the dotted lines, so as both to deliver into the same pan. Fig. 2 (*h*) represents the receptacle for the soil, consisting of a trough or tray 3 ft. 1 in. in length by 1 ft. 8 in. in width (both outside measurements at the top), and 9 in. in depth (outside), the sides tapering somewhat towards the bottom. This trough should be strongly made of ¾-in. deal, lined with thin sheet lead or stout zinc, and the bottom should be perforated to receive a piece of 1-in. lead pipe (*i*), which passes through the false bottom of the box when the trough is placed in its position, and delivers into the pan already mentioned. Over the inlet of this pipe an inverted saucer of perforated zinc is placed to act as a drainer. Across the bottom of

the trough outside, several strips of wood, ½ in. in thickness, are nailed, so as to form a bearing and to admit of air freely passing under the trough from the orifices in the false bottom of the box. The trough is not shown *in situ*, in order to simplify the figure; but it will be obvious from a consideration of its dimensions that when resting upon the false bottom of the box there will be a space surrounding it 1 in. wide at the top (the space increasing towards the bottom in consequence of the tapering of the sides) through which the heated air from the hot-water pipes, presently to be described, can

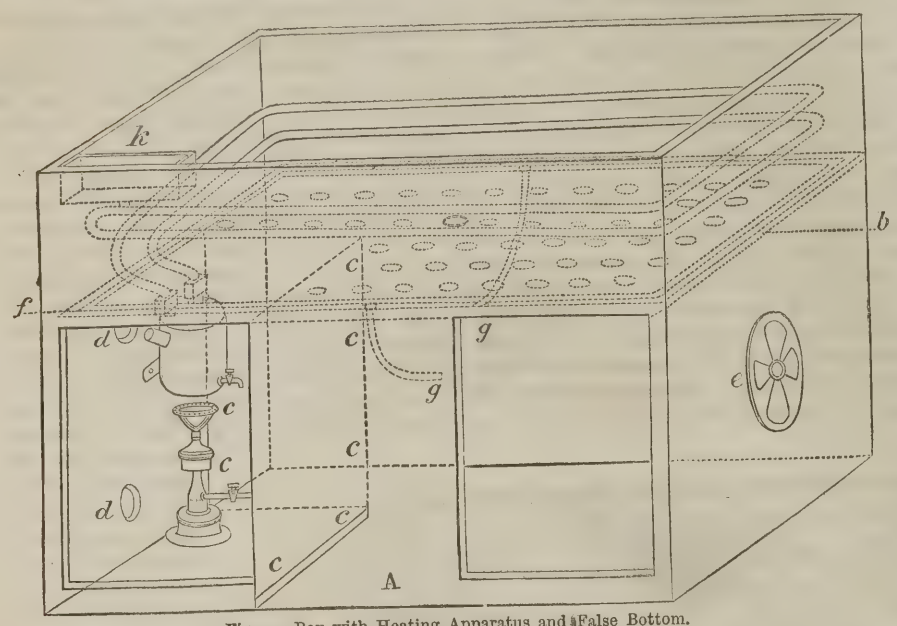


Fig .—Box with Heating Apparatus and False Bottom.

freely ascend. This air-space being in communication, through the perforations in the false bottom, with the larger chamber on the right-hand side of the box, it follows that the ventilator already mentioned affords a means of regulating the air current passing over the pipes. For the sake of appearance a strip of perforated zinc with large apertures may be fixed over the space between the trough and the sides of the box.

The Heating Apparatus should now receive attention. Fig. 3 represents the boiler, which is of stout sheet copper, 4½ in. in diameter by 5 in. in height, and provided with a flue (*a a*) tapering from about 2 in. in diameter at the lower end to about 1 in. at the upper. The boiler is fitted with two unions (*b c*) at the top, one of which (*c*) carries a piece of 1-in. pipe (*d*) passing nearly to the bottom, and a small tap (*e*) is placed at the lowest point to draw off the water when required. A copper strap (*f f*), soldered to the boiler, serves to fix it to the side, or preferably in the angle of the apparatus chamber, and it should be placed as close to the roof as is convenient, in order to leave as much room as possible beneath for the lamp. The boiler may advantageously be provided with a well-fitting felt jacket to check the radiation of heat from its surface. In fixing the boiler, the orifice of the flue should be turned towards the upper hole in the end of the box, so that an elbow may be fitted on, if desired, to convey away the products of combustion. From the union (*b*) a piece of 1-in. lead pipe passes through the false bottom, along the left-hand end and so round the case, as shown in fig. 2, until it reaches the left-hand side of the front, gradually rising as it goes until it is 3 in. or 4 in. from the top. Here it is doubly bent and it passes back beneath the first coil, finally re-entering the apparatus chamber, and being connected with the union (*c*). Thus is provided a flow and return pipe, altogether about 19 ft. in length, and having between 4 and 5 square feet of heating surface. The openings through which the coil passes through the false bottom must be carefully caulked to make them air-tight, and in attaching the coil to the sides of the box thin strips of wood should be interposed to keep the pipes from contact with the sides. Into the highest point of the coil one end of a short piece of ¼-in. composition tube is soldered, the other end being similarly attached to the bottom of the small water-tank (*k*), which is fixed to the side of the box, so that the tops are flush. This tank may be 8 in. long by 1 in. wide, and 2½ in. in depth. As a

Source of Heat the writer would recommend gas, where it is laid on, and in many cases the supply pipe may be conveniently brought through the floor of the room, and directly through the bottom of the case to the burner. In the selection of the burner something will depend upon the locality as influencing the general temperature of the apartment, and upon the extent to which the room is used. In a cold room, that is to say a room where there is seldom a fire, and in a cold locality it will be best to have a ring burner, 2 in. in diameter, pierced with a dozen holes. This, placed at a distance of 1 in. from the bottom of the boiler, will give abundance of heat in the coldest weather. Of course where little heat is wanted the ring burner may still be used, and the gas supply checked to the necessary extent, but in such cases it will be found that an ordinary steatite fish-tail or bat's-wing burner turned down low is more convenient. And here we come to the consideration of a most important question. Shall we make the regulation of the gas, and consequently of the heat of the case, automatic, or not? Some there are who are ready to affirm that it is quite useless to attempt the heating of so small a structure unless an automatic regulator be provided, and they confidently predict the freezing or frying of the contents as a necessary consequence. The experience of the writer is, however, entirely opposed to this view. With the heating apparatus already described he has found no difficulty in regulating the temperature without the use of any automatic apparatus, even when the case has been left for days unattended to. Of course violent fluctuations in the temperature out-of-doors will produce alterations within the plant-case, but not nearly to the same extent as if the case were in the open air; and if any thing like daily attention can be given, even for a couple of minutes, these fluctuations can be easily counteracted after a little experience. Besides which it is not as if the temperature were the only point requiring attention; the ventilation of the case is an equally important matter, and inasmuch as the rate of passage of the heated air through the openings provided depends upon the difference of the temperatures of the air inside and outside the case, it follows that whenever the heat is increased under the boiler the ventilator openings should be decreased, unless one desires to expedite the ventilation, as for instance in damp weather or in winter, when the case is required to be kept freer from moisture. The only kind of regulator which the writer would recommend is Sugg's Governer, which is useful in keeping the pressure of gas uniform. This little apparatus is now commonly attached to the street lamps, and may be procured for a few shillings. The pattern selected should be that which admits adjustment for any desired rate of consumption of gas, however small. The Governor screws on to the cast-iron pedestal of the lamp beneath the burner.

In case, however, the reader should prefer to have an automatic heat-regulator, the following description of a suitable arrangement is given: Fig. 4 *(a)* is a water-tight box of thin sheet zinc, 6 in. long by 4 in. deep and 1 in. wide. Into the top of this box is soldered a brass tube (*b*), about ¼ in. in internal diameter, bent at right angles at about 6 in. or 7 in. from the box, and terminating at *(c)*, where it is connected by a piece of india-rubber tubing with a glass tube (*c c*) of the same diameter and bent as shown in the figure. Over the tube (*c c*) is fitted by means of a cork a larger tube *(d)*, about 1 in. in diameter, and 5 in. or 6 in. in length, and through the same cork is passed a tube (*e*) bent once at a right angle. The upper end of the large tube is also closed by a cork which carries a glass tube *(f)*, bent once at a right angle, and sufficiently small to pass loosely into the tube *(c c)*. The metal box and tube are filled with water (boiled to expel the air), and the upper part of the tube (*c c*) is similarly filled. The lower part of the tube (*c c*) is filled with mercury, care being taken that there is no air between the mercury and the water, and no water above the mercury in that limb of (*c c*) into which the tube (*f*) passes. The apparatus is placed in the plant case at the temperature which it is desired to maintain, and left there until the water ceases to expand under the influence of the heat, and drive the mercury forward. The tube (*f*) is then adjusted, so that its orifice is only just closed by the mercury. The apparatus may stand upon the hot-water pipes at the end of the case, where it will be less unsightly than elsewhere, but under these circumstances it will maintain a uniform heat in the pipes rather than in the atmosphere of the case. For use with this regulator the gas burner will require to have two small tubes soldered into the supply pipe, one on each side of a small tap, as shown in fig. 4. These tubes are to be connected with the tubes (*e*) and (*f*) of the regulator, and for this purpose it will be convenient to fix, air-tight in the roof of the apparatus chamber, two small tubes close to the end of the case, the connections with these being made of india-rubber tubing. The action of the apparatus will now be seen. The tap of the gas burner between the two small tubes should be turned on only so much as to give a supply insufficient to provide enough heat, and indeed

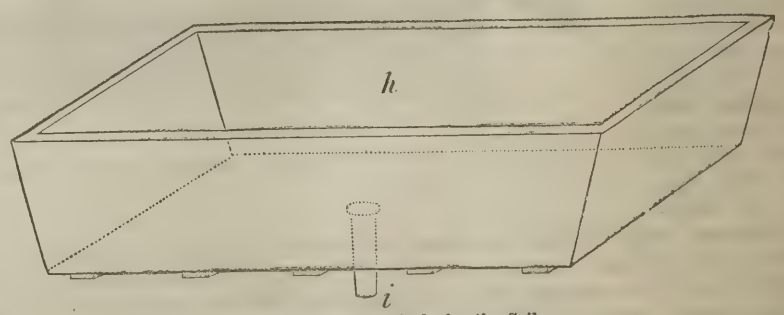


Fig. 2 *(h)*.—Receptacle for the Soil.

the only use of this "by-pass" is to prevent the extinguishing of the gas by the action of the regulator. As the temperature of the air in the case falls the water in the metal box contracts, the mercury recedes, the orifice of the tube (*f*) is uncovered, and gas passes through it, up the annular space between (*f*) and (*c c*) into the large tube (*d*), through the tube (*e*), and so to the burner, which it continues to supply until the increased size of the flame has so much raised the

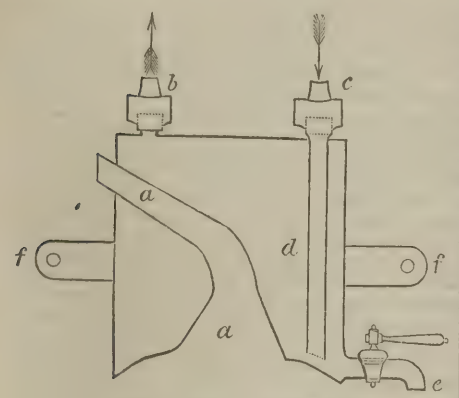


Fig. 3.—Section of Boiler.

temperature of the case that the expansion of the water in the box has again, through the medium of the mercury, closed the orifice of the tube (*f*), and stopped its passage. Where gas cannot be used for heating, the best substitute is a mineral oil lamp, with a flat wick ⅝ in. in width, provided with a chimney of metal and talc, and having a shallow oil reservoir of large diameter. The lamp should be fed with "water-white petroleum oil." The

Decoration of the Case should now be proceeded with, in order that the inelegant deal box depicted in fig. 2 may be converted into the handsome pedestal represented in fig. 1. Three mouldings should be provided. The upper one may be about 1 in. in width, and should be put on so that its edge is about ⅛ in. above the top of the box, and it will be well for the top of the box itself to be slightly bevelled, so that its inner edge is somewhat the lower. This will prevent any accumulation of the water, which may be condensed on the glass. The middle moulding may be about 2 in. in width, and it should be about 2 in. in thickness at its lower edge, which should be 7 in. from the top of the box. The lower moulding at the bottom of the box should be somewhat bolder than the middle one. The surface of the box, including the doors, comprised between the middle and the lower moulding, should be covered with virgin cork, broken into small pieces for convenience of fitting, and fastened on with French nails.

Upon the care which is expended in this operation the appearance of the case when finished will largely depend, and whatever else is entrusted to the workman, the writer would recommend this being done by the amateur. It is more a question of patience than of skill, though a prolonged study of the Chinese puzzles of our infancy would be a fit preparation for the task. A ½-cwt. bale of the cork will be more than enough, and will permit of the rejection of the less suitable pieces. It will now be seen why the doors of the pedestal are not hung on hinges, for of course if they were, being covered with cork, they would not open unless an unsightly blank were left. By the method of fitting recommended, the joint may be made so neatly that the doors are almost invisible, and they require no fastening to keep them shut. The cork surface should be sized and well varnished, and the woodwork may be painted a dark olive-green and bronzed or ebonised, and the mouldings gilt.

The quondam plain deal box will now present the appearance of a receptacle for the soil, resting on a handsome solid pedestal, and is ready to receive the glass superstructure. This part should be made by a specialist accustomed to the work, and there is some room for difference of opinion as to its form. The arrangement shown in fig. 1 is convenient, the two doors in front affording easy access to the contents; but a simple sheet of glass for the front and back, with the ends to open as doors, may be considered by some to have a better appearance. Whether the doors are at the ends or in front, they must fit well. The curved top, though more costly, is worth the extra price. On the summit is the ventilator, consisting of two strips of glass sliding in a groove 1 in. in width, and slightly overlapping in the centre when the ventilator is closed. By sliding them over each other to a greater or less extent, corresponding openings for the escape of the heated air are left at the ends of the groove. The glass case should have a strong wire passing from end to end beneath the ventilator for the support of hanging baskets, and another wire should be stretched across each end on a level with the tops of the doors. The following dimensions will be found suitable, and a structure of this size, made of stout glass and strong zinc angle bar (which should be painted to match the pedestal), will not be too heavy to be easily lifted on and off by two persons: Length, 3 ft. 4 in.; breadth, 1 ft. 11 in.; height to top of doors, 2 ft.; total height, 2 ft. 11 in.

Situation for the Case.—The selection of a suitable position for the case will probably have been made before its construction was commenced. As to aspect, much will depend upon the character of the plants to be cultivated. Plants with brilliantly coloured foliage and most flowers cannot, it is well known, be grown to advantage without strong light; and, on the other hand, Ferns will not thrive if exposed to sunshine. A sunny spot may of course be shaded, but this precaution may on some occasion be neglected, to the injury of the occupants of the case, and it will, therefore, probably be the wisest course to choose a northern aspect where possible. It has been already mentioned that the orifice of the flue of the boiler should be turned to the opening in the end of the box, so that an elbow

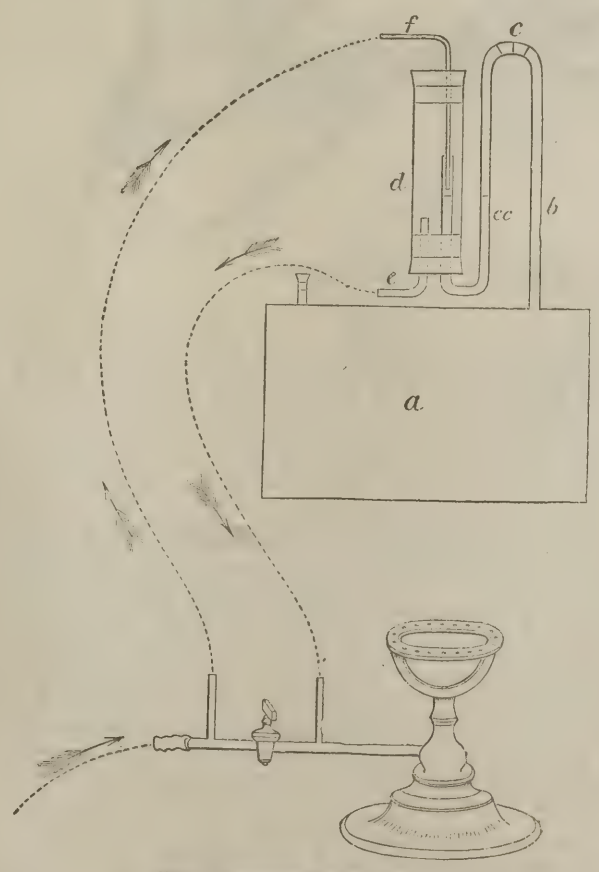


Fig. 4.—Automatic Heat-regulator.

may be applied to carry off the products of combustion. This is not a necessity, but where convenient it would certainly be well to adopt it, and the elbow should preferably pass through the wall or window-frame, and terminate in the open air.

The construction of the plant-case having been completed, and the little boiler with its circulating pipes filled with water, heat may be applied, and the bed of soil prepared for the reception of the plants. Covering the bottom of the trough should be a layer of potsherds at least 2 in. deep, the largest fragments at the bottom, and with these may be advantageously mixed some pieces of charcoal; over this layer should be placed a stratum of dried Moss to prevent the earth from passing into and choking the drainage; and lastly the trough should be filled to within 1 in. of the top with the compost, which may consist of good fibrous peat mixed with plenty of silver sand, to which may be added loam when planting those subjects which require it. The surface of the soil may be diversified by the formation of slight hills and dales, and by placing here and there, half-embedded, a few fragments of porous stone. The earth should then be thoroughly saturated with boiling water, which will destroy any animal or vegetable life present in it, and next day the case will be ready for the plants.

Stocking the Case.—On the subject of stocking the case, the writer proposes to suggest little beyond giving the names of various plants which he has practically found to succeed well. In planting a case, as in laying out a garden, written descriptions are of little use, and almost everything must be left to the taste of the operator. Nevertheless, a few general hints may be of service. It is well to line, as it were, the ends and back of the case with tall-growing Ferns, so as to form a good dense background of verdure; but uniformity of height in the plants thus arranged must be avoided, so as not to produce anything approaching to a straight line. In the rest of the case marked contrasts as to height and form should be aimed at, and a few distinct plants springing from a carpet of dwarf plants will be more effective than a number nearer alike in character. Above all things, a crowd of plants should be avoided, and room should be given to each to develop and display its beauties of form, all large-growing plants being thus necessarily excluded from a case of the dimensions given, unless one is prepared to keep them only so long as they remain in a small state. Again, no supporting or training of the plants is admissible, for it is essential that they should appear to be growing quite naturally. Passing from generalities, the following arrangement is given as one which will be found to afford satisfaction: As a background Pteris serrulata cristata, P. s. angustata, and Adiantum affine. In the centre of the case a well-grown Palm—say Areca lutescens. At the ends of the case, A. assimile, A. cuneatum, A. concinnum latum, A. Sanctæ Catherinæ, and Cheilanthes elegans. Difficulty is sometimes experienced in the management of some of the large-fronded Adiantums, especially in the winter, but the writer has found A. Sanctæ Catherinæ to thrive well in the heated case. The very beautiful A. macrophyllum cannot, unfortunately, be recommended for the purpose, though it may be preserved in good condition through the summer. Towards the front of the case may be planted the graceful Asplenium viviparum; right and left of the Palm, Maranta rosea picta, M. Makoyana, M. chimboracensis, and a small plant of Alocasia metallica, the splendid foliage of the Marantas and Alocasias contrasting well with the Ferns. A. metallica will soon grow too large, but not before it has well paid for the

rouble of its removal. Space should be preserved for a plant of Anthurium Scherzerianum, which will thrive and produce its brilliant spathes with a little care. A specimen may also be added of the New Holland Pitcher-plant (Cephalotus follicularis), and of the interesting little Venus' Fly-trap (Dionæa muscipula), though the writer has found it impossible to preserve the latter in an active condition—probably in consequence of its receiving insufficient light. If possible, room should be found for at least one species of Cypripedium, say C. insigne, C. barbatum, or C. niveum. The pretty little Fittonia argyroneura, F. Pearcei, and F. Verschaffelti are also useful for filling nooks. All vacant spaces should be carpeted with the common Selaginella, the beautiful blue S. cæsia, and the compact S. apoda, and a small plant or two of Tradescantia zebrina and Cyrtodeira fulgida may be added.

From the top and sides of the case should be hung a few Orchids in baskets, which will succeed well without more care and attention than they require in the Orchid house. It will be found in all cases that the cooler-growing Oncids do remarkably well, and, in fact, the writer has had blossoms of Oncidium flexuosum as good as could be wished for produced in the plant case. A further selection may be made from the various species of Lycaste and Odontoglossum, and those who admire its blossoms may add a plant of Sophronitis grandiflora, which is best grown on a small block. In addition to the Orchids (which may be advantageously planted

The Spire Lily Hyacinthus candicans).

in home-made baskets of virgin cork), plants of Æschynanthus fulgens, Panicum variegatum, and Tradescantia zebrina may be suspended from the upper part of the case. Isolepis gracilis cannot be recommended for this purpose, as it is difficult to keep it sufficiently well watered. The arrangement thus sketched out may of course be modified in all cases by the substitution of many other Ferns for those named, as, for instance, Phlebodium aureum (selecting a small specimen), Pteris cretica albolineata, Gymnogramma chrysophylla, &c., and by replacing the Marantas by Caladiums or by variegated-foliaged Begonias; but although such Caladiums as C. Chantini and C. argyrites brighten up the case wonderfully, they possess the great objection that their places are necessarily blank during the winter; and, in fact, no deciduous plants can be altogether recommended as suitable for the case. Again, the Areca lutescens may be replaced by a Dracæna or by a different species of Palm, and by none better than Cocos Weddelliana, if expense be no consideration.

Those who have had no experience in the indoor cultivation of plants may be glad of a few suggestions as to the management of the case. The temperature at which it is kept may, for such a collection as that described, be, during the summer, about 70° Fahr. in the day, and somewhat less at night—the gas remaining at the same height, the decrease in temperature of the room will do all that is needed in diminishing the heat. It may be objected that the most fitting temperature for the cultivation of the Marantas, Caladiums, and other fine-foliaged plants enumerated is somewhat higher than that which would be recommended for some of the Ferns with which they are associated; this, however, is an evil inseparable from every mixed collection, whether in a house or case, and it will be found that the intermediate temperature specified will sufficiently meet the requirements of both classes of plants. During the early part of the summer, when the plants are making new growth, ventilation should be carefully attended to, so that the atmosphere may not become unduly dry; and it will be found advantageous to have two or three small water-tanks, made of sheet zinc, about 4 in. long by 1 in. wide, and of such depth that when resting on the hot-water pipes their tops are level with the top of the trough containing the soil. These tanks are to be filled with water, which by its evaporation will keep the atmosphere of the case charged with moisture. In addition to a dry-bulb thermometer hanging in the case to indicate the temperature it will be well to have a wet-bulb thermometer in the same frame, the two constituting a hygrometer, and in the summer there should not be at any time a difference of more than 2°, or at most 3°, between the readings of the two thermometers, while the nearer the indications are the better. While striving to maintain a sufficiently humid atmosphere, the operator must see that enough ventilation takes place at the same time, or the Orchids and some of the other plants will suffer. This is regulated, as already described, by the revolving ventilator at the end of the base or pedestal, and by the glass slides on the top of the case. There is, however, more danger with a heated case of having too much ventilation than too little, and in fact it will sometimes be found necessary to cover the glass slides with a strip of felt to further check the escape of air through the crevices. The condition of the glass will afford some criterion as to the state of the air; the surface should not be quite dry, but need not be allowed to become so much bedewed with moisture as to obscure the contents of the case. The watering of the plants (with the exception of those in baskets) will not require to be very frequently attended to, in consequence of the large bulk of the soil; once a week will usually be as often as it is required (though some of the plants will enjoy a more frequent dose if the drainage be good), except round the edge, where the contiguity of the pipes causes more rapid desiccation. Of course the supply of water to the little tank of the hot-water apparatus must not be neglected, and it will be well to have a slip of glass to act as a cover and check evaporation, when the tank will not require filling so frequently. In winter the temperature of the case may be allowed to fall to 50° or 60° Fahr., and the atmosphere, as well as the soil, should be kept drier by somewhat freer ventilation and less frequent watering.

Mildness of the Season.—I picked, on Jan. 5, from a small garden by the sea, the following flowers: Gloire de Dijon and monthly Roses, white and blue Violets, Primroses, Antirrhinums, Marigolds, Christmas Roses, Stocks, French Marguerites (off a large tree), Virginian Groundsel, winter Jasmine, Veronicas and a large handful of Mignonette.—*Sandgate, Kent.*

—— The following flowers were picked in the open air on Christmas Day in a garden in Dorsetshire: Violet, Primrose, Primula, Pansy, Polyanthus, Eccremocarpus, Mignonette, Marigold, Virginia Stock, Wallflower, Brompton Stock.—R. C. C.

THE AUTUMNAL SPIRE LILY.

(HYACINTHUS CANDICANS.)

THIS is one of the most interesting of all large-growing bulbous plants, and one which has proved to be hardy in many gardens. In waxiness and purity the flowers of this Hyacinth are indeed almost comparable with those of Lapageria alba, and that their effect is heightened by the black anthers, which form such a prominent feature in the blossoms. Even in cold or bleak localities the plant might be grown in a corner, sheltered by plant-houses, or beneath a sunny wall, for it is well known that many Cape bulbs, such as Crinums, Ixias, Watsonias, and even such plants as Hedychium Gardnerianum, Lilium giganteum, and tropical Solanums are perfectly amenable to open-air culture, if planted close to the foot of a warm plant-house wall. As a general rule, however, this Hyacinth is well able to take care of itself, if well planted in a deep, rich sandy border, sheltered from cutting eastern winds. It may also be successfully grown in pots for the autumn decoration of the greenhouse. In spring the pots should be plunged half their depth in coal ashes in a sunny position in the open air.

The bulbs of this plant may now be obtained in quantity. They are sometimes advertised at 10s. per dozen, but by the hundred they would be much cheaper, and for cut flowers the plant would be worth twice the money for its wealth of refined wax-like flowers.

Double Wallflowers.—I thank "Burns" (ans. 3830) for calling attention to the scarcity of the old double blood-red Wallflower, which has been much neglected of late years, and I may add the old English double yellow Wallflower, for border or pot culture, would well repay time and trouble bestowed upon it. Allow me also to ask if the old crimson Globe Dahlia cannot be brought prominently forward again? I was the means of keeping and supplying it in my neighbourhood for several years, but ultimately lost it myself. I consider it was the most perfect in form, colour, habit, and constant flowering of any of its class; in symmetry it was a perfect gem.—NORTH NORFOLK.

Clothing Stems of Standard Roses.—It is seldom we see any attempt to hide, or rather to decorate, the naked stem of the standard Rose. There are not many plants suitable for this purpose, and to which no objection can be urged. In my opinion nothing is so well adapted as the Petunia, of the cultivation of which you give so good an account in No. 93. Three or four plants of the single variety should be planted at the base of each tree, and the head will be found to afford some little shelter from rain, a considerable advantage to plants like this whose flowers are of somewhat flimsy texture. With the exception of tying up as they advance in height, they will give no further trouble, but remain in continuous bloom the whole summer, greatly adding to the beauty of the garden, more especially when the standard Roses are placed as usual round the lawn.—J. V. A.

Salvias for Winter Flowering.—These form such useful plants for furnishing conservatories where large masses of colour are required, that the most expeditious way of getting up a good stock of them is of importance when such structures are required to be kept gay at this season. I have tried the plan of planting out such varieties as splendens, Heeri, and gesneræflora, but although larger plants may be grown with less attention as to watering, &c., than by confining them in pots, I am convinced that more floriferous and altogether better plants may be grown by the latter method, as, being of a strong-rooting and gross-feeding habit, they become over luxuriant if planted out in good soil; and, as is well known, a short-jointed, well-ripened growth is conducive to free flowering, it follows that pot culture is mos likely to attain that end in the case of such subjects as the Salvia, and on the score of

economy of labour there is not so much real as apparent saving by the planting-out system, as the extra attention of lifting, potting, and getting the plants established would nearly counterbalance the labour of watering, which is the principal objection to the pot system. It is altogether different with plants like the Calla, where the size and strength of the leaves determines the size of the flower, as in the Salvia a well-furnished head of flower is of more importance than the size of individual flowers.—J. G.

NOTES ON AURICULAS.

Auriculas are plants well adapted for owners of small gardens, inasmuch as they take up but little room and are easily managed. No plant, indeed, is easier to cultivate, but they require considerable attention, and that, too, at the right time. Though natives of high-lying regions, where the air is clear and untainted by smoke, they will, nevertheless, thrive where less beautiful plants would pine and die. Amongst what are termed florists' flowers the Auricula is the first to gladden our eyes in spring with its rich and varied blossoms, and so popular has it become within these last few years, that the choicest and scarcest varieties are wholly unobtainable. The section of the genus which is most esteemed is that which was brought to a high state of perfection nearly a hundred years ago. Let me, therefore, briefly describe the points of excellence to which attention has so long been directed.

Green-edged Flowers.—The first class comprises green-edged flowers, and includes all that have the outer margin of the flower quite green, or very sparingly dotted with white points of meal, so that the edge at first sight still appears green. Inside this edge is the body colour; black is most esteemed, but it is also of different shades of maroon, violet, and plum colours; the body colour flashes into the edge, and is never found in a compact ring, as one often sees it in the "model" Auricula represented in drawings. If the body colour, as it often does, strikes through the outer edge, it is a serious defect, and the beauty of the best flowers is marred thereby. Next is the paste, which should be circular, dense, and pure white. The beauty of many otherwise fine flowers is marred by the angularity of the paste. The tube should be bright orange, as a pale tube quite as seriously mars the beauty of the flower as the body colour striking through to the outer edge. Beeston's Apollo is an example of a flower with a beautiful green edge, and the body colour and paste are also right, but its pale tube is a demerit, a fault even more strikingly exemplified in Trail's Prince of Greens. The beautiful emerald green edge of the latter incloses a perfect black body colour and solid pure white paste, but its watery tube ruins all. Auriculas, indeed, are still far from perfection as regards green edges, although many are very beautiful.

Grey-edged Flowers.—The next class is the grey edges, and in this are to be found the most perfect flowers yet raised. The points in this, as in the next class, are the same as those indicated above. The best flowers in this section have not the same defects as the best flowers in the green-edged class. Headley's George Lightbody, for instance, is an example of the very best Auricula in existence; its parts are evenly balanced, and the paste is circular. Lancashire Hero (Lancashire) is also a noble grey-edged flower, and one which is not always second to Mr. Headley's Masterpiece itself, though not quite such a decided grey as that flower; the meal, too, is so thinly laid on the edge, that it is sometimes classed with the green-edged sorts. A defect not yet mentioned, but one which cannot be overlooked, is a scollopy paste.

White-edged Flowers are distinguished from the grey by the greater density of meal on the edge. In some cases this is laid on so heavily that the edge is almost as white as the paste. This may be observed in Walker's John Simonite, a very fine flower, and perhaps the best white-edged flower yet raised. Yet another defect, and one most frequent in the white-edged kinds, is the body colour being dusted with the meal intended for the edge. Summerscale's Catherina, a small, neat flower, has this peculiarity; indeed, some varieties, such as Lightbody's Fair Maid, has this fault to such an extent that they cannot be tolerated in a select collection.

Selfs are flowers that have all the margin outside the paste one decided colour without shading, and they are necessary, having brilliant colours to form an effective contrast to the three other classes. Their edges are variously coloured, yellow, slate, bluish-violet, violet-purple, maroon, black, and crimson.

In Alpines the tube is yellow or pale as in the other class, but the part surrounding the tube is yellow or cream-coloured, and has no paste. This is surrounded by an edge of one colour which should be darkest near the centre, shading off to a paler colour at the edge. The finest Alpines are those with bright yellow centres and maroon or crimson-shaded edges. Flowers with cream-coloured centres have usually mauve or light purple edges shaded in the same way. There are Alpines with very richly-coloured edges or, as some term them, self edges, but they have a dull, heavy appearance in comparison with the shaded flowers.

Form of Trusses. — Auricula trusses should be well formed of five, seven, nine, and eleven flowerets or pips; even numbers do not fill in quite so well as odd ones. The truss should be supported by a stout elastic stem, long enough to carry the head of bloom bravely above the foliage. The diversity amongst the latter is very striking, and is at all times a source of enjoyment to Auricula growers. Some have the foliage quite as thickly dusted with meal as the flowers. Green-edged flowers, as a rule, have foliage destitute of meal. Many of the grey-edged sorts have mealed foliage, and some have it dusted with a very fine powder, and edged with a silver thread, as in Douglas's Silvia and Lightbody's Richard Headley.

Propagation.—This is effected by means of offsets, or by dividing the plants, and by seeds, from which alone new varieties can be obtained. Seeds should be saved only from flowers that have been artificially fertilised, and it may be worthy of remark that the pollen parent exercises the greatest influence on the progeny. Seeds may be sown as soon as they are ripe, or they may be kept until February, and sown in a gentle hotbed. If they be sown in July, when they ripen, the largest proportion of them will not vegetate until the spring. Some varieties increase much more rapidly than others, and many fine sorts remain scarce from the difficulty that exists as regards getting offsets. With the view of increasing scarce varieties, I have sometimes boldly cut their heads off near the surface of the ground. The top will make a strong cutting, and will soon form roots under a bell-glass, and the old stump will also soon throw out growths. I have obtained six or more in this way from one stump. Some varieties will not produce offsets so freely as others, even in this way. Lee's Colonel Taylor is very shy, but Taylor's Glory is quite the reverse; Cunningham's John Waterston is also a good breeder.

Careful potting is a prime element as regards insuring success; the drainage must be free, as stagnant water will cause the stems to rot. Cleanliness, too, must not be neglected. Greenfly, a troublesome pest, can be most readily destroyed by fumigating with Tobacco. It is best to do this during the winter; at other times the fly may be kept in check by brushing it off with a camel's-hair pencil. Decaying leaves sometimes induce the stems to decay if not promptly removed. During winter water must be applied with caution. I never water a plant until it is quite dry at the roots. J. D.

Coral-flowered Shrub (Berberidopsis corallina).

THE SHRUBBERY.

Berberidopsis corallina.—Amongst all the interesting and handsome shrubs which we have obtained from Chili, few, if any, surpass this in real beauty. It is of scandent habit, has glabrous, evergreen, spiny leaves, and long-stalked, deep crimson blossoms, which last a long time in beauty, and which are, moreover, produced in succession over a long period. It succeeds well in good fibrous loam, with a slight admixture of peat; and it has proved quite hardy in various positions, such as against a due south wall, on a western aspect, and also hanging over and creeping amongst stones on rockwork; in open situations, too, fully exposed all round, it succeeds about equally well. I am not aware how high it will grow ultimately and under very favourable conditions, but my opinion is that it will not much exceed 3 ft. in height, seeming to have rather a tendency to extend

laterally than upwards. Therefore, its proper position on a wall would be one of those bare spaces which one often sees between two other wall shrubs that grow wide at the top and leave the base bare. It is one of those really good shrubs for which a place should be made in every garden.—T. S. [The accompanying sketch of this valuable shrub was made in Messrs. Veitch's Nursery at Coombe Wood, Kingston-on-Thames.]

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

Jan. 17.—Sowing Agrostis nebulosa and pulchella in pots; also sowing a few rows of Little Gem Peas close to a south wall. Potting Masdevallias and Selaginellas. Re-potting plants of Calceolaria aurea floribunda into 8-in. pots for spring flowering. Putting in cuttings of Nasturtiums and Heliotropes. Putting in Vine eyes. Planting remaining fruit trees. Putting in plants to force for stands and cut flowers; also another batch of Asparagus. Shifting Humeas into 10-in. pots. Putting Asparagus tops over Peas just peeping aboveground to keep off sparrows, and to ward off frost; owing to the lightness of this material, the Peas grow right through it. Painting Apple and Pear trees with three parts lime and one part soot, mixed with water to the consistency of paint. Examining basketed Dendrobiums, and removing any decayed material. Watering Cucumbers, but taking care not to get them too wet. Sorting Apples and Onions. Making up hot-beds for Lettuces, Cauliflowers, Carrots, Raddish, tree Carnations, and Violet cuttings. Turning manure for Celery. Dipping Cinerarias into Tobacco-water for fly.

Jan. 18.—Digging Rose borders; also land for succession Peas. Sowing a border of Parsley, Carrots, Radishes, Alexandra and Paris Cos Lettuces, and Walcheren Cauliflower in frames. Potting some Tuberoses and placing them in heat to force. Putting in cuttings of Coleus, Crotons, and more Alyssums; also a little Musk in slight heat weekly. Nailing Roses on walls. Putting some red worsted over Peas that are coming up to keep off birds; also sooting Gooseberries for the same purpose. Finishing pruning Gooseberry trees. Thinning plantations.

Jan. 19.—Putting in cuttings of Ageratum and Solanum capsicastrum; also old plants of Achyranthes, Alternantheras, Heliotrope, and Mesembryanthemums into warm Vinery to induce them to furnish cuttings. Planting out Potatoes from pots. Getting all Roman Hyacinths in flower into greenhouse. Putting Kidney Potatoes into hampers to sprout. Cleaning scale off Camellias and one or two other plants. Making up hotbed for tree Carnation cuttings. Loosening shoots of Peach trees on wall ready for pruning. Clipping Privet hedges.

Jan. 20.—Digging vacant ground. Sowing Advancer and Laxton's Alpha Peas, Long-pod Beans, some Dutch Turnips, and Campbell's and Emerald Melons. Potting Mrs. Pollock Pelargoniums. Shaking out and re-potting Daturas and Erythrinums. Putting in more cuttings of Salvia patens, Fuchsias, Nepetas, Alyssum, Agathea, Achyranthes, and Coleus. Planting Seakale for forcing; also Potatoes as fast as they are ready for planting. Getting soil in to warm for potting French Beans. Tying pillar Roses. Forking amongst Gooseberry trees, giving them a sprinkling of guano. Removing suckers from fruit trees. Plants in flower—Yellow and other Roses, scarlet Van Thol and double Tulips, Crocuses, Mignonette, Deutzia gracilis, Monochætum ensifolium, Tydæas, Begonia incarnata, Lily of the Valley, Thyrsacanthus rutilans, Primulas, Azaleas, Dielytra, Hyacinths (red, blue, and white), Daphne indica, Calla æthiopica, Cytisus Attleeana and canariensis, Cinerarias, Camellias, Acacias, five kinds of Epacris, Erica gracilis autumnalis, and E. hyemalis.

Jan. 21.—Sowing Golden Feather Pyrethrum, Centaurea argentea, and more Mignonette in pots. Potting Kalosanthes into large 3-in. pots in very sandy soil, and placing them on south side of greenhouse. Putting and basketing Dendrobiums. Striking cuttings of Dracæna terminalis in strong bottom-heat. Planting more Potatoes in pits; also Ash-leaved Kidney and Myatt's under Peach wall. Liming and sooting the Gooseberries and Currants.

Jan. 22.—Sowing Cyclamen seed and putting it into cutting pit; also Auricula seed, and putting it into greenhouse; likewise a few Tripoli Onion seeds in heat, and Red and White Celery under glass on a manure bed. Potting Gardenias. Dividing Maiden-hair Ferns, and putting them into 3-in. pots. Potting some autumn-struck Fuchsia cuttings. Layering Tree Carnations. Nailing Apricots. Covering Celery with straw to protect it from severe frost. Top-dressing Orange trees with half manure, half loam; also Lilacs and Laburnums. Making up Potato beds for frames. Putting soil in to warm for young Cucumber plants, and getting leaves and other fermenting material in pit ready for them.

Glasshouses.

Climbers.—Where plants for draping the rafters, covering an end wall, or for using in any similar way, are employed in the stove, they should now be gone over and cut back sufficiently according to their kinds. In carrying out this operation it is necessary to proceed with discrimination, using the knife the most freely on the strongest-growing subjects, that soon extend so far as to injuriously encroach upon other plants. Strong-growing climbers, such as Ipomœa Leari, Bougainvilleas, Dipladenias, Thunbergias, Clerodendrons, and the large-leaved Passifloras, may be freely cut back proportionate to the size of the plants and the space they are intended to occupy, remembering that in all cases the further they can be allowed to extend, the more profusely they may be expected to bloom. Medium-growing climbers, such as Combretum purpureum, Ipomœa Horsfalliæ, Jasminum Duchesse d'Orleans, the double and single varieties of J. Sambac and Manettias, should not be so hard cut in.

Stephanotis floribunda ought not to be cut back to any considerable extent at this time of the year. What pruning is necessary should be deferred until after the flowering, when all the shoots may be shortened in accordance with the space required to be occupied. Supposing the growth to have been well ripened during the preceding autumn, reduction of the shoots now will proportionately limit the abilities of the plants to bloom.

Hoyas.—The twining species of these should only have their shoots shortened either at this or any other time of the year, so far as is necessary to keep them within bounds; for flowering, as is their natural habit, during a series of years from the same spurs, whatever reducing of the shoots is carried out in their case also limits the blooming. In cutting back all the above plants it is necessary for the operator to pay some attention to carrying the work out in a way that will admit of the production of young growth over the whole surface which is retained of the plants individually. This can only be effected by shortening the shoots to different lengths in place of, cutting the whole back to something near a uniform length, the result of which is that nearly all the young growth made is from the point where they were shortened back to, leaving the lower portion of the branches devoid of fresh shoots, and, consequently, unable to bear flowers, of which it is desirable that an equal production over the whole surface of the plants should exist.

Fine-foliaged Climbers. — Climbers that are grown for the beauty of their leaves, such as the different species of Cissus, Pothos argyrea, Echites nutans, &c., should be freely cut back, so that the greater portion of the surface they occupy during the summer may be covered with new foliage. It may be well here to remark that the time of cutting in gives the best opportunity during the whole year for giving a thorough cleaning from insects. With these plants it is necessary now to do all that is possible to eradicate these pests, as from the position occupied when growth has fairly commenced there is less opportunity of dealing with them than in the case of non-climbers.

Fine-leaved Plants.—There is no greater mistake committed with these subjects than allowing them to get so tall as to be deficient of healthy foliage at the bottom, or in any way to exhibit old leaves wherein is an absence of the fresh, healthy vigour and colour for which they are grown. We often see plants like Dracænas, Aralias, Brexia chrysophylla, Crotons, Cupanias, Ficus, Sphærogynes, and Cyanophyllums in anything but a condition that makes them pleasing objects, for want of heading down when they require it. Now is the best time for this operation, in all cases allowing the soil to become somewhat dry before removing the head. With strong-growing species, such as Sphærogynes and Cyanophyllums, that process a limited number of eyes, it will be found much better to leave from 2 ft. to 3 ft. of stem, cutting the eyes out from the top downwards to within 6 in. of the collar; this will force their breaking near the base, which will insure a handsome stem, well furnished with leaves down to the bottom, and by leaving a considerable portion of the stem in this way, until the young shoot which is to form the future specimen has made some progress, it will materially assist the young growth, and avoid the chances of the cut-down plant dying, which sometimes results from the whole of the head and stem being removed at once. Plants treated as described should always be placed immediately where there is enough warmth to induce their breaking without delay, as, if kept where so cool as to retard growth, the inevitable loss of roots consequent upon heading down is certain to be further increased; to this frequently may be traced the death of the plants. The headed-down specimens ought to be syringed daily, taking care not to wet the soil too much until they have commenced to grow freely.

Gloriosas.—When these plants are grown, either as trained specimens or pendent from a rafter, place the bulbs at once where they will start into growth, as they take a good time from the young shoots beginning to push to their arriving at a blooming condition, and it sometimes happens that when the growths are not made sufficiently early, it gets far towards autumn before they flower. It is better not to give them too much pot room in the first instance. They succeed more satisfactorily by potting a second time than at once placing the roots in the full body of soil they are to occupy.

Ferns.—Structures devoted to the cultivation of Ferns have usually at the present day more or less space so arranged that the Ferns can be planted out, giving them so far as possible a natural appearance. In the selection of the plants to be thus treated it is necessary to keep in view the suitability of the kinds chosen for the purpose, both as to their ability to bear shade proportionate to the position each individual plant will occupy by being overhung by others, and also to the size they will ultimately attain. It frequently happens that a want of consideration in this last matter much interferes with their well-being afterwards by some encroaching upon others, which either necessitates disturbance by removal, or a portion are so weaked by overcrowding that they ultimately die. The greatest mistake where Ferns are so grown is the introduction of too many large tree species that inevitably smother most of the weaker small growers, and in a few years have not near enough space for their own development. When many specimens of large habit of growth are brought together in a comparatively small house, it not only detracts much from the individual beauty of each, but destroys the effect of the whole; unless where the house is large and roomy in every way, it is better to have the tree kinds in either tubs or pots, plunged up to the rims in the beds where the smaller growers are planted out, by which means they can be kept within the prescribed limits, at the same time allowing them to develop sufficiently to exhibit their true character. Another advantage arising from their being grown in this way is that the position of any particular plant, or the whole of the large ones thus grown in tubs, &c., if need be, can be altered as occasion requires, either with a view to afford more room where it may be wanted, or to give a different appearance to the house where a continuous position held by the plants is somewhat monotonous. The present time, when most Ferns are at rest, or nearly so, is the most suitable for any alteration required in the arrangement, as the smaller occupants which are planted out, some of which there would be a necessity for moving, can be taken up and replanted where wanted without seriously interfering with their growth, which removal later on, when their young fronds have begun to push, is certain to do.

Insects.—Here also advantage should be taken of their dormant state to eradicate the insects most usually troublesome—brown scale and thrips. Scale is not easy to cope with on Tree Ferns that are planted out, and unless an attempt is made now when the insects are not increasing fast, and the fronds are in a hard mature state, which enables them to bear a much stronger dressing of insecticide than during the growing season, a deal of labour will need to be expended upon them in summer. The eggs of thrips can, in like manner, at this time, be more effectually dealt with. The best way to proceed that I have been able to find is to dip the fronds singly in a strong solution of insecticide, allowing it to dry on, repeating the operation three or four times before the young growth commences to move; any old fronds that show signs of decay may be cut off, and in this way whatever insects are on them will be got rid of.

Flower Garden.

Carnations and Picotees.—Soil for potting ought to be prepared; good turfy, clayey loam answers best. The decayed turf should be torn to pieces by the hand, carefully inspecting it at the same time with the view of destroying all the wireworms which it may contain. To four parts of loam add one of leaf-mould, one of rotten stable manure, and one of sharp sand, mixing all together by turning the

mass over twice ; it ought then to be stored in a dry place until it is required.

Dahlias and Hollyhocks. — If the weather is unfavourable for other work, stakes may be prepared. Those made of good deal, and painted green, last the longest, and look the neatest. The part underground and a little above it should be dressed with a composition of equal parts of tar and pitch laid on boiling hot ; even charring the part of the stick that is to go underground tends to prevent decay.

Pansies and Pinks.—Those in beds will require attention during alternations of frost and thaw, as it is at such times they get injured. Dress the surface of the beds with dry manure from a spent Mushroom bed, which is about the best material that could be used for preventing injury during changeable weather.

Phloxes in Pots.—Plants that were raised from cuttings, and that flowered last autumn, should now be placed, if possible, in a greenhouse temperature. Growth will thus be made earlier, and the cuttings can be taken off, perhaps a month sooner than it would be possible to do if the plants were protected only by a cold frame. It is rather too early as yet to repot, but that operation might, nevertheless, be performed now, if it be likely that the pressure of other work would prevent its being done a month or six weeks later. The potting material recommended for Carnations answers well for Phloxes.

Fruit.

There are sundry little operations which may be done now with advantage, such as labelling any trees requiring attention in that way, cutting shreds for nailing, or preparing matting for tying, as the case may be ; cutting and pointing stakes for newly-planted trees, preparing the necessary spring protection for wall trees, and repairing netting. The fruit room, too, may be overhauled, and all decayed Apples and Pears removed. Some of the latter that are specked are apt to become mouldy ; these should be wiped with a soft, dry cloth. Easter Beurré is very subject to this mould, and, to keep it sound, it requires to be thus wiped several times in the course of the winter. Josephine de Malines, Ne Plus Meuris, and Easter Beurré are our best Pears at this date.

Vegetables.

A hot-bed consisting of three parts leaves and one of stable litter should be made up for Potatoes, on which place frames, and plant the Potatoes at once in about 9 in. of light soil. Fenn's Early Market (round) and the old Ashleaf Kidney are the best kinds for the purpose. A similar frame should be put in requisition for Early Horn Carrot, and another for Lettuces, Radish, and Cauliflower. Asparagus shonld be introduced to the forcing pit every fortnight. The crowns now start readily into growth, and a great heat is therefore unnecessary. A bed of leaves only is the most desirable forcing medium, as stable litter taints the Asparagus, especially when that material is used without due preparation, and the same may be said in reference to Rhubarb. If the crowns of these be now covered with Rhubarb pots, old tubs, or barrels, and a bed of leaves made over them, there would be an abundant supply till it could be had from the open air. Seakale is best lifted and forced in any dark, warm situation ; a Mushroom house suits it well. It should be kept perfectly dark and not too warm, or it grows thin or weakly. It may also be forced the same as Rhubarb in the open ground, but preference should be given to the system of lifting it. To keep up the supply regularly, fresh roots should be put in fortnightly. French Beans are always prized, and where there is proper accommodation for growing them they can be produced in abundance without much trouble. They should be grown in light houses or pits where a temperature of 65° can be maintained. They are best in 8-in. pots, which should have free drainage, and the soil should be light, but made firm in the pots. A moist atmosphere is indispensable both for the well-being of the plants and to keep red spider at bay. Sow, to keep up the demand, at intervals of ten days or a fortnight. Syon House and Osborn are the two best kinds for pot culture ; stick them with Birch twigs before they begin to flower, and never let the Beans stay on the plants an hour after they are fit to gather. Tomatoes (autumn-sown plants or cuttings) will now begin to grow freely, and will require a warm, dry temperature of from 60° to 65° to set the fruit, after which they may be freely supplied with tepid guano water, of which if well drained they will take a liberal allowance. Pot culture and winter forcing of Tomatoes are not nearly so much practised as they ought to be. By many no forced vegetables are more valued, and from the present time onwards are more easily produced. Lettuces and Endive under protection must be kept as dry as possible, or they will soon decay ; Chicory and Dandelion help to eke out the Lettuces and Endive, and a few roots of these should be placed for forcing in the Mushroom house every two or three weeks. Mustard and Cress should be sown weekly.

WINTER COVERINGS FOR GLASS STRUCTURES.

A FREQUENT occurrence of severe winters would undoubtedly have the effect of inducing plant growers to adopt some efficient system of covering their glass structures in frosty weather. Not only do coverings, even when of a slight description, effect a considerable reduction in the coal bill, but their application renders it a more easy matter to maintain that moist, genial atmosphere so necessary to the well-being of many kinds of tender plants during the winter season. There is also a great advantage in being able to exclude frost during the early part of the winter season without having recourse to fire-heat, the application of which, even when the greatest care is exercised, is apt to exercise a stimulating effect upon plants which it is desired should fall into a state of complete rest before the advent of the shortest day. In Germany and Switzerland, where severe winters are the rule, a system of covering glass houses and frames with straw mats and boards prevails ; and those growers who may have unheated structures to deal with, and amateurs who find the constant watch for frost and the frequent lighting of fires and late night attendance rather irksome, might with great advantage adopt this method of covering. I fear that the owners of cold frames have often in the spring a pitiful tale to tell of plants destroyed or much injured, in most instances arising from want of efficient protection. In the first place, frames should be well protected at the sides ; to effect which as soon as the plants are housed drive in some stout stakes about 1 ft. from the brickwork and 9 in. apart. Nail on to the top of them a piece of inch stuff on another piece about half way up the stakes. Stuff the interstice with any Fern, ramming it down tightly and covering with a board, so as to shoot off heavy rains.

The Bracken being thus preserved in a dry state throughout the winter, there will be but little need to fear the most severe frost. Litter is often used for covering the glass, but its use generally entails a certain amount of breakage ; and then again it is sure to get dirty, in which case the glass becomes more or less smeared, and the inmates of the frame fail to get the amount of light necessary to maintain them in health. The Germans, even in their severe climate, do not hesitate to confide such tender subjects as the Cineraria to the protection of cold frames, and some of the best plants I ever saw were wintered in unheated structures, which had to resist continued nightly frosts of 30°. In the first place, neat straw mats are laid upon the glass, and these are covered with shutters some 4 ft. in width. To one side of each shutter is nailed a strip of board in such a manner that it overlaps the shutter placed next to it. In this manner not a drop of rain can penetrate, and snow is quite excluded, with the consequent effect of keeping the mats quite dry. In a general way only the boards are needed, as when the sides are well protected they will exclude 10° of frost. In very severe weather either the mats may be doubled, or litter of some kind may be placed on the boards. The advantages of this method are that there are but few days when the frames may not be uncovered, the coverings need not be put on so early, and the glass is preserved in a clean state. Houses are covered in much the same manner, only that a narrow board has to be placed in an upright position on the weather board to catch the covering boards, and another narrow board or piece of galvanised iron is fixed in such a manner to the ridge board, that the shutters just run up under it. These latter are, however, light boards, fitted in the same manner as described in the case of the frame shutters.

For small houses, where the roof comes near the ground, this method of covering would prove very useful, and small growers by adopting it would find themselves relieved of a considerable amount of labour and anxiety. Having had considerable experience in this system of covering, I can confidently recommend it, and feel certain that, especially in the case of frames, any one once adopting it would never willingly relinquish it. Having referred to straw mats, a few words as to their construction may not be out of place ; for although bass mats may be employed, they are not nearly so warm as those made of straw, and are in the long run more expensive. Take two stout pieces of quartering, about 1 ft. longer than the frame. Nail a stout piece of stuff, corresponding in width of the frame, in such a manner that a framework the same size as the sash is formed. One piece should be nailed, so as to come flush with the ends of the side pieces, this portion of the framework coming uppermost. Into these pieces drive stout nails 6 in. apart, and nail another slip of wood diagonally across the framework, which will keep all in place. The frame being thus formed, a strong cord has to be stretched from the nails at top to those at the bottom, and a stout short piece of stick with strong twine wound round it is fixed to each one. Then, taking about five straws in the left hand, lay them athwart the strings, the butt ends outwards, and passing the twine to the left of and round the cord in such a manner that the stick may be passed between them, thus forming a running loop which, being tightly drawn, fixes the straw firmly in place. Beginning at one end, fix the straw to one half of the cords in the manner described, and then with other straws, again placing the butt ends outwards, work through the remainder of the strings. By continuing in this manner a neat mat of uniform thickness will be formed which will keep out 10° frost, and which with care will last some years. There are other methods of manufacturing straw mats, but none so good as that here described. French growers largely use these *paillassons* and utilise wet days and severe frosty weather for making them. Rye straw is the best for the purpose, in default of which good hand-threshed wheat straw may be used. Never employ machine-threshed straw, as, owing to its being so broken, it absorbs and retains much moisture and soon wears out. When the mat is finished the sides must be trimmed, which is best effected by laying them between two stout pieces of board in such a manner that about an inch of straw projects, which may be neatly and easily trimmed off with a sharp knife. Those who can grow straw expressly for the purpose would do well to do so, as if cut just before it is ripe it is much tougher and consequently lasts much longer than when the grain is allowed to mature.

Byfleet. JOHN CORNHILL.

HARDY FLOWER GARDENING.

IF I understand a recent query aright, it is wished to maintain a series of flower beds in a gay effective condition from early spring till the end of July by the aid of hardy plants above, and this desired end it is proposed to attain either by means of such subjects as will bloom freely throughout that period, or by substituting for the spring flowering plants when their blooming season is past others which will flower during the early summer months. Now there are a few hardy flowers, such as the bedding Pansies and Violas, which bloom freely from early spring till late in summer, and if your correspondent merely wishes for a gay garden, these would sufficiently answer his purpose ; but I surmise that variety is sought for, in which case I should suggest a compromise, employing both spring flowering subjects and such as bloom at the desired time in summer, but planting them permanently, and rejecting altogether the double shift idea, which in the case of hardy plants involves the expenditure of much time and labour, and is not at all likely to be satisfactory, for all hardy subjects in order to give good results should have good

hold of the soil by April. In the first place I would advise that the centre portion of two beds be planted with early-flowering Clematis—one to consist of rubella, which, although of the Jackmani section, comes into flower by the middle or end of June and is rich claret purple, and Fortunei, creamy white, alternately. The Clematis should be planted alternately some 18 in. apart, and in the angles formed by them bulbs of Tulips and any of the early flowering varieties of the Gladiolus, such as Blondus, Colvilli, cardinalis, &c., might be planted, these of course to remain a fixture, for the annual top-dressing necessary for the Clematis wouldserve to maintain them in vigour; and these early-blooming Gladioli are much hardier than the late flowering kinds, and may be relied on to last and increase in vigour and beauty. Next to the Clematis might be planted a row of white and yellow Pansies alternately, such as Vestal and Golden Perfection, two excellent continuous free-flowering, effective kinds. The outer circle might consist of any pretty dwarf spring flower, such as the Gentianella, and Snowdrops might be freely dotted in here and there between it and the Pansies. The centre of another bed might consist of Clematis of the Florida type, such as Countess of Lonsdale, Lucie Lemoine, and John Gould Veitch, which bloom in June and July. Between these we would plant single Hyacinths of colours and Gladiolus ramosus and cardinalis, planting outside them a ring of Viola Blue Bell, and finishing off with Polyanthus and Crocus. With the exception of the Violas and Pansies, which would require to be fresh planted every autumn, these two arrangements would be permanent, and would render the beds gay from early spring till late in summer.

Hyacinths and Tulips.—These would come into bloom before the Clematis made sufficient growth to hide them, and they would be far on the road towards perfecting their foliage by the time that they became much shaded. The Clematis should be trained to sticks some 12 in. in length, inserted crosswise in the soil, and the training may easily be so conducted as to afford to the Gladioli the amount of light necessary to their well-being. Light-coloured Clematis and bright-tinted Gladioli make a fine contrast, and the latter get from the Clematis a certain amount of shelter and support, and do not become so much beaten about as when standing alone. I have seen some very pretty arrangements in this way, but I would not counsel the employment of the choice hybrid kinds, but only the more robust varieties, such as will stand without injury the vicissitudes of our English climate. One bed I would plant with double Pyrethrums, which flower so freely during May and June, and amongst them I would plant freely Daffodils, edging the bed with Aubrietia græca. It is a pity that your correspondent has so great an objection to the use of Lilies, as the early flowering kinds might be used with excellent effect. There is nothing, for instance, much better in the way of a floral display than a good bed of crimson China or Cramoisie Supérieure Roses, from which spring forth numerous flower-spikes of the old white or orange Lilies. The Roses afford some protection to the Lilies, and unless these latter are much exposed to the fury of the wind, they will when thus situated need but little support. In any case, however, the labour of staking is not very great, and the Lilies are so distinct and beautiful, that a little extra time bestowed upon them is not misspent. To obtain a true idea of their beauty, several bulbs should be planted together. This arrangement is one that needs no remodelling with each recurring year; a bed thus made will, if annually supplied with nutriment in sufficient quantity, last in unimpaired vigour for four or five seasons. Still, another combination might consist of

Hardy Annuals. Of these, such as Collinsia, Clarkia, Nemophila, Leptosiphon, &c., may be sown in autumn, as also English and Spanish Iris. The annuals would come finely into bloom during April, May, and on into June, and would be succeeded by the Iris, which would about fill out the required time. Such an arrangement as this would necessitate the yearly renewal of a portion of the plants, and the soil would have to be well stirred to admit of the annuals coming to perfection. These latter should be sown early in September and placed where they are to bloom by the latter end of October at the latest. J. C.

Aquatic for Small Pond (the Variable Arrowhead).—This very elegant Arrowhead (Sagittaria variabilis) is a native of North America. Some of the leaves of young plants are long and narrow without any lobes at the base, and in the lobed ones the divergent lobes are nearly of the same form and size as the terminal portion of the leaf. The leaves are from 6 in. to 12 in. long, according to the vigour of the plant, and the flowering scape from 1 ft. to 3 ft. high. Messrs. Henderson, of the Pine-apple Nurseries, have introduced and are cultivating this variety in small tanks and ponds in their nursery. A variety called gracilis is a miniature of the foregoing, usually about 1 ft. high, with exceedingly narrow leaves on relatively long stalks. For small ponds or tanks in Ferneries, greenhouses, or in the open air this

Various-leaved Arrowhead (Sagittaria variabilis).

plant is well worth securing, as, in addition to its pretty white flowers, its variably formed leaves are very interesting.

VEGETABLES.

Mushroom Culture.—Provided that the materials are at command, nothing can be simpler than Mushroom culture. The best and most lasting material is two-thirds horse droppings and one-third of light loam. The manure should be had fresh from the stable, be thrown together to heat, and the soil spread over and intermixed with it. Turn it over each day for a week to allow the obnoxious gases to escape, and the soil to get thoroughly incorporated with it. At the end of that time it may be formed into a bed, which should be as firm as possible by treading or beating as the work proceeds, and it should be at least 2 ft. in depth. Bottom-heat thermometers or test sticks should now be put into the manure, and when the heat has declined to 75° the bed may be spawned by dibbling into it, 2 in. deep and 9 in. apart, pieces of spawn the size of a bantam's egg; then beat down the surface and cover the whole with good light loam to a depth of 2 in. If, however, there be any danger of the bed re-heating above the 75° named, the soiling had better be deferred till that danger is past. The bed should now be covered up with a thin layer of straw or long litter, over which lay mats; and no watering will be requisite till the Mushrooms make their appearance. Provided the temperature of the house does not go lower than 45°, fire-heat should not be applied; should it get lower than that, employ slight fires, and neutralise their drying effect by occasionally damping the floors and walls. To prevent the depredations of woodlice, procure a couple of toads and encourage them to stay in their lodgings by furnishing them with a saucer of water at which they can drink. Under the above treatment Mushrooms should make their appearance in about six weeks; and if the weather be bright and drying, water may be required, but, as a rule, unless the bed seems very dry, it is best not to water till the Mushrooms appear. An arid atmosphere and over-watering of the beds are fatal errors in Mushroom culture.

A Cottager's Experience in Growing Potatoes.—"Burns" (p. 510) says my remarks on this subject in a previous number are misleading, and wishes for an explanation. I will give it as well as I can, but first I would say I was in the north on July 31, and I noticed how well the Potato tops looked when ours here were most of them black with the disease. My soil is light with gravel beneath; the situation cannot be better; it is in a field away from all houses, smoke, &c.; it lays high enough to keep all wet off except rain; still we had the disease very bad; the cultivator would have been clever if he could have prevented it. After the many years' experience that I have had in growing vegetables for exhibition, I do not think I must be put down as a novice; I think I know the benefits of changing seed and situation. To the two sorts I mentioned as a failure I ought to have added Fenn's Bountiful, which was equally as bad. Now, the situation where these grew had no Potatoes grown on it for at least six years. I followed the instructions given in GARDENING, January 31, 1880 (p. 739). The ground was thrown up rough until the time for planting, then it was forked over and the Potatoes put in the trenches and covered up, and was not walked upon until the crops came up. Now for the Roses. I must inform "Burns" and his neighbours that I have seven different sorts in good cultivation, and the following are a few of the varieties of other flowers that I grew last year: Asters, French and African Marigolds, Stocks, Carnations, Phloxes, Verbenias, Pansies, Coreopsis, Geraniums, Lilies, Everlastings, Heliotropes, Golden Feather, &c. The cause of our failure we attribute to the wet season with so much thunder and lightning. I say we, because a great many had the same painful experience as myself, professional, amateur, and cottager.—T. S.

The Law Relating to Greenhouses.—Your correspondent "G. W.," in GARDENING ILLUSTRATED (p. 533), appears to me to omit what is a material part of sec. 157, 38 and 39 Vic., cap. 55. The full section is "with respect to the structure of walls, foundations, roofs, and chimneys of new buildings for procuring stability and the prevention of fires and for purposes of health." Further, I do not see that it is at all clear that the buildings contemplated by the Act mean buildings intended for habitation. On the contrary, sec. 159 refers to the case of "conversion into a dwelling house of buildings not originally constructed for human habitation." It is possible that a careful examination of the Act might throw further light upon the subject. The two points I have referred to seem to me rather to point to the conclusion that a greenhouse as ordinarily constructed would be held to be a building within the meaning of the Act, and I think that this would only be reasonable when it is considered that the Act is intended to guard against the erection of buildings that might be a source of danger either from defective construction or from risk of fire.—P. G. C.

Substitute for Small Pots.—We have often read of thumb pots for plants. An egg shell is a very inexpensive one, and answers its purpose well; break one end a little larger than you do the other, making simply a small hole; then fill with earth, and if you wish to put plants in them, set in a box the height of the shell; fill the spaces with earth; the plants start splendidly, and can be taken out and handled very easily. As the shells are much lighter than pots, they are more desirable for

shipping; fill the space with moss or any light substance used for that purpose.—*American Paper.*

HEPATICAS.

THESE are among the most charming of spring flowers. They will grow in almost any position in the garden and they are admirably suited for growing in pots for the window or greenhouse. They are perfectly hardy, easily managed, and cheap, and if kept free from weeds and liberally supplied with water, so that plenty of foliage is formed, a fine head of bloom will be the result. The most suitable sorts are the single white, blue, and red, the double red and blue, and the well-known pale blue angulosa. It is the nature of the Hepatica to strike its roots down deeply; consequently plants of it seldom succeed in a shallow soil, and never in a dry, hot one. The hardest frost or the most searching cold does the plants no injury.

Propagating.—The way Hepaticas are chiefly increased is by division of the roots, and in this way they are readily propagated, and immediately after blooming, just when the plants are actively engaged in the production of leaves, is the best time for the operation. If well rooted, single eyes will make good plants by the following season, and they should be planted in a bed of deep and rather light loam, which should be in a position accessible only to the morning sun. Hepaticas are plants which will also repay the trouble of raising from seed, as thereby a great variety of colour is gained. The seed does not germinate till the following spring, but it should be sown when ripe. Turfy oam mixed about half-and-half with Cocoa-nut fibre is the best compost for sowing all such seed as will have to remain a long time in the pans; this compost does not become sour or consolidated. The pans may be placed in any cool frame or greenhouse, and the soil must be kept just moist. They should not be exposed to the sun, but should have a moist shady place so as to prevent the soil having to be often watered. Some growers recommend that the plants should be parted not oftener than once in three or four years, as frequent divisions are apt to weaken them and cause some to die.

In Pots.—Strong established plants of Hepaticas in pots will flower earlier than similar plants in the open border, and, at a time when all kinds of flowers are scarce, it is well to have some under glass, as they are thus kept from rain and frost, and preserve their freshness and beauty for a long time. When once established in 6-in. or 7-in. pots they should be occasionally top-dressed, but not too often re-potted; the greatest check, however, is given when a plant has so increased in size as to render division necessary. It is, in this case, best to divide sparingly, say into three or four divisions, and these, if re-potted at once, soon become re-established. Small plants should be potted into 3-in. pots, and in these they may remain the first year, plunged in ashes in a shady situation for the summer. The next year they may be shifted into pots a size larger, and so on until a size sufficiently large is reached. The Hepatica is closely related to the Anemone.

The great Hepatica (H. angulosa).

FRUIT.

CULTURE OF FIGS.

WANT of knowledge of the mode of bearing and habit of growth of the Fig has often ruined the prospects of a crop under orchard house or open wall culture. Forced with artificial heat, which enables us to extend its season of growth from January till the end of October, the shoots of the Fig may be pinched at every third or fourth joint three or four times during the season, and each pinching will ensure a crop of fruit; but the same practice applied to plants growing in cool houses or out-of-doors would be simply ruinous, as far as the fruit was concerned. Under the latter circumstances the first essential is a well-drained and not too ample border, composed of good garden soil or loam, to which may be added plenty of lime rubbish, the whole made tolerably firm, in fact hard. The Fig is one of the most vigorous rooting fruit trees we possess, and in this climate, if the roots are not more than usually kept in check, fruit cannot be expected. At the same time, we should prefer giving the trees a narrow and shallow border, to be filled with roots that will be allowed to remain undisturbed, to frequent root-pruning. The fruit of the Fig is exceedingly apt to drop if the trees experience any check, such as root-pruning is sure to produce, however carefully done; and the safest plan is not to reduce the number of the roots, but to place them in such circumstances that they are completly under control as regards feeding. The permanent fertility of a Fig tree so confined is perfectly surprising, and it is this fact upon which the

Pot Culture of the Fig is founded. We have seen plants, from which not more than one good crop was expected in the season, that had not been shifted for ten years, yet they bore well, being well fed. We turned one such plant out by breaking the pot, to which the roots adhered so that no tapping would disengage them, and found that the soil had almost disappeared, the pot being filled completely with a mass of roots, that had warped themselves round and round it till they threatened to rend it asunder. Yet the application of top-dressings, water, and occasional doses of liquid manure was all that was necessary to sustain the plants in health and to enable them to produce good crops of fruit annually. Such facts as these should be noted by those who attempt the cultivation of the Fig outdoors in this country.

In Orchard Houses the trees should be kept in roomy tubs or large pots, which should be plunged, but care should be taken that they do not root through the bottom into the border, which they are likely to do if they can find a hole or crack anywhere. The rapidity with which they will develop when once they escape in this way is marvellous, and will generally be indicated by barren shoots of corresponding vigour in the tree.

Borders for wall trees 12 ft. or 18 ft. in height need not exceed 6 ft. or 8 ft. in width, nor be deeper than 18 in. The bottom of the border should be of concrete or paved, or, at least, rammed so hard as to be impenetrable to roots; this is practicable if the sub-soil is somwhat strong and adhesive. Of course the sub-soil should be dry, and drained if necessary; but for a border of such moderate dimensions a regular bottom of drainage, as in Vine borders, is not necessary. A single row of 4-in. tiles along the front of the border will ensure the removal of all stagnant water readily enough. To prevent the roots from extending beyond the limits of the border, a 5-in. brick wall of the depth of the border should be carried along the front. This will effectually bar their progress, and is a better and more certain plan than chopping the roots off annually with the spade.

Pruning and Training.—Outdoors, or in orchard houses, only one crop of Figs is produced in the season, and the fruit is formed on the wood of the previous year near the points of the shoots; consequently, pruning must be conducted with the view to the equal distribution of the annual shoots, which must on no account be stopped, otherwise the embryo buds which form in the axils of the leaves, and attain the size of small Peas by autumn, will be forced to swell prematurely; and if they do survive the winter, it will only be to drop off the summer following. With standard bushes, therefore, the best plan is to allow the shoots to grow without stopping till the end of the season, only thinning them out in good time to admit the light to those which are left, that they may be well ripened. With wall or trellis-trained trees the same treatment applies, only that space may be saved by tying such shoots as are retained to the naked limbs about the middle and bottom of the trees. There are several methods of training Figs, but it is not of much

consequence whether the horizontal or fan system is adopted so long as a good supply of young bearing wood is laid in annually. We have seen wide and lofty fan-trained trees in which not a foot of space was left void of bearing shoots. The foliage of the Fig is so ample that there is much danger of crowding when the trees are trained against walls. The shoots should therefore be thinned out freely where they appear to be too thick, and they must not be tied in too closely during the growing season, but allowed to project from the wall, so that the points of the shoots may be exposed as much as possible to the light, as on the full development of the leaves near the top of the shoots depend the quantity and quality of the fruit. If summer pruning and training have been conducted properly, little or no pruning will be required in winter. It will only be necessary to tie the shoots in finally in as easy positions as practicable, giving the points liberty, that the young Figs may not be rubbed or squeezed when they begin to swell the following season.

Protecting, Watering, and Mulching.—When tying-in is finished the trees should be protected from frost by hanging mats, Fern, or Spruce branches over them. It will also be better if the border is protected from excessive wet during the winter. The shoots will not suffer if permanently matted up from November till March; but though the Fig does not begin to grow till May, or later in this country, the protecting material should be reduced or removed daily as soon as the sun's influence begins to be felt in spring. The border, also, especially when it gets well filled with roots, should be mulched, and during the summer water must be given in abundance when required. The Fig is a prodigious drinker, and the fruit is sure to drop at the critical stage if the trees are allowed to suffer from drought at the root.

Other culture during the bearing season consists in keeping the shoots regularly and thinly distributed, and exposing the fruit freely to the sun and air. To prolong the Fig season the custom is, as we before hinted, to force the trees and induce second and third crops by the systematic pinching of the shoots. But it is a question worth solving whether an equally long supply of fruit of much better quality could not be had by adopting orchard house treatment, the extention system of training, and by employing varieties that ripen their fruit in succession. For my own part I consider that the habit of the Fig tree and its mode of bearing point to the standard form of training as best adapted to it, and that it is undoubtedly the best way to grow it in orchard-houses, where, by adhering to the simple plan of thinning, but never shortening the shoots, heavy crops of fruit might be calculated upon to a certainty every year with such a sure bearer as the Fig tree.

S. W.

ANSWERS TO QUERIES.

3653.—Chinese Miniature Plants.—Lord Amherst in an account of his embassy to China, undertaken about a century ago, gives a description of the plan adopted by the Chinese to secure miniature fruit trees, which plan would, I suppose, be applicable to all other trees, plants, and shrubs. As far as I can remember, and briefly it is this: A suitable branch giving good promise of fruitfulness having been selected, a quantity of light soil is placed around its stem some little distance above its union with the parent trunk; this soil is kept in its place by means of a coating of clay, which is further secured by pieces of rag or other such material bound around it, and the whole is kept constantly moist. This induces roots to form from the stem of the branch into the soil, the branch of course in the meantime receiving its nutriment through the parent trunk in the same manner as the other branches not so treated. When the roots are sufficiently strong the branch is severed from the trunk just below its newly formed roots, the rag and the greater portion of the clay is removed, and the miniature tree is then potted, and has thenceforth to fare for itself. If this operation is commenced before the blossom has fallen, the branch will be ready for removal from the trunk before or about the time the fruit has ripened; and it is, I believe, claimed that the fruit will hang longer upon these rooted scions than upon the parent tree. It is some years since I read this description, and cannot just now give further details, but if desired I shall be happy to supply them after a reperusal of, or reference to, the book in question, which is now rather scarce.—A. J. KENT.

3932.—Gas Lime in the Garden.—This is in my opinion the most useful of any waste that can be applied to land. I have used it for several years and find it to answer remarkably well for any kind of soil. On light soil it eradicates all kind of insect pests, such as worms, slugs, &c., and on calcareous soils it assists the soil to produce much larger and better flavoured vegetables; whilst on cold, heavy, damp soils, the effect is much quicker produced than on any other soil, as its stimulating and forcing properties are equal to nitrate of soda. Beside its calcareous qualities, the ammonia, or volatile alkali, is a substance which quickly neutralises and enriches the soil; it is, therefore, as good a fertiliser as I know of. By the way I will remark, that if anyone wishing to make the experiment, get a quantity of gas-lime fresh from the purifers, and let it lay together protected from the wet, so as to allow the ammonia to concentrate together. After laying together for a time, lumps of ammonia will be found, so that it will at once show the qualities and properties of gas-lime. No one need be afraid to use gas-lime in a garden where they want to grow really good vegetables or root crops, but I must say that it should not be put on ground near the roots of trees, say not within 4 ft. of the stem. The plan I adopt is to dig over the ground, and then spread over the surface as much as will cover the ground. Another plan I adopt is to get a few loads of lime, bottoms from the tanyards, and about the same quantity of gas-lime, and mix up all the weeds and rubbish from the garden. After laying together for some few months, turn it over and mix well together, and then it will be found to be quite harmless if put on ground to any crop. I have used it on Grass land, and find it to answer satisfactorily, but I would caution anyone against sowing seeds for a few weeks after putting fresh gas-lime on the ground; but the mixed heap may be used as advised, and the seeds sown at once. November would be the best time to use the lime in the raw state. Fork over the ground in the spring to mix the lime and soil together. I am sorry that our "Sufferer" should have given such painful experience of it, but I hope he will give it another trial before he discards it altogether, as I have never found it fail as a fertiliser and as a destroyer of vermin.—T. LOWE, *Penketh*.

3976.—Building a Greenhouse.—The cost approximately of a house such as "C. C." intends building would be as follows:

	£	s.	d.
Bricks, hauling, and mortar	1	10	0
Wall plates, 44 ft., say 10 in. by 2 in., at 5d. per foot run	0	18	4
Ten uprights, 1 ft. 4 in. each, 3 in. by 3 in., at 2d. per foot run	0	2	3
Ten rafters, 5 ft. each, 3 in. by 1½ in., at 1½d. per foot run	0	6	3
Ridge, 15 ft., 3 in. by 1½ in., at 1½d. per foot run	0	1	10½
Sides, each 15 ft., 3 in. by 1½ in. 30 ft., at 1½d. per foot run	0	3	9
Two door posts, 7 ft. each, 3 in. by 3 in., at 2½d. per foot run	0	2	1
Two cross bars, 9 ft. each, 3 in. by 1½ in., at 1½d. per foot run	0	2	3
Twenty-four sash bars, 5 ft. each, 3 in. by 1 in., at ½d. per foot run	0	5	0
Glass, say 206 sq. ft., 15 oz., at 2d. per square foot	1	14	4
Putty, say 30 lb. at 1d. per lb.	0	2	6
Paint, two coats, 15 lb. at 4½d. per lb.	0	5	7½
Door	0	10	0
Total	6	5	1

"C. C." does not say whether he intends having wood stages or brick pits. If the latter, he will have to add to the cost of the bricks for the sides and pathway. If he is well situated for obtaining these, he may possibly lessen the cost materially in this item, as I had to pay considerably for the hauling. I bought my wood somewhat cheaper than I have stated here, and so perhaps may "C. C." It can be bought at the yard planed and sawn by machinery of the particular thicknesses indicated, and I would advise him to buy it this way and cut it to the lengths wanted. Sawing and planing by hand take up a great deal of time, which might be more advantageously employed, and seldom looks so well. To strengthen my house I got a smith to make some angle pieces of iron, 1 in. by ⅛ in., which I screwed to the rafters and uprights at the eaves, and also cross pieces 1 ft. long to brace the rafters together at the apex of the roof. These can be had, by ordering from a smith, at 6d. each, and tend to give greater strength. The corners I mortised and braced with angle irons. The door being a very troublesome part to make, "C. C." may be able to buy an old one, as I did, and, and by taking out the top panels, have a very respectable looking article at very little cost. The spaces between the sash bars sometimes vary a little in width, and he will find it best to buy the glass and glaze one sash at a time, unless great care is taken to keep the various widths distinct. The eighth of an inch makes a great difference in regard to the firmness of the glazing, as I found by experience. It would be better to glaze with as few laps as possible, and I would advise, merely for the sake of handiness, to have two lengths of glass in the roof only, which would make one lap each bar, because, even with the greatest care, it is difficult to get them air tight, and being for Cucumbers, where all the heat ought to be conserved, this is the more necessary. The sides, being only 16 in., of course can easily be put in without having a lap. The upper panes on the roof will require support with tacks, until the putty gets sufficiently hard, and the rabbeting ought to be done by the plane, and not pieces nailed on, as the width of the bars, 1 in., is sufficient to allow this, besides admitting more light, which is of the greatest importance.—G. S. C.

3922 & 3931.—Gravel for Walks.—I have been in the same difficulty as you are. I have used asphalte for some walks, black cinders for others, and red cinders for others. Asphalte makes a clean, dry walk, and when properly laid and mixed with gravel it is lasting, but not very sightly. All kinds of cinders, broken sandstone, broken bricks, or burnt clay are sloppy and pasty in wet weather, and lifts in the frost. If near London I cannot think of anything so good as the finer flint gravel, which will set well and gives a charming colour against grass. There are gravel beds which produce another kind similar in colour, but angular; this also sets well. In my difficulty I got a small cargo from Jersey, which can be delivered in any place near a seaport for say 12s. to 15s. a ton, and this is beautiful it will set for a carriage drive and become as hard as asphalte, while the rich brown colour contrasts well with the lawn. My impression is this is equal to anything, and better than most things which can be obtained. I expect that it could be obtained cheaper than this near London, where it is used for park drives, &c.—G.

3961.—Scale on Vines.—I am strongly against the practice of using paraffin on Vines, as a few years ago I saw the evil effects of using it. It was used with Gishurst. If you have used Gishurst alone and have found it has failed, try the Soluble Fir Tree Oil Insecticide, sold by all seedsmen, but care must be taken in mixing it—about ½ pint of oil to 6 quarts of lukewarm soft water. Apply this to the Vines with a paint-brush, and you will have little trouble in the future. Take care never to allow any plants to remain in the house affected with scale.—T. LOWE, *Penketh*.

3971.—Melons and Figs.—I would not attempt to grow Melons in such a structure, as they require more heat than would suit the other plants. But you might try a few plants of Melon Munro's Little Heath in 12-in. pots, trained to a flat or conical-shaped trellis. Figs would answer well on the end or back wall of a greenhouse, but not on the top of the house. They require assistance during the growing season in the shape of manure water, and occasional stopping of the shoots to induce them to form their fruit more perfectly.—THOS. LOWE, *Penketh*.

3831.—Holly for Walking-sticks.—Cut any time during winter, and after removing the bark put them to dry gradually. When dry round off the knots with a knife, and rub down smooth with sand-paper. To stain a dark yellow, rub them over with nitric acid, and hold to the fire. Lighter shades may be given by diluting the acid more or less with water. To stain them black, treat in the same way with sulphuric acid. Polish by repeated rubbings

with linseed oil, or give two coats of varnish, and when dry polish with powdered pumice-stone and afterwards with whitening. — J. MARTIN.

4006.—**Lilies in Towns.**—The following kinds, or any of them, would be suitable for growing in towns Lilium Browni, candidum, croceum (the Orange Lily), chalcedonicum, elegans, speciosum album, s. rubrum, s. roseum, the Tiger Lily, and well-known auratum. The above will make a good collection, and one worthy of cultivation, and any one of them will make good strong plants and thrive in a town, planted in good, rich soil, about 9 in. deep.—THOS. LOWE, *Penketh*

4007.—**Pond Leaking.**—First well damp and ram the bottom; then place evenly over it 6 in. of quicklime, then 6 in. of clay, to be well puddled and tightly rammed. Upon this rough stones or gravel may be placed. Without the lime worms work through.—W. H.

3952.—**Garden on Unused Well.**—Finding no one else has done so, I earnestly request "E F." to cover his unused well with a stone slab. I heard recently of a fatal accident caused by the boards on the top of an unsuspected well under garden soil giving way.—A COUNTRY DRUGGIST.

4027.—**Cyclamen Leaves Shrivelled.**—*Ferndale.*—The leaf appears to have dried up from want of water. Cyclamens in windows want plenty of air and very strict attention to watering, cleansing, &c.; indeed, unless under very favourable circumstances, Cyclamens are not suitable plants for windows.

4028.—*T. Jones.*—Brown's "Forester" is the most likely book to suit you, but it is expensive, viz, 31s. 6d. Most works on gardening may be had at our office.

4029.—**Charcoal.**—Is animal, vegetable, or mineral charcoal best for gardening purposes?— DUNEDIN. [Vegetable.]

4030.—*Subscriber, Guernsey.*—If you will send us flowers and leaves of the plant you wish to know the name of we will give you all the information you require respecting it, but we cannot give advice on the culture of an unknown plant.

4031.—**Heating Greenhouses.**—I have three small greenhouses, altogether heated with 374 ft. of 3-in. pipes; the boiler is a conical one (No. 1 C). I find it most extravagant, in seven days burning five sacks of coke and two sacks of small coal, value 7s. 6d. Can you tell me of a more economical apparatus? and the cost of same?—O. C., *Wimbledon.* [The various forms of saddle boilers are, generally speaking, more economical than the upright ones, inasmuch as if properly set they will burn up all ashes and other inferior kinds of fuel. Much, however, may be saved with your present boiler by judicious stoking. In the first place the coke should be reduced to pieces about the size of hen's eggs, and kept well wetted. In the second place, when you have a good fire established and a good heat in the pipes leave only enough draught under the furnace to insure a steady combustion. A fire thus treated will last for many hours without attention, and will retain a good heat in the pipes. We would advise you to try your hand at economical stoking before changing your boiler. But, after all, we do not think that the length of piping you have can be efficiently heated in winter with very much under 7s. 6d. per week.]

4032.—**Soil Shrinking from the Pots.**—In my greenhouse, which is heated by a flue, there is a tendency for the mould in the pots (of all sizes) to shrink away from the sides of the pots, and consequently when they are watered the water runs rapidly away between the earth and side of the pot. Can you assist me to prevent this, and suggest what is the cause?—C. C. [You potted the plants in new pots without soaking them. All new pots should be soaked in water at least six hours before being used. Those plants you have in pots now may be soaked in a bucket of water for half-an-hour each time they become dry till the pots get well soaked.]

4033.—**Index to Gardening.**—*Query.*—A complete index to the second volume will be issued at the end of February, when the volume is completed. Index to Vol. I. may be had from the office, by post 1½d., or through newsagents 1d. each.

4034.—**Removing Old Asparagus Roots.**—Some land forming part of a garden, being likely to be required in the course of next summer for building purposes, will you kindly inform me whether it would be worth while to remove all or any of the plants from some Asparagus beds in good bearing which were planted about ten years ago? and if so, when would be the best time for, and what would be the best way of carrying out the job?—RUS IN URBE. [We would lift the plants with a fork and place them at once in a frame on a bed of leaves and manure, and get a crop from them in March; afterwards throw them away. They are not worth planting again.]

4035.—**Cutting down Pentstemons.**—I have several Penstemons in my garden which are now as fresh and green as they were in July. Should they be left as they are or cut down?—J. S. M.; [Leave them till March, and then cut them down.]

4036.—**Salt as a Fertiliser.**—I think there must be a mistake with the figures in answer to the above query (3925); it says 6 cwt. of salt per acre is about 1 lb. per rod; the way I have reckoned it I find it is 4 and one-fifth lb. per rod.—T. BOX. [T. Box is quite right in his correction; the words should have been "about 4 lb to the rod;" the mistake was quite inadvertent.—A. D.]

4037.—**Turfy Loam.**—Does turfy loam mean sods cut from a lawn or grass plot in which the Grass has died? and what is the quickest way of killing the grass in sods, so as to make it useful for the garden?—R. H. D. [The quickest way to prepare turfy loam is to cut the sods in autumn and build them grass-side downwards in a large square heap. By the following spring the heap may be chopped down and the soil used, or if left for another year it will be none the worse.]

4038.—**Tobacco Smoke and Ferns.**—*Young Beginner.*—Fumigating Ferns with Tobacco smoke requires great care, as the fronds soon scorch. It should be done lightly for several nights in succession.

4039.—**Sulphur and Mushrooms.**—*Young Beginner.*—The fumes of sulphur would certainly not improve a crop of Mushrooms. With what aim do you apply the sulphur?

4040.—**Strawberry Plants for Forcing.**—*Young Beginner.*—Put them in the greenhouse at once on a shelf near the glass.

4041.—**Maiden-hair Ferns in Rooms.**—Will you tell me how to keep Maiden-hair Fern in a sitting-room? I have tried it several times and the fronds wither away; it has always been taken out of a stove house.—SUBSCRIBER. [Grow them in a cooler temperature, and do not put them in the room till the fronds are full grown. If gas is burnt in the room it is fatal to Ferns.]

4042.—**Hyacinths in Glasses.**—*Hyssop.*—The water should be renewed sometimes. A few bits of charcoal will keep it sweet for some time.

4043.—**Syringing with Soot Water.**—Will it injure plants to syringe them with water in which soot has been soaked to make manure water? it is perfectly clear.—INQUIRER. [It will make the foliage dirty and do no good. Use clean soft water.]

4044.—**Pruning Yew Hedge.**—I have a Yew hedge which has grown out at the top, but is thin and bare below. If I cut it thoroughly in at the top, will it put out and grow thick below?—HYSSOP. [Yes; or if you could bend down the shoots to the bottom it would answer the same purpose. Do it in March or April.]

4045.—**Planting Old Onions.**—Will some Onions left growing from a crop planted last spring grow to any size if planted out this spring like August sown ones for extra large size?—R. H. D. [No; they will run to seed directly.]

4046.—**Cropping after Celery.**—Which will be the best crop to plant on ground from which Celery has just been dug—Beet or Parsnips?—R. H. D. [Either of these crops will do equally well. Peas will also do well on such land.]

4047.—**Potting Ferns.**—When will be the best time to pot seedling Ferns at present growing on the walls of the greenhouse? and when should Ferns be repotted?—R. H. D. [In March or April.]

4048.—**Petunia Cuttings.**—*F. Wood.*—Unless you have a bottom-heat bed you had better wait till spring. The plants will flower in early summer if well grown.

4049.—**Christmas Roses.**—*A. B.*—Plants of the large-flowered Christmas Rose were advertised in our columns in autumn. They may be had from most good nurseries.

4050.—**Paint on Greenhouse Glass.**—*Greenhouse.*—We presume the glass was painted in summer to afford shade, a most unwise proceeding. A little whitening and milk would have answered the purpose better, and could have been easily removed. You must get all the paint off your glass to admit light to the plants if you wish them to thrive.

4051.—**Origin of Rhubarb.**—Can you inform me what class and family the Rhubarb belongs to? Is it a fruit or vegetable? and where did it originate?—T. W. [Rheum rhapodicum is the botanical name of the Rhubarb used for culinary purposes. It belongs to the genus Polygonaceæ. It is a native of Central Asia, and has been grown in this country since the fifteenth century. The leaves of Rhubarb were formerly used as a substitute for Spinach, to which they were considered superior. Mr. Myatt, of Deptford, was the first to bring Rhubarb as it is now used into prominence in the market, and it is now grown by the acre in most market gardens. It is a vegetable.]

4052.—**Planting Anemones, &c.**—How should I manage as regards aspect, time of planting out, and distance apart, with some seedling plants of Anemones, Geums, and Lychnis chalcedonica? Also, may I count upon their flowering next summer? The seed was sown last July.—AMATEUR. [They should have been planted in autumn, but may be planted now if the weather is open. The Anemones will probably not flower till next year; the others may.]

4053.—**Fixing Hot-water Pipes.**—*Circulation.*—The greater fall you can get the better the circulation. A fall of 4 in. in 40 ft. would do, provided the top of the boiler was 1 ft. or more lower than the pipes where they enter the house. We should have a greater fall than this if possible.

4054.—**Transplanting Hollies.**—*R. G. M.*—April will be the best time.

4055.—**Propagating Variegated Hollies.**—*R. G. M.*—These do not strike freely from cuttings. They are usually grafted on stocks of the common kinds.

4056.—**Grafting Plums.**—Can a Plum be grafted on Bullace trees with success? [Yes, if properly done.]

4057.—**Double Convolvulus.**—*E.*—From any good nursery or seed house.

Names of Plants.—*Ignoramus.*—The Winter Heliotrope (Tussilago fragrans).——*W.*—Abutilon vexillarium; plant it out in sandy soil in a greenhouse, or grow it in pots in the form of standards.——*Dorking.*—Polytrichum commune.——*J. L.*—1, too small to name; 3, Cassia sophora; 4, Euonymus europæus; 4, Stachys lanata.

QUERIES.

4058.—**Azaleas Dying.**—I have a lean-to conservatory which faces the east, and I get rather more sun than I want in summer, and even in winter I get an hour or two when there is any sunshine. It is heated by hot-water pipes, and the winter temperature may we set down as 44° to 50° when the sun shines in winter, and the temperature is easily run up to 65°. I give plenty of air on every opportunity. I grow very satisfactory Pelargoniums, Fuchsias, Cacti, Primula, and many kinds of Fern. But I can't grow Azaleas, and I want to know why. I buy nice plants set with flower-buds. They flower; then when done in spring I put them out in a shady place after a little time. I pot them into one size larger pot, using peat and sand. In October they come indoors, and look beautifully set with buds, and so they remain till spring, and I seldom get a bloom. In some years they do give me a few flowers, and then the leaves all turn yellow, drop off, and the plant dies. I never yet had one which lived more than two years. A hint on this point will be taken as a great favour. The success I have with other things leads me to hope that I may yet grow an Azalea. Again, I can't get Cyclamens to flower; I suppose my place is not hot enough; if it were hotter, however, it would start my fancy and large-flowered Pelargoniums, and ruin them.—PERPLEXITY, *Streatham.*

4059.—**Liquid Manure.**—I shall be much obliged to any one who will advise a lady as to the best and most convenient kind of liquid manure to use in her greenhouse and flower garden.—T.

4060.—**Ampelopsis Veitchi.**—I have two plants of this, one in a cool greenhouse, the other out-of-doors. The one in the greenhouse clings pertinaciously to the wall, and cannot be detached without breaking, except by the aid of a thin-bladed knife. The out-door one does not cling at all, but has to be nailed while growing. Why this difference?—M. L. B.

4061.—**Fruit Trees on Clayey Soil.**—I have a wall in my garden, Tottenham, about 16 ft. high and about 60 ft. long, and wish to train thereon two Pear trees, one Plum tree, and a Grape Vine. I also wish to plant some Raspberry canes. What are the best varieties and the best fruit producers? When ought the trees to be planted? The soil is clayey.—H. J. W.

4062.—**How to Fix a Coil Boiler to a Slow Combustion Stove.**—I have the stove named in my greenhouse, and if it is possible I wish to fix a boiler with pipes; if it is possible, would any one be so kind as to give me the necessary instructions.—W. G. C.

4063.—**Berried Iris.**—I have had some berries given me which are said to be berries of the Gladwin Iris. Will any one kindly inform me whether I can raise plants from them? I have no greenhouse, but have frames in which they could be raised in heat. What treatment would the berries and the plants, if raised, require?—GEM.

4064.—**Cutting Back Vines.**—I have just taken to a greenhouse in which are four Vines; my predecessor dressed them with a solution of soft soap, soot, sulphur, and paraffin oil, and the Vines, which were about six years old, were killed down to the holes of the brickwork. They have shot out from the brickwork strong rods about 14 ft. long; two of the Vines have made three such rods, one of them two rods, two others four each, and one made six. Should these be left, or how many should be cut off, and how far the rest cut back? I want as many Grapes as I can get. Is 50° too high a night temperature? My house is heated by a brick flue. If there are too many rods to be left, can I strike them in pots?—J. FREER, *Kettering.*

4065.—**Grafting Old Fruit Trees.**—I shall be glad if some one will give me a few practical hints on this subject.—J. T.

4066.—**Mounting Ferns.**—I am desirous of forming a herbarium of Fern fronds, and should be glad to know what is the best kind of paper for the book, and the best way of fastening the fronds in it. I believe there is a special kind of paper which preserves the colour pretty well usually used for this kind of thing, and should be glad to know where I can get it.—E. T. B.

4067.—**Liliastrum (Anthericum).**—I have been much puzzled as to how this grand old hardy herbaceous plant gets its name, my botanical work (Grindon) describing it "with star-like flowers." Failing to find any such similarity in the handsome snow-white flowers, I had lately occasion to take some plants out of the ground, and to my surprise I found each separate root as star-like in shape as the starfish so commonly to be found on our seashores. Can any of your readers enlighten me as to the derivation of the name, if it does not come from the shape of the root? I may add that this plant grown under glass (not forced) is an admirable addition to the conservatory, and worth any care and cultivation there or in the garden.—FLORENCE.

4068.—**Vines in Cool House.**—Perhaps some one will give me information on the following question: About two years ago I planted a Gros Colmar Vine in a cool Vinery, and although it has borne several bunches this year, they have not ripened well, nor have they grown out well, and I am told that the Vine ought to have been planted in a hot Vinery. What I want to know is, whether it would answer to graft a Black Hamburgh on to the Gros Colmar stock, and the Gros Colmar on to a Black Hamburgh stock in my forcing house. My object, of course, is to save time.—G. M.

4069.—**Warming and Ventilating.**—Will some one give their experience as to the best and most economical means of heating and ventilating greenhouses where smoke is objected to? Hot water heated by gas is said to be a failure, besides being very expensive; and oil stoves do not give the pleasant atmosphere which one feels when the house is heated by hot-water pipes.—G. S. C.

4070.—**Worms in Pots.**—Can any reader of GARDENING tell me how to get these out of a pot containing a Tree Fern? I want to fresh pot the plant, but should like to get rid of the worms first, as the plant is too large to have all the mould shaken away. It is in a No. 1 pot.—H. R., *Walton.*

4071.—**Iris anglica.**—I have a few bulbs of this. I should like to know if they are quite hardy; if they should be taken up every year; if I should plant them now or wait till spring.—J. S.

4072.—**Cineraria Leaves Curling.**—Will any reader tell me the cause of Cineraria leaves curling? mine are just showing bloom, and the leaves are all beginning to curl.—YOUNG BEGINNER.

4073.—**To Renovate Garden Paths.**—Will some one inform me the best method of making a good path for kitchen garden by mixing coal ashes with the gravle

already laid down? and also if this will prevent Dandelions and other obnoxious weeds from growing in the walks?—C. M. F.

4074.—**Garden on the Clay.**—I have a small garden which is on the clay, and after I get 1 ft. below the surface the clay is very close. I have been thinking that if I dug in some coal ashes sifted fine, and also a little lime rubbish, it would much improve it, and also to mix coal ashes, lime rubbish, and the earth from worm casts, of which there is plenty Would it make a good compost for striking cuttings in, and for seeds in pots, of course taking care to have plenty of drainage material at the bottom of the pot? A few of my plants and shrubs seem to thrive, but many others seem to make but little progress.—G. R.

4075.—**Pruning Clematis.**—I have a young Clematis, C. Lawsoniana. It grew about 10 ft. high the last season, but the frost came before the bloom opened and cut it down to 4 ft.; what is the proper way to prune t?—LEEK.

4076.—**Tropæoum speciosum**—Where can I procure tubers or seed of Tropæolum speciosum? I have seen a gentleman's lodge covered with it in a colder climate than this. If I procure them, how am I to treat them for growing out-of-doors?—LEEK.

4077.—**Heating by Steam.**—I have a small greentouse, 12 ft. by 9 ft., which I have tried without success to heat with paraffin stoves. I could have steam brought from a large mill boiler, but the distance for it to travel will be 200 yds. What sized pipes should be in the greenhouse? and how many times should they be placed round it? also what distance ought they to be from the shelves? I should like the temperature to keep at 45° in the frosty weather.—SILVER STORK.

4078.—**Fruit Trees for Monmouthshire.**—Will any reader tell me what Apples, Pears, and Cherry trees are likely to do well in the neighbourhood of Trelleck, Monmouthshire, which is about 600 ft. about sea level? Will Vines, Raspberries, and Strawberries succeed there?—DEVAUDON.

4079.—**Hoof Parings.**—Are parings of horse-hoofs (to be obtained at a farrier's) any good for manuring Grape Vines? if so, what quantity for each Vine?—H.E.M.

4080.—**Treatment of Muscat of Alexandria to bear Late Grapes.**—I have a Vinery containing six plants of the above Grapes; my object is to have them fit for market in November and December. This year the Grapes were small, and began to shrivel about November; they mostly looked green instead of golden. The Vines are about to be pruned and dressed. There is long litter on the outside border at present; about March I propose making up the border with ½-in. bones and rotten manure. The roots are outside. The house is heated with a brick flue. Aspect south, but in a cold, low situation in North Yorkshire. The border seems well drained. At present there are cuttings in the house to benefit by the fire we keep in cold and damp weather. Will they do the Vines any harm?—SCRUTON.

AQUARIA.

MY FOUNTAIN.

A CORRESPONDENT has recently, in No. 90, narrated how he made a miniature fountain suitable for an aquarium or Fern case. His method is very feasible, but perhaps it will not be superfluous if I also inform your readers as to the construction of a larger fountain in an equally simple manner.

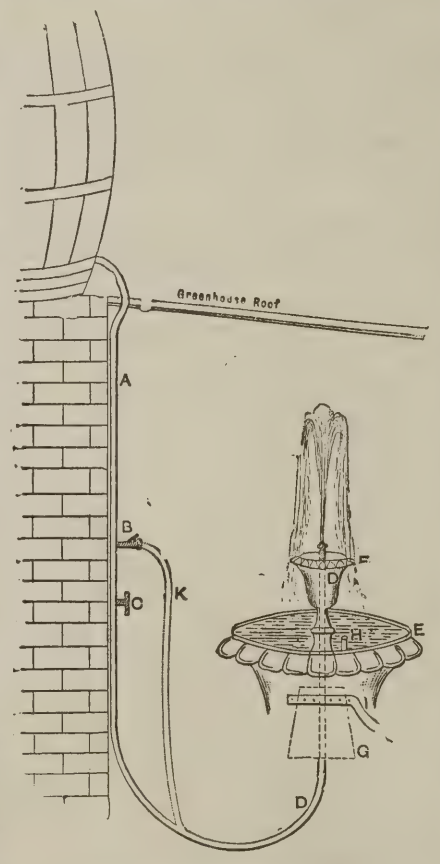
Outside the house I have a large butt supplied from the main, and containing about 200 gallons of water, which is devoted to garden purposes. In the garden below there is a lean-to greenhouse with rockwork running round two sides. In the corner on this rockwork is my fountain. If the annexed drawing be examined, the reader will see the position of the fountain in relation to the supply. A is a 1-in. leaden pipe descending to the tap B, where the garden hose is attached when required. D is a piece of leaden pipe through the basin. This may be connected with B by india-rubber tubing, as at K, so as to take off and on in the same manner as the hose, or may be bodily joined to A beneath the tap. There is no difference in either with regard to the force of water, but the latter will not leak and is more sightly. In this case, however, a second tap C will be required.

Having got thus far, a basin was wanted. This was found in an old garden vase or urn E of the ordinary pattern, but with the foot broken off. It measured about 18 in. across, inside measure, and had a hole in the bottom. I placed it in the desired position, about 9 ft. 6 in. below the butt, and in the centre put a flower-pot G to serve as a stand for another vase F about 8 in. across. Through all this the pipe was carried and a small jet screwed on to the top. Then the basin having been levelled, and all holes, &c., stopped with Portland cement, the water was turned on and falling into F gradually overflowed and filled E below.

So far the fountain is complete. But the overflow must be considered, as if the surplus water runs over the edge on to the earth around, it tends to make it sour. Therefore, before the cement is used provide a leaden pipe for the waste (not too small, or it will get choked), carry it through the bottom of the basin, the end H being just below the level of the water, and bring it up again outside, as at I at a still lower level. Pierce the last 6 in. with holes and bend it horizontally, the end being stopped.

Below this I made a little watercourse with burrs down the face of the rockwork, and the water running down fell into a hollow in the ground coated with cement, whence it escaped into the garden.

People have so frequently a separate supply of water for garden purposes, that the chief requisite is at once provided, but where this is not present a fifty or sixty gallon tank can be elevated about 10 ft., and will be amply sufficient for a corner in a small garden. All that follows is easy and can be done by oneself. Of course a little money must be expended, but



Fountain for Greenhouse or Aquarium.

some ingenuity and adaptability to circumstances will effect wonders.

As it is, I have a pretty little corner in my greenhouse with Ferns round the fountain, and a jet which will rise to 10 ft. or 12 ft. in the air, with gold fish in the water, and with the overflow trickling down a little waterfall, which is spanned by a miniature bridge about 1 ft. in length. Add to all this that I have moreover the gratification of having done it myself, from the basin to the bridge. "Go thou and do likewise." JET D'EAU.

BEES.

Feeding Bees.—The last week in July I had two hives showing symptoms to swarm. I placed a nadir under each of them. In September I drove the bees from the top hive into the nadir of hive No. 1, and in a few days after I did the same with No. 2, but to my surprise I found the bees had not built any comb in the nadir; so I examined No. 1, and found the bees had only just began to build, so I united them and set to work to feed them. I gave them 12 lb. of best lump sugar made into syrup, and I also gave them a lot of comb to clean. In the last week in October I covered them down for the winter. But they are at work nearly every day, almost as numerous as a fair strong hive in summer. Is it for want that they are out so? and must I feed?—D. R.

GARDENING
ILLUSTRATED.

VOL. II.—No. 98. *SATURDAY, JANUARY* 22, 1881. PRICE ONE PENNY.
REGISTERED FOR TRANSMISSION ABROAD.

WATER PLANTS IN GLASSHOUSES.

AN expensive structure for growing the Victoria Lily cannot be erected in every garden, but everyone who possesses a plant-stove, greenhouse, or conservatory, may, with but little trouble or cost, devote some portion of it to the cultivation of the more beautiful water plants. The introduction of a slate tank into the plant-stove occasions but little extra trouble and expense, while it may be made one of the most interesting features in the house; or one side of the side-benches might be covered with several of these shallow tanks placed side by side. Their size will vary according to the width of the staging, but from 3 ft. to 4 ft. square, and 1 ft. or 15 in. deep, will, in most cases, be amply sufficient. These portable tanks are in many cases preferable to permanent erections, as, during the winter months, they can be removed and stored away in any dry shed until required for the next season, or the water they contain may be emptied out and plants in pots can then be set inside in the usual way. In tanks like those above described, a great variety of aquatics can be grown that will not be less interesting than more common plants. Among the commoner aquatic plants there are some which should be in every garden, as the Aponogetons, their forked sprays of silvery bracts being most valuable for cutting. Vallisneria spiralis is always interesting as a microscopic object, and some of the smaller tropical Water Lilies grown in tanks like those above described unfold their pure white, bright rose, or cœrulean-blue flowers as freely as those of our native ponds and streams. A little good sandy loam is the best compost in which to plant the stronger-growing kinds, while some of the smaller Pistias and Pontederias will float on the surface. These tanks are valuable for assisting the growth of other plants as well as aquatics; for example, Palms grow far more vigorously during the hot summer months if the bases of their pots are sunk about 2 in. into the water. Callas grow far more robustly and flower better if the pots are plunged overhead in the water, and if they are sunk deep enough, say, from 2 ft. to 3 ft., the plant will withstand our climate all the year round. Aponogeton distachyon may either be set in a dwelling-room window, planted in a little earth at the bottom of an inverted bell-glass, or it will grow vigorously in a shallow tank in the open air, where it seldom fails to flower freely throughout the spring and summer months.

WATER PLANTS IN STOVES AND GREENHOUSES

A. monostachyon bears pretty pink blossoms on its undivided spikes. It is smaller in habit than the last, but requires the warm humid temperature of the stove aquarium. Umbrella Sedge of Madagascar (Cyperus alternifolius), grown in a pot in ordinary compost, makes pretty little plants 1 ft. to 2 ft. high, and well adapted for ordinary decorative purposes; but, if planted in a pot of rich soil and partly plunged in the tank, it often produces large growths 5 ft. or 6 ft. in height. There is also a pretty variegated form very valuable for decorative purposes, although it is apt to revert to its normal green state. If the plant is grown in very poor soil, with at least one-half of sand, it comes beautifully coloured, each leaf being striped with pure white. This plant is always useful, especially for table decoration and for grouping along with choice flowers in the drawing-room vases. Its foliage radiates in a gracefully drooping manner from the apex of the slender stems, and is distinct from any other decorative plant. Limnocharis Humboldti bears beautiful, clear, soft yellow flowers among its floating foliage. The general port of the plant is similar to that of Aponogeton distachyon, but its leaves are heart-shaped, and the plant is sufficiently hardy to stand out-of-doors in sheltered tanks during the hottest portion of the year only. Nymphæa cœrulea is a plant, with bright green foliage and light blue flowers, both of which float gracefully on the surface of the water. N. pygmæa is a charming companion to it, and might be grown in an inverted bell-glass. It has heart-shaped leaves and pearly-white flowers. Nelumbium speciosum, the well-known "Sacred Bean" of Egypt, is best treated as a sub-aquatic, or it can be grown in a tub half filled with good sandy loam, covered with about 12 in. of water, so as to keep the roots in a consistent state of moisture. It is easily propagated from seeds sown directly after Christmas. Common Water Lettuce (Pistia stratiotes) is of a light and fresh green colour, and forms a most interesting object in the aquarium. This plant readily propagates itself by offsets. Pontederia crassipes is a most curious plant, having inflated leaf-stalks to its kidney-shaped leaves, and which give it the general appearance of a Sarracenia. It should be grown in every stove tank as a most interesting and curious object. Vallisneria spiralis is a Grass-like plant, which roots freely into the mud at the bottom of the tank, and sends up its female flowers on long, spiral, hair-like stalks, often 15 in. to upwards of 2 ft. in length.

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GARDEN NUISANCES.

FREQUENT discussions have taken place in GARDENING ILLUSTRATED on the above subject, but I have not found that anybody has discovered the perfect cure for any of them. Perhaps the experience of an old gardener may be of further use. The remedies given are what I now always adopt when patience is severely tried, and measures of some kind must be taken. We will begin with

Cats, and their mischief of rolling upon favourite plants and scratching holes. There is no use whatever in destroying them ; apart from its being an unjustifiable and cruel act, either to kill or trap them, it is useless, because others will be sure to take their place ; nor is there any occasion to banish them altogether, as if they cannot roll or scratch up a plant, any number of cats might be in a garden without injury. Most people who have gardens know the plants which cats delight to roll upon, but they will go to any newly planted subjects, as Pansies, &c., because the ground is loosened and makes scratching easier to them. Therefore, when any choice plant is bedded out, cut a few sticks 8 in. or 1 ft. in length and thrust them firmly in round the plant, allowing the pointed ends to stand outwards, five or six such sticks will secure any plant from further molestation. I always keep my old Raspberry canes for this purpose. If cats have only one or two places of entrance to a garden, and that from walls or other projections, a great deterrent is coal gas tar liberally painted about ; they have a great dislike to it, but it requires renewal when dry.

Caterpillars generally are not so effectually prevented ; but the best cure is soot. If this is thrown about Currant or Gooseberry bushes about this time of the year, one or two dressings will suffice ; it will be found to destroy them altogether, and if it is lightly dusted over Cabbages in summer, with a large tin having holes at the top, it will be very effective.

Slugs.—To destroy these is a far more difficult matter, and I confess, although I have adopted the following treatment for them, that it is an incurable evil, but can be mitigated to some extent. The first procedure is in winter, at that time during frost. Turn over the frosty surface, that is, turn the frozen surface downwards ; it can easily be done with a stout fork ; apply soot then over the surface. In spring, dress the surface and about the plants with lime and sand, distributed with a canister and holes as before. In summer when the leafage of beds is too thick to apply these dressings, which are also unsightly, clear lime water is the best of all, but the lime must be fresh and allowed to settle before use. It may be used with a watering-pot and will neither disfigure nor injure anything ; if done twice a week in the evening, it will be almost a cure for these miserable pests.

Wireworm is a still more difficult subject to treat of. I can state confidently, however, that guano kills them ; fortunately, they are not found in any ground that has been cultivated for some years. All gardens recovered from waste land are full of them. If such gardens are well dressed with guano they will soon disappear. In potting loam it is very common. When I get this from a forest in the neighbourhood, I always water it well with strong guano water besides searching for these ruthless destroyers ; and fortunately they are easily seen from their bright yellow colour. W. T.,

Dorset.

GARDENING FAILURES.

FIRST, let "Disappointment" (p. 533) obtain all the back numbers of GARDENING from October 23 last, and carefully read therein the articles on Town Gardening. They were written expressly to meet such difficulties as his. Outdoor plants have already been treated of, and the management of window and greenhouse plants will be given in future numbers. He may rely implicitly upon all the instructions given in these papers. The varieties of plants recommended are the result of a long experience in a much worse locality than Camberwell.

In the meantime, here are a few hints. Is "Disappointment's" garden too shady? As that would account for a paucity of bloom. If enjoying a fair amount of sun the soil may be wrong in some way. If this is too poor, manure it well with rotten, not fresh, manure ; if too wet, drain it ; if too dry, renovate it. As for sparrows, there is nothing like strong black cotton, stretched a few inches above the things to be protected ; the birds cannot see this, and it entangles and alarms them. Then remember that Camberwell is not like Kent or Sussex, or any open country place ; there all you have to do is to plant things. They are sure to grow ; but in town and suburbs you must make them grow by constant care. Geraniums ought to do well ; their running to leaf to such an extent suggests too rich a soil. Try sinking the plants (in 5-in. pots) in the soil. For suitable annuals, &c., see the lists given in the number for November 20 of last year. Corn-flowers, Phlox Drummondi, Mignonette, and Indian Pinks could scarcely fail in any case.

Regarding the greenhouse, the air within it has evidently been allowed to become too dry and parching. If "Disappointment" really wants to succeed, and have flowers in winter, let him discard the hot-air arrangement, and have hot-water pipes fitted, heated by a slow combustion boiler, which he will find far more satisfactory and economical, and far less trouble than anything else. Keep the atmosphere moderately moist by sprinkling the floor, paths, &c., not the pipes or plants (or these last but seldom). 60° is too high ; 50° or 52° by night, 55° on a dull day, 60° or more on a sunny one, is plenty at this time of year, and will produce plenty of flowers, with care in watering. You cannot grow Heaths in Camberwell, and I would say, stick to Geraniums and such comparatively hardy things until the first principles of success have been mastered, and do not attempt Camellias, &c. ; above all, keep everything perfectly clean from both insects and dust.

As it may be some time before the lists of greenhouse plants appear in GARDENING, I may mention a few things that would do well with ordinary care. Those marked with an asterisk need more attention than the others.

Geraniums (flowering zonals, not bi or tricolors) ; Pelargoniums, show and fancy ; Calceolarias, shrubby ; ditto, *herbaceous ; Campanulas ; *Cinerarias ; Primulas ; Petunias ; Plumbago capensis ; Hyacinths ; Tulips, &c. ; Fuchsias,—get Mrs. Marshall, Sedan, Try Me O ! and Wave of Life to begin with ; Ferns, such as the varieties of Asplenium and Pteris, Mimulus, Balsams, Myrtles, Ficus, and a few Genistas. You can scarcely go wrong with these.

If still at fault, I can give still farther directions, but a few more particulars would be needed. B. C. R.

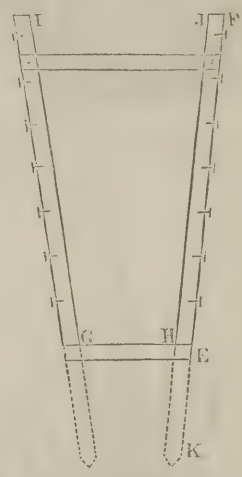
Ridging Ground in Winter.—There is no method which more effectually brings garden soil into a healthy state than laying it up in ridges during the winter season. This system possesses a two-fold advantage, inasmuch as when the planting season arrives, it is known to be in a sweet condition ; and by readily throwing off the superfluous moisture it is more easily brought into working order. On soils of a stiff, tenacious character, ridging is indispensable, but it may be safely affirmed that all kinds of soils would be much benefited thereby. If a very neat and trim appearance is indispensable, then in most cases I would prefer to merely clear the ground and let it lay untouched until the beginning of March. Freshly dug ground would appear to retain an undue amount of water, which has the effect of rendering it pasty and sour. This more especially applies to rich alluvial soils, and I have often noticed that where the surface has been left untouched, and even covered with weeds, the soil will, when dug in the spring, appear much more mellow and be in far better working order than that which has been carefully dug over. I would therefore recommend either throwing up fallow ground into rough ridges (the rougher the better), or letting it alone altogether. Simply digging I consider a mistake, and whoever desires to ensure neatness thereby must expect that he will experience a great amount of labour to bring the soil into that sweet, friable state which in vegetable culture is the very mainspring of success.—H. C. S.

Raising Small Seeds.—Small seeds, such as those of Lobelia, Begonia, &c., occasionally present, especially to the amateur, considerable difficulty in inducing them to germinate. This arises from the fact that, while it does not do to cover such seeds with soil, a very small amount of surface dryness is sufficient, when the seeds are swelling, to destroy them altogether. Covering the pots with Moss or sheets of glass is occasionally recommended ; but both tend to draw up the seedlings, and not unfrequently cause them to damp off. Such being the case, I submit the following plan, with which I have been very successful in raising hybrid Begonias, whose seed is very small indeed. In most plant houses may be found pots surfaced with a delicate growth of Moss, varying from the condition of a green felt to fully-developed Moss. On this sow the seeds. The Moss maintains a genial moisture, while its fibres retain among them the tiny seeds and prevent them from being washed down into the soil and lost. A piece of turf (peat) kept close and moist under a bell-glass also answers the purpose, but air must be freely and judiciously admitted as soon as the seeds are up.—G. P.

SUBSTITUTE FOR PEA STICKS.

THINKING that the plan which I have adopted (I may say invented) for the support of my Peas, and which I have satisfactorily and practically tested for two summers, may be of use to many readers of GARDENING who have difficulty in procuring sticks, I beg herewith to give an account of my system with diagram of the same.

For early Peas, such as Emerald Gem and Ringleader, &c., the standards are 3 ft. in height out of the ground from E to F ; 7 in.



between G and H, and 11½ in. between I and J. For taller-growing and more branching kinds I use standards proportionately larger in every way—*i.e.*, for Veitch's Perfection and Dr. McLean. My standards are 4 ft. in height, 9 in. between G and H, and 15 in. between I and J, and these widths between the uprights would be sufficient for a 5-ft. Pea. I make my own standards, which any one who can use a hammer and saw can also do. The wood is of red deal, 1½ in. by 1½ in. ; the nails are called 2-in. galvanised iron clouts, and have good large heads which are quite necessary. The bottom nail is 3 in. from the surface of the ground, the second 3½ in., the third 4½ in., and so on, the space between each increasing as we advance towards the top. I use "tarred band" nearly as thick as an ordinary penholder. Two strong pegs and straining cords, one at each end standard, are quite indispensable, as the band shrinks with the wet, and in so doing would pull the whole fabric down. Pieces of board the width of the standard are placed under the bottom bars of the end standards to prevent over sinking. The supports are fixed about 7 ft. or 8 ft. apart ; a loop is then made on the end of the band and slipped over the bottom nail, and you proceed to walk up and down each side of the row, giving a turn round each nail as you come at it. The operation is simple and expeditious, and you may string as few rows as you think proper, or you may continue and complete the stringing. With care the materials will last for years. EBORACENSIS.

EVENING PRIMROSES.

(ŒNOTHERAS.)

IT would be better were a more fitting designation found for a portion of this fine family of hardy perennials, which can scarcely be termed as of the evening, seeing that they expand in the full blaze of the sun and close again at dewy eve. The Evening Primroses are distinguished by large bright yellow or white flowers, which in many of the species are so freely and continuously produced as to render them of great value for the summer decoration of the outdoor garden. The Missouri Evening Primrose (Œnothera missouriensis) is often employed as a bedder, its blooms being of large dimensions, and the habit of the plant dwarf and spreading, thus rendering it suitable for beds on lawns or for associating with other dwarf-growing subjects. This species demands for its well-being a warm, well-drained soil, growing with great freedom when thus situated, and not needing the slightest protection in winter. When, however, the grower may have to contend with a cold, moisture-holding soil, he will find it imperative to take some precautionary measures at the commencement of the winter months. The best way to treat this plant is to take off some cuttings during the summer months, which strike freely if inserted in sandy soil in a sunny situation.

The soil should be thoroughly pulverised by turning it up roughly some time previous to putting in the cuttings, and should be well stirred with a fork and every lump broken. Then, having raked the surface and made it smooth and even, draw some shallow drills say 3 in. deep, and nearly fill them with fine sandy mould. Press this fine compost firmly down and insert the cuttings therein, giving them a good watering to settle the soil well around them. Should the weather prove very hot and dry, stick in a few branches of evergreens in such a manner that the cuttings are shaded during the hottest portion of the day. Otherwise as little shade as possible should be given, for this Œnothera is of rather succulent nature, and enjoys the full blaze of the sun. If a cold frame is at liberty the young plants may be taken up in the autumn and laid in in some light soil, where not only will their safety be secured, but they will make throughout the winter a large amount of fibre, and will be in prime order for planting out in the spring. Young plants thus treated will generally give more satisfaction than stools which may have passed the winter in the open ground, for the flowers, if not produced in greater profusion, will be individually much finer.

Where the accommodation of a glass roof cannot well be accorded them, their safety will be assured by bending some Hazel rods over them and covering during periods of inclement weather with a mat or two; or, in the case of isolated stools, the crowns may be covered with Cocoa-nut fibre, ashes, or some kind of litter, or, better still, a large flower-pot or cloche. It is when the ground has become soddened with rain or snow and severe frost sets in that this, as well as many other so-called hardy plants are liable to receive an irremediable injury. If the plant is not killed outright its vitality is so sapped, that when the growing time comes there is an almost entire absence of that luxuriant vigour which characterises this species when the functions are in an active, healthy state. Where the natural staple is of a free, warm, sandy nature there is no need to take any of these precautions, as the roots and crowns will remain in a perfectly healthy state throughout the year, quite unaffected by extremes of wet or frost.

There could scarcely have been a more trying winter than that of 1879-80 for plants of such a nature as this one, but in spite of the unusual severity of the weather, extending, as it did, over so long a period, I did not perceive that a single plant suffered any diminution of vigour where the natural staple was light and well drained. This proves that this Evening Primrose is perfectly hardy providing that excess of moisture can be guarded against, but where any doubt upon the point exists it will be better to adopt the means above suggested, and which the writer has proved to ensure the very best results being obtained from this extremely gay perennial. A species which offers a decided contrast to the Missouri is Fraser's Evening Primrose. This kind throws up a number of erect, somewhat rigid stems, some 18 in. high, terminating in dense clusters of large yellow flowers, which are produced continuously for several months. This species, in common with some other nearly allied to it, possesses points of beauty not always noticeable at the first glance. The contrast between the rich golden hue of the flowers, the beautiful green glossy foliage, and the rich warm brown of the flower stock is very pleasing, and affords a harmonious combination of colour but rarely met with in flowering plants.

Fraser's Œnothera is a hardy kind, perhaps the hardiest of the genus, for I have known it to live and thrive under circumstances which must have proved disastrous to the major portion of this family. I would, therefore, recommend this species to the notice of all plant lovers as being calculated to give a large amount of pleasure for a very small amount of labour and expense. As a complete contrast to the foregoing, I would take either taraxacifolia or marginata, the latter a lovely kind, and worthy of a place in the most choice collection of hardy perennials. Other yellow-flowered kinds consist of riparia, a species much resembling Fraseri, but less vigorous; serotina, and Youngi. In all cases, and wherever these Evening Primroses may be grown, it should be remembered that they, being profuse and continuous flowerers, demand a rich, free, deep soil, where during the hot and trying months of July and August they may find, just when there is the greatest strain upon them, an ample store of food and moisture. Upon the previous careful and thorough preparation of the soil depends the enjoyment derivable from this fine, but, I may say, much neglected family of hardy perennials. An impoverished, sour, or clogged soil, in which the roots cannot travel freely or exist in comfort throughout the year, can only be productive of disappointment. Dig deeply, expose the top spit to sun and air, add light soil where such is seen to be necessary, manure well where there appears to be a lack of nourishment, and you will get for some months in the year a fine display of beautiful flowers.

J. C. B.

Missouri Evening Primrose (Œnothera missouriensis).

Large-flowered Evening Primrose (Œ. grandiflora).

Dandelion-leaved Evening Primrose (Œ. taraxacifolia).

Lamarck's Evening Primrose (Œ. Lamarckiana).

Drummond's Evening Primrose (Œ. Drummondi).

Handsome Evening Primrose (Œ. speciosa).

Phlox Drummondi grandiflora.—Nothing can exceed the beauty and usefulness of this Phlox, either as a border plant or for bedding purposes, and it is also invaluable for furnishing cut flowers. Its colours, which are varied and brilliant, are far superior to those of the older varieties, and they are not injured by bad weather or frost like those of many other flowers. Although this Phlox is generally treated as an annual, it strikes freely from cuttings in autumn; these come in usefully for pot culture and early spring bloom in the conservatory or greenhouse. Seed should be sown in

February or March, and the plants be grown on for planting out early in May or June.—W. D.

A Few Words on the Mesembryanthemum.—The Mesembryanthemum is classed among greenhouse succulent plants, but to see some of the most hardy sorts growing out-of-doors all the year round at Scilly and in Cornwall, one might be apt to think that the above-mentioned places were their real native lands. But when we investigate the matter more fully and find that a great many of them come from the Cape of Good Hope and such like places, it is rather startling. At the islands of Scilly in the month of May the rockery is all ablaze with these beautiful flowers, and is one of the best sights to be seen of its kind. The Mesembryanthemum is one of the finest families of plants one could put in a rockery. Some of them are very rank growers, covering in a comparatively short space of time a large space of ground. But this is a very good fault if it can be so called, because in the month of May they can be easily cut back to the required size without injury to the plant. They are also very suitable for hedges or walls, looking green in the winter, when almost all other plants are bare, and gay and brilliant in the summer. Indeed, as I have said before, nothing is more suitable for a rockery than this kind of plant, its mass of flowers looking so brilliant and dazzling in the summer, and its green, fleshy leaves in the winter. All the sorts may be had from seed, and most of them by cuttings about May, dried at the base before inserting them in sandy soil, peat, loam, lime rubbish, and old cow manure well drained. Seeds should be sown in a hotbed, and the plants be gradually hardened off before being planted out.—H. ROBERTS, *Gulval.*

Planting Ixias, Sparaxis, &c.—Now is the time to plant Ixias, Sparaxis, Babianas, and similar Cape bulbs, which, unless planted early, do not bloom in such perfection as they otherwise would do. They should be planted in rows across 4-ft. beds, 2 in. deep. Dig up the soil in the beds loosely, and on no conditions trample on it, and some rough sand should be strewed in the notches under and over the bulbs at planting time. The sand is not only beneficial to the bulbs, but it is also useful in showing where they are at lifting time, when, from being so small, they are otherwise often overlooked. Of course the ground should be in workable condition, not frozen or full of snow. —F.

VEGETABLES.

HOW TO GROW GOOD RADISHES.

IT is necessary that some pains should be taken to insure a free and moist root-run in well enriched ground if Radishes are to be grown in perfection. It is often customary to sow them and other salading indiscriminately in any piece of ground which may happen to be in readiness or become vacant. This is, however, a mistake, as the soil, from being partly exhausted by a previous crop, and perhaps become somewhat lumpy and sour, is in a very unfit state for the reception of the seed. It would be much better if, at the close of the year, a spot of ground were selected and retained for this purpose alone during the ensuing summer. It could then receive careful preparation, and would be always in readiness. This latter point is not the least advantage which would accrue to the grower from an early preparation of the soil, as a break in the supply will sometimes occur through not being able to sow in time. The most suitable soil for the Radish is that which can at any time be easily and freely worked with the fork. A light and somewhat sandy soil, that has been well enriched with rotten manure, will best promote the free root action which it is so necessary to secure, and without which tender and well-flavoured Radishes cannot be grown. If the soil should therefore be as above described, it will be easily sweetened and pulverised by well stirring it with a fork; it will then only be necessary to afford a liberal supply of nutriment during the growing season. This is best accomplished by working in a good portion of thoroughly decomposed manure; that which has been used for hotbeds, and which has been turned over several times, is admirably suited for the purpose. Lacking this, short stable manure may be employed, removing the straw thoroughly, breaking all lumps, and working it in to at least the depth of 1 ft. Should the soil be of a stiff, tenacious character, add a good portion of leaf-mould, wood ashes, or any light material which may be obtainable. During the winter the ground should be ridged up, and should remain in that condition till February, when manure should be added, and it should then be half trenched, burying the top 6 in., and bringing about the same quantity up in its place. This should be laid up as roughly as possible, in order that it may become thoroughly sweetened by the time when it is required for use. Manure may again be added at discretion. A good depth of free, well-prepared soil will thus be secured, and the extra pains bestowed on its preparation will not be regretted, especially if a hot summer ensue. In shallow or unsuitable soils, a few days' hot sun burns up the fibres, and watering is almost useless. This is mainly the cause why hard, dry, sticky Radishes are more the rule than the exception. Where a good deep root-run is provided, water may be given with beneficial effect, and a good soaking now and then will suffice to keep the plants growing without check. It is from the beginning of June onwards up to the end of August that the greatest difficulty is experienced. It is, however, comparatively easy to have good tender Radishes at any time, provided the requisite precautions have been taken to promote free root action. Frequent sowing is, of course, indispensable, and this operation must be so conducted as to preclude the possibility of failure in germination. If the weather be hot and parching, the best way is to well water the ground at night, and early in the morning sow the seed thereon, which should have been previously soaked for twenty-four hours and mixed with sand, to admit of its better distribution. Cover with some light soil, which should be firmly pressed down, and then lay some boughs or old Pea-sticks over the bed. Quick and free germination will thus be secured. If sown broadcast, 4-ft. beds are the most convenient size, as the plants can then be easily thinned and weeded; or they may be sown in drills about 9 in. apart. Of the two methods sowing in beds is, however, rather the best, as the Radishes can there be more easily drawn when fit for use. W.

Common Evening Primrose (Œnothera biennis

How to Grow Parsley.—Parsley should be sown about the end of February or the beginning of March on well pulverised land in drills 1 in. deep and 1 ft. apart. It may either form an edging to another crop or occupy a bed or patch by itself. When large enough, thin out the plants to 4 in. apart. Another small sowing should be made about the beginning of July, and be thinned out and treated the same as the early-sown lot. Parsley sown early, and required to be gathered of a moderate size, becomes pretty well exhausted by the following spring, and hardly any precaution will prevent it rushing into flower before the new crop may be considered fit for gathering. But the crop from a midsummer or July sowing comes in at a season when everything is full of growth, and has a chance to get thoroughly established, and this is one advantage in favour of the permanency of the plant. Another and the main reason that may be advanced in favour of this time for sowing is, the plants have not the same tendency to flower and seed he following sesaon. Any one who has hitherto depended upon the early spring sowing, and has found a difficulty in making the two crops meet, should try this plan. Strictly speaking, Parsley is a biennial, and if sown after midsummer, its season of flowering will be proportionately late; and this is a great advantage when plants are grown for their foliage alone. Some means of sheltering the crop should be devised and prepared before bad weather sets in. Straw hurdles or forked sticks may be placed round the bed on which other pieces are placed, when the whole may be lightly covered with Fern or dry straw.—H.

Lettuces in Pots.—Every one would like a Lettuce at this season of the year, yet few people get them. It is, however, neither troublesome nor difficult, nor does it involve much extra expense, and where a large supply of salading is required, the results obtained in this way are so certain, that the method should be adopted more often than it is. The plants will do very well in an orchard house, but of course will come on faster in a warm house, such as a Vinery or Peach house. Although they will stand a stong heat, from 50° to 60

suit them best, and, in fact, will give range enough to show how accommodating they are. When grown rapidly in a light house, they are more tender and more delicate in flavour than when exposed to all the vicissitudes of temperature and other unfavourable circumstances in the open air, no matter how sheltered and protected they may be. There is no fear of snails or slugs eating their hearts, and neither is it necessary to smother them with lime or soot, in order to keep these depredators at a distance. A 4½-in. pot will hold a good large Lettuce, and a couple of hundred, more or less, will not occupy much room. This number will furnish a good many salads. Tying up for blanching, as they become large enough, and supplying them with water, are the chief operations required in connection with the undertaking. It is always advisable to grow two or three kinds. The Tom Thumb is a beautiful small Cabbage, and will come in before any other kind. The White Paris Cos or any good variety of it will come on in succession, and the Dutch Cos may always be relied on to do well under any circumstances, both indoors and outside. It will probably take longer to blanch, but will keep longer in that condition afterwards.—H.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

January 24.—Finishing the digging of vacant ground making ready to sow a second piece of Broad Beans (Early Long-pod); digging flower borders and among standard Roses; sowing Dutch Turnips, Peas (consisting of Laxton's Alpha, Little Gem, and Advancer), Spinach between the Peas; potting cuttings of Calceolarias; potting some young Vallotas; putting a few scented Verbenas into heat for cuttings; putting in Red and Black Currant and Gooseberry cuttings; planting Potatoes under south wall, and sowing a few Radishes among them; beginning to layer Carnations for flowering in winter; wrapping Ageratums in Moss and putting them in boxes in heat, so as to be able to divide them at bedding-out time; shifting herbaceous Calceolarias into good rough material; cleaning scale off Camellias; making another frame ready for Carrots and Radishes; getting all Peach trees pruned that are under glass; cutting down the winter Heaths which have done blooming; finishing the pruning of wall and pillar Roses; also that of bush fruits.

Jan. 25.—Digging among Currant trees by walk sides; sowing Cabbage Lettuces; also Cauliflowers in frame; potting off late-struck Christine Pelargoniums; also Vallotas, Amaryllis, and Eucharis; putting one-year-old Vines into fruiting pots; putting in Bouvardia cuttings and cutting down old plants; putting in another crop of Rhubarb; shifting Humeas; putting all Fuchsias into heat; getting all Vines painted and tied down; fumigating Pelargoniums and Roses; giving Vine border a top-dressing of burnt refuse, ashes, loam, old mortar, and farmyard manure.

Jan. 26.—Sowing Walcheren and Loudon Cauliflower in heat; also Lobelia speciosa in heat, and more Syon House Cucumber; beginning to shift Centaureas into 8-in. pots; putting in Petunia and Verbena cuttings; placing old Verbenas in heat for cuttings; planting Jerusalem Artichokes with leaf soil; putting in Endive to blanch weekly; placing Crocuses and Snowdrops in cold pits; fumigating Gardenias.

Jan. 27.—Sowing Capsicums, Tomatoes, and Carrots on leaf beds; also Lobelia in heat; beginning to box Balm; potting Tigridias and placing them in Peach-house; also Tuberoses and plunging them in heat; giving Gardenias some Standen's manure, and afterwards watering them with guano-water once a week; putting in Verbena cuttings; also some cuttings of Poinsettia, Heliotrope, Achyranthes, Salvia fulgens, Fuchsia, and Lobelia speciosa; planting Roses where needed; tying down Raspberry canes; manuring and just pricking over the Asparagus beds; clipping Privet and Yew hedges; thinning Radishes in frames; placing all Potato frames on leaf beds and putting in soil.

Jan. 28.—Sowing Radishes and Carrots in frames; also Incomparable and Ivery's Celery; potting Isolepis, Selaginella, and Cucumber plants; potting Lælia superbiens in nearly all Sphagnum, the pots being crocked to the top; shifting a few young Fuchsias and putting them into second Peach house; beginning to nail Apricots; putting gas tar round Violet frames and stopping up all rat holes; washing Daphnes; getting soil and pots into warm for Beans; loosening the Peach trees on walls; beginning to prune Apricots and Peach trees; cleaning herb beds.

Jan. 29.—Sowing Orangefield and Kaye's Tomatoes; potting some Oxalis and autumn-struck Heliotrope; also some Centaurea cuttings, and putting them into Peach house; putting in cuttings of Cineraria maritima, Carnations, and Scented Verbenas; planting out the first Cucumbers in five-light pit; layering winter Carnations; turning manure for Celery; putting some manure on Rhubarb out-of-doors to blanch; also on Seakale; making new Horseradish bed, taking up old stock in order to be able to prepare ground.

Glasshouses.

Epacrises.—There are numbers of these naturally disposed to bloom in the winter, but they flower much freer and fuller if placed in a temperature such as conservatories are ordinarily kept at this time. Amongst them are the erect-growing varieties of E. hyacinthiflora, candidissima, carminata, and fulgens. In the more bushy-habited kinds the white Lady Panmure, Salmonia (salmon colour), and Sunset (fiery red), with others of intermediate shades, will, if accommodated with the little extra warmth, open their flowers much freer than when kept cool, and continue blooming for many weeks. They are much more generally useful than winter-flowering Heaths, on account of their being more easily kept in health, giving greater diversity of colour, as well as brighter and more cheerful-looking blossoms, and better adapted for cutting. With the erect-growing kinds especially it is necessary to considerably reduce the preceding season's growth; consequently, the whole of the shoots have to be shortened back, and they may, where cut flowers are wanted in quantity, be so treated whilst in bloom. The bushy growers will also bear the knife freely. For the same reason there need be no hesitation in cutting their shoots when in flower.

Acacia armata and Drummondi.—If the plants have made their growth early in summer and are well ripened up, the temperature of the conservatory will bring them on into bloom quickly, and the flowers will last longer than if developed in more heat. Both these Acacias, when they have attained anything near the size required, will be benefited by three-fourths of the current season's growth being reduced.

Daphne indica.—This is another plant which should find a place in every conservatory, as its presence alone, without the aid of any other sweet-scented flowers, is sufficient to keep up the most agreeable perfume. Both the white and the pink bloomed varieties deserve growing. Their agreeable scent is frequently the cause of more of their flowers being cut than is consistent with the well-being of the plants, which cannot bear much cutting, unless, in the case of individual specimens that are very strong, and in this matter the cultivator can always be guided by the condition of the plants.

Oranges.—Where these are treated so as to keep them in a healthy, vigorous, thriving condition, furnished with plenty of good deep green-coloured foliage, they are amongst the most effective and useful subjects that can be introduced into a conservatory, bearing fruit in different stages of development for a great portion of the year, and producing plentifully flowers alike acceptable for their odour and also for cutting. There is one drawback to their cultivation, their liability to the attacks of insects, particularly brown and white scale. Where the latter exists on large specimens it is impossible to keep them in health without continual attention. Now whilst they are dormant an effort should be made to get these pests well under; they may be altogether eradicated by repeated dipping or syringing with strong insecticide, but to accomplish this it will often be found necessary to sacrifice the flowers for a season, as the continued washing with a solution sufficiently strong to destroy these most difficult of all insects to kill frequently has the effect of stopping the development of the bloom-buds, but the loss of a season's flower will be found to be amply compensated for by the improved after condition of the plants and the great saving in labour. In small conservatories a few medium-sized plants of the ordinary sorts of Orange will associate well with Camellias, and the small-growing Otaheite kind that fruits so freely when not more than 12 in. or 15 in. high will be found suitable for standing in vases on brackets, or other prominent positions in either large or small houses.

Correas.—Amongst smaller-flowering hard-wooded plants that keep on blooming for a considerable time, and are well adapted for conservatory decoration, are several of the varieties of Correa, of which may be mentioned C. cardinalis, C. brilliant, and C. bicolor. The blooms last long on the plants, and, hanging gracefully as they do from the small slender branches, will be very useful in combinations of cut flowers.

Kalosanthes.—If cuttings of these are put in at once time will be gained, as, if subsequently fairly treated, good blooming plants may be had in eighteen months. Cuttings can be got from any established plants, selecting the strongest shoots that are not going to flower, which will be easily discernible, putting three or four together in small pots in sandy soil and placing them anywhere where the temperature is a little above that of an ordinary greenhouse, but not enclosed under a bell-glass or propagating frame, which, in their case, is unnecessary. Moderate-sized plants in from 8-in. to 10-in. pots are the most serviceable. Those that are intended for flowering the ensuing summer should now have their shoots regulated with a few stakes and ties just sufficient to keep them in an erect position.

Boronias.—B. Drummondi and B. pinnata will be now coming into flower, and will keep on blooming through the winter and spring. B. elatior and B. megastigma, comparatively new kinds, are both beautiful, and B. serrulata, later in its flowering, is most desirable on account of its perfume; a small plant in a 6-in. pot will agreeably scent a large house. If a few of these plants are grown for interspersing about the greenhouse or conservatory, their distinct drooping habit will do much to relieve the oversameness of Pelargoniums, Fuchsias, and the like. If kept in a low temperature at this time they are rather subject to mildew, but if accommodated with 40° in the night and a rise of a few degrees in the daytime, they are not liable to suffer in this way.

Chorozemas.—For a like purpose in giving variety these will be found of very easy growth, producing for a considerable time their brilliant flowers in profusion. If a few varieties, such as C. cordatum splendens, C. varium Chandleri, and C. varium nanum, are grown in moderate-sized pots, they will do good service through the spring months. Their healthy green foliage is little subject to the attacks of insects, except red spider. These plants will bear keeping cooler than the Boronias; the small amount of tying they need should now be done.

Epiphyllums that have had their growth well matured during the summer, by exposure to all the sun possible, should now be kept at the warmest end of the greenhouse with very little water at the roots, only just enough to prevent them from shrivelling too much, for if, whilst subject to a somewhat low temperature, the soil in which the small amount of roots they make exists is at all over moist, the fibres will rot, to which cause may be often attributed their not blooming freely. E. Ackermanni, E. crenatum atro-sanguineum, E. speciosissimum, and E. speciosum superbum are much more deserving of cultivation than many of the weedy subjects that now find favour. Plants of E. truncatum intended for late flowering to come on with just warm greenhouse treatment must likewise not have too much water at the roots until the advancing season affords more warmth.

Statices.—These are strictly greenhouse plants, but, at this time of the year, they should be kept in a temperature of from 40° to 45° in the night, as, unlike many other hard-wooded plants, they are never absolutely at rest, growing slowly through the winter; their roots are also continuously active; consequently, even at this season, they require the soil to be kept a little more moist than for most plants. There is one point in their cultivation that requires attention: the old leaves as they gradually decay do not fall off, as in the case of the generality of plants, but hang dead upon them, and if not removed when in this state, they are apt to go mouldy, and sometimes destroy the shoots to which they are attached.

Roses in Pots.

Tea Roses in pots grown out-of-doors in summer and treated with the intention of having them well furnished with buds in the autumn, and then placed in a greenhouse temperature to enable the full development of these outdoor formed buds without much fire-heat, which they will do up to the close of the year, will now need to be managed with a view to their doing service in a like manner next autumn, for, when required to produce flowers in this way there should be no attempt to force them on so as to make further growth and bloom after they have borne the first crop; but they ought not to be turned out for some time yet into cold frames where the soil about their roots will be liable to get frozen, unless precau-

tions are taken to prevent this, as such treatment would affect their now more or less active roots and interfere with the growth they are expected to make during the summer. They should be put where there is the means of excluding frost, and any pruning that may be necessary it is better to carry out at once, allowing them to remain here until the spring, by which time their young shoots will begin to move, and whatever potting is needed can be done, and when the season is past for any frost likely to injure them, they may be turned out-of-doors where they are to remain for the summer with their pots plunged in ashes. Where there is an attempt to supply Roses all the year round, plants thus treated fill an important place, their bloom coming in before that of those subjected to more heat, but if they are to increase in size and vigour, as is desirable, they must even now, after flowering, be cared for in a manner different from the rough usage to which they are often submitted when their blooming is over.

Strawberries in flower should have the pollen distributed daily, and air given freely whenever the air outside is free from frost. Keep the plants reasonably moist, and avoid splashing the flowers with water. As soon as the fruit is set, thin it out to six or at most eight fruits to each plant, after which manure water may be given twice a week. Successional batches of plants should be placed in warmth fortnightly in order to keep up a continuous succession of fruit till open air crops are ripe. As a rule about three dozen plants put into warmth fortnightly will ensure a moderate succession of fruit. Shelves for plants that are to remain in the one position till their fruit is ripe may have a coating of horse droppings or turf cut the width of the shelf, and laid Grass side downwards; into this the roots soon find their way, and much labour is saved, as water is not so frequently required as it otherwise would be. The plan has one drawback only, and that is, the drainage sometimes gets choked, a matter easily avoided.

Melons.—Do not be in a hurry to plant these out. At this early season there is little danger of their being pot-bound, and the plants will make better progress if kept on shelves near the glass for another week or two than planted out. The soil should be got in to admit of its getting warmed through thoroughly. Moderately stiff loam, without any admixture whatever, is best, and if fresh dug from the pasture all the better. It should be well pounded when put in the bed, and the lighter the soil the harder should it be made. Make another sowing in the manner recommended in a previous calendar.

Flower Garden.

Acacia lophantha, one of the most graceful and effective of sub-tropical plants should be sown now in order to have good plants for putting out in May. Another fortnight will be sufficient early to sow Solanums, Ricinus, Wigandias, Ferdinandas, and other free growers, as they are apt to get pot-bound and stunted before planting time when sown too early. Pelargoniums that were not propagated in sufficient quantity in the autumn should now receive attention; three cuttings in a 3-in. pot make fine plants for turning out into the beds without division. They strike freely at this season on a dry, warm shelf in a Vinery, where there is a minimum temperature of 55°. When the weather is open trench and dig all beds and borders that are vacant, and each bed should have manure proportionate to the requirements of the plants intended to grow in it. Calceolarias, Verbenas, Violas, and all sub-tropical plants can scarcely have too much. Pelargoniums flower best when the soil is poor, but the beds should be deeply trenched with the view of resisting drought. Well roll all walks immediately after a thaw; they will dry off hard and smooth, but if left till dry the roller makes little impression on them. Complete re-gravelling or re-surfacing and turning walks as the weather permits, in order that they may get consolidated before a drier period arrives. The same remark applies to lawns, which at this season can hardly be rolled too much.

Fruit.

Vines.—All Grapes now on the Vines should be cut and stored in a dry room, for if not done soon, a recurrence of mild weather will at once put the sap in motion, and two evils will be the result, viz., the Vines will bleed by being pruned so late, and the Grapes will burst as soon as they are put into the bottles of water. When the pruning is done thoroughly cleanse the houses and Vines by rubbing off any loose bark and painting them with the usual composition, both as a preventive against and remedy for insect pests. The borders should then be renovated by clearing off all surface soil, working it out from the roots with hand-forks, and replacing it with the best loam that is to be had, with which should be mixed a liberal allowance of ½-in. bones and wood ashes or charcoal, the whole being pressed firmly about the roots. For the present guard against exciting the Vines into activity by keeping the house as cool as possible, a month's real rest being more beneficial than twice that amount of uncertain rest.

Peaches and Nectarines. — Houses now being started should have the borders examined as to moisture; if dry, soak them well with tepid water. Outside borders should have sufficient protection to exclude frost, snow, and cold rains, but artificial warmth is neither necessary nor desirable. Let late houses have the necessary pruning and cleansing on the first opportunity, and induce effectual rest by keeping the temperature at the lowest point commensurate with the future well-being of the trees.

Vegetables.

Early Horn Carrots may now be sown, but in cold positions Carrot seeds lie a long time in the ground, and under such circumstances it will, for very early crops, be better to cut a wide trench, and fill it with warm manure; cover it with 5 in. or 6 in. of light soil, and protect it with glass or outer covering. Sow a few Wood's Frame and French Breakfast Radishes and protect them as suggested.

Where an autumn supply of Brussels Sprouts is required, a box or two should now be sown under glass. Plant out from the seed bed autumn-sown Cabbages to succeed those planted last September. Stir the soil with a fork between the rows of early Cabbages, selecting a drying day for the operation, and afterwards earth them up. Make a small sowing of Celery, in pans or boxes in heat, for flavouring purposes. When the weather is suitable, and the ground in good working condition, a portion of the autumn-sown Onions should be transplanted. Select for them a piece of land that was manured and deeply dug in the autumn or early winter; wheel on a good dressing of charcoal dust or charred refuse, spread it evenly over the surface, and rake or fork it in. Soot also may at all times be beneficially applied. Make the ground tolerably firm, and put in the plants, not too deeply, 1 ft. row from row, and 4 in. apart in the rows. Make a sowing of Veitch's Autumn Cauliflower in pans in heat. Take up the remainder of the crop of Jerusalem Artichokes; select the best for use; place them in a cool cellar or shed, with a little dry sand strewed over them to keep them from shrivelling.

As soon as the surface of the soil is dry enough, go over such crops as Spinach, Onions, Lettuce, &c., with the Dutch hoe. The sooner all vacant plots of land are trenched or dug the better. Sow early Peas in warm sheltered positions; Ringleader and William the First are suitable; or, for small gardens, Tom Thumb or Beck's Gem may be substituted. The dwarf Fan or Cluster Bean is a good companion for the Gem Pea; it is very prolific, and occupies little space. A few early Potatoes may also be planted in a warm position, but unless the means are at hand for protecting them when they come up, the chances of success are remote.

MY GARDEN FAILURES.

I WAS not at all sorry to hear the wail of anguish, from Camberwell, from the soul of a disappointed florist in GARDENING, 8th January, for it furnishes others with an opportunity to record their own experiences; and out of written confession of failure on the one hand, and chucklings of success on the other, much mutual instruction may be gained.

I, like the good-natured writer who styles himself an ass, am too an amateur florist, but am far from being—as he is—disappointed. On the contrary, though the hours I can devote to gardening are limited, and I commenced my labours with a very imperfect knowledge of the art, every step I take, impresses me more and more with the wondrous beauty and uniform action of Nature, as shown in the vegetable kingdom, and convinces me that no man, with a real love of flowers, need seek the help of others to produce them for the decoration of his rooms.

"Disappointment" asks that some kind friend will tell him in good round Saxon the cause of his repeated failures. They are, want of patience, perseverance, and attention; want of a stern determination to begin at the beginning, and understand, as far as a human being can do, the mystery of plant's growth. It is not evidently want of money. He has built a greenhouse upon a good plan, and he has the means to stock it, but he does not show wisdom by purchasing of a fashionable florist a quantity of first class plants to stock his greenhouse with. Does he not know that a fashionable florist pumps his flowers into bloom for sale? The Maiden-hair Ferns, Camellias, Heaths, Hyacinths, and Tulips supplied in full bloom from a nursery are not fit for stocking a greenhouse. "He who would have beautiful Roses in his garden," says the Reverend Canon Hole, "must have beautiful Roses in his heart. He must love them well and always. He must woo, though drought and frost consume. He must have not only the glowing admiration, the enthusiasm, and the passion, but the tenderness, the thoughtfulness, the reverence, the watchfulness of love." The love of flowers involves one in much labour, much anxious thought, requires great care, great assiduity, great circumspection, and crowns the patient worker with the proud satisfaction of having brought to the highest pitch of perfection the particular class or species on which he has delighted to expand his skill.

Some twenty years ago, when the volunteer movement was in its infancy, I strolled into Greenwich Park to see some young friends drill, and sitting at my ease on one of the benches, just as a sharp April shower had made way for a gleam of sunshine, I noticed these excellent fellows lying all about flat upon their stomachs on the wet Grass, pretending that an enemy was at the top of the hill, and they had to approach him cautiously; and I said, *sotto voce*, "You stupid asses! laying up a store of rheumatism for the indulgence of a whim—for the mere gratification of your hobby." But since then the successful cultivation of flowers has grown to be a hobby of mine, and only last Saturday as I lay at the bottom of my garden in the same position as the volunteers, picking out from an old frame some cherished lumps of rotten cow manure, my old words came back to me, and I laughed aloud at the recollection. My advice to your correspondent would be, clear your house of every fragile thing that your florist has supplied you with. Try to grow, and you will succeed in growing, any strong hardy plants first requiring comparatively little attention. Your interest in their culture will be gradually aroused; the experience gained will enable you to soar to higher flights, and you will live to sign yourself, not the "disappointed," but the "undaunted" one of Camberwell.

ZUM.

House and Window Gardening.

HOW TO GROW AN ACORN IN WATER.

I PROPOSE to give directions for growing Acorns in water, also several other plants in a similar manner. To begin with the Acorn: A Hyacinth vase, or, failing that, a pickle jar, is the best-shaped glass to use for the purpose. Choose a fine, healthy-looking Acorn, and crochet with moderately coarse cotton a little network case just large enough to bold it. Take off the cup and put the Acorn into this little bag point downwards, closing it at the top, and making a loop of cotton or chain stitch about 2 in. long (more or less according to the depth of the bottle) to hang it up by. Cut a narrow piece of wood of such a size that it will lie across the top of the jar without slipping in, pass it through the loop, and thus hang the Acorn point down-

wards in the glass, which must have just so much water in it that the tip of the Acorn scarcely touches it. Keep the bottle in a dark cupboard until the Acorn has sprouted, and then put it in the light, just as you would a Hyacinth, being careful to keep the water always at the same level. If properly managed, it will live for a long time.

It is very interesting to try to grow other plants in the same way. I have been successful in rearing an ordinary sweet Chestnut in water, giving it occasionally, by way of manure, one drop of ammonia (sal volatile). I cannot say whether the same stimulant would suit an Acorn. It is quite two years since my Chestnut was first started, and it seems quite strong and healthy, but of course very tiny, being only about 6 in. above the surface of the water. A Potato is well worth the trouble of growing in water, and should be managed exactly like a Hyacinth. From every eye will start a miniature Potato plant, and even tiny tubers will form underneath. It will not last so long as either an Acorn or a Chestnut; as soon as the nourishment contained in the tuber is exhausted, and the new ones are formed, it will gradually wither away. This experiment is a particularly interesting one to carry out, showing as it does, in broad daylight, the growth and development of the Potato, the greater part of which takes place underground in ordinary circumstances.

A Carrot grown in sand is, if well managed, a highly ornamental object. A good-sized and perfectly healthy root must be chosen, and if it has begun to shoot at the top, so much the better. Cut off quite evenly just the crown of the Carrot and place it on the top of the pot full of sand, covering the outer edge of it with a little more sand, so that the leaves look as if they spring directly from it. Moisten it well, and keep it in the dark until it has begun to sprout; be careful to keep it damp, and to move it into the light directly the leaves appear. If the cultivation is successful, an ornament pretty enough for any room will be the result, and which will have, to a novice, the appearance of a pot of Ferns. Another experiment, not quite so ornamental, but none the less curious, may be made with a Turnip, which, like the Acorn and Carrot, must be as sound as possible. Clean the outside, taking care not to injure the part from whence the leaves spring. Cut a piece off the bottom, and scoop out the inside, so that you have a hollow cup. Fasten string or wire to it, so that it can be hung to a peg upside down. Fill the cavity, and keep it filled with water. In a short time the leaves will begin to sprout, and will curl up round the ball of the Turnip, forming a pretty little hanging basket. Care must be taken to shift it occasionally, so that each side in turn is exposed to the light, or it will grow irregularly. These are only a few of the many experiments of this sort that may be made. Each and all point out their own particular botanical lesson, and no doubt much more is still to be learnt by careful and patient observation and experiment.—*The Queen.*

The Hart's-tongue Fern as a Room Plant.—The common Hart's-tongue Fern (Scolopendrium vulgare) is very ornamental, and it is a most interesting plant to watch, the fronds vary so much in breadth, in length, in texture, and even in shades of green, and the various stages of the development of the sori are very curious. I planted some about last April; each plant very nearly filled its pot, so there was very little earth. All have sent up two complete sets of fronds. I cut off any that become disfigured, and at the present time the plants are quite green, beautifully shaped, very glossy, and gracefully drooping. In order to make all symmetrical I fasten down slightly with hair-pins any fronds that are too upright. On some of them the sori, pale green, is just bursting through the epidermis, on others it is of a handsome shade of brown, velvety in texture, and extends quite across and far down the frond, which, when at this stage, has a tendency to grow sideways, so showing the under surface. All friends who see these plants on my dinner table or in my drawing-room admire them beyond measure. I give them a great deal of water nearly every day, let it run through the pots, and when there is rain I put them out-of-doors for an hour or so. They are placed about my rooms on side tables or anywhere; do not seem to want light. If the fronds get dusty and there is no rain, I dust them with a small brush. I am told gas does not injure them at all, but this I have not tried.—MARK.

Carrot-tops a Substitute for Parsley.—From autumn to spring being the time when Parsley is most wanted, both for cooking and garnishing, anything that will take its place, if only for garnishing, is a boon to those who have not Parsley in abundance. Now, an excellent substitute for it for garnishing is Carrot-tops. Let any one who has not Parsley sufficient for both purposes pot up a few Carrots, and put them in a little heat, and then nip the young growths off for garnishing. These, I think, will be preferred to poor Parsley, and will leave the genuine article more plentiful for cooking purposes.—J. H.

Moss on Lawns.—This is better not disturbed till early spring. It must then be torn from the ground with a long-toothed rake; and this should be done twice, allowing an interval of a week to elapse between the rakings. In the early part of March the ground should be dressed with good loam, with about a sixth part of lime added. It should be fine, so as to save the trouble of stone-picking, and then sow with a mixture of fine lawn Grasses.

Maurandia Barclayana.—This is a beautiful half-hardy climbing plant well adapted for the greenhouse window or balcony. It grows rapidly in rich, light, sandy soil, and bears a profusion of large violet-purple blos-

Maurandia Barclayana; a half-hardy climber, flowers purple.

soms. Seeds sown in March in sandy soil in a warm house or frame make good plants for flowering during summer and autumn. They must not, of course, be put out-of-doors till June, but for the window or greenhouse they may be planted in their flowering pots as soon as they are strong enough. Light, air, and sun are necessary to insure their flowering satisfactorily. In some warm counties the Maurandia will withstand the winter, but in most gardens it requires the protection of a frame or greenhouse.

FRUIT.

Gooseberries and Currants.—These are often grown in rows between the vegetables in kitchen gardens, or along the sides of the walks, as a hedge; but this is not a good plan, for they not only occupy more space when so arranged, but are far more difficult to protect from birds and vermin than they otherwise need be. One of the best arrangements which I have seen was planting all the early Gooseberries on an early Cherry wall border, and the late Gooseberries (Warringtons) on the Morello Cherry border; thus two birds were killed with one stone, for the same net protected both Cherries and Gooseberries, one side of the net being tacked to the top of the wall, and the other to a low rail in front of the border, but high enough to clear the bushes and permit a man to go underneath conveniently. The bushes that cannot be accommodated in this way should have a quarter to themselves. Gooseberries may be planted so close as nearly to touch each other, but Currant bushes should be allowed 5 ft. or 6 ft. between the rows. At first, however, young trees may be planted twice as thick as this, and every other bush can be removed and planted elsewhere when they get too crowded. For protection, the best and most economical way is to run a rail round the quarter, 5 ft. from the ground, with other rails at intervals between, and to stretch a net over them and peg it down at the sides. It is not advisable to lay the net on the bushes themselves, as it injures the shoots, interferes with the gathering of the fruit, and the nets themselves are soon destroyed by being pulled about. Cropping between the rows of fruit bushes is not a good practice; let them have the ground to themselves, if they have less of it, and take the vegetables elsewhere. Neither is it advisable do dig the ground much, with either spade or fork, about Gooseberry or Currant bushes; for as the roots are not deep, they are sure to suffer more or less from mutilation. Decayed manure may be forked in a few inches deep, but at other times stirring with a hoe and mulching are all that is necessary. The trees often suffer severely in dry seasons, green fly and honeydew doing much injury; but a good thick mulching of rotten leaves or short Grass will mitigate both greatly if put on in time, and materially help the swelling of the fruit. In any large walled-in garden, a portion of the north wall should be set aside for Gooseberries and Currants. Both do well trained vertically, allowing about 4 in. or rather more between the branches. Indeed, hardly any fruit is more deserving of wall culture; for the trees never fail to bear, while the fruit can be kept till November if netted or matted up. In planting a Gooseberry or Currant wall young vigorous plants should be selected, and it is needless to say that a good soil gives them a vigorous start, and sends them to the top of the wall sooner than they otherwise would be; 2 ft. or 3 ft. between the plants is sufficient, and usually as many branches as are wanted can be originated the first year, and the process of covering the wall goes on rapidly. The leading shoots should not be shortened at all, or at least very little; but all others that grow out from the sides of the shoots should be spurred in to a few eyes every winter. Carrying the leader forward, in fact, and spurring the other shoots is all the training needed. Gooseberries or Currants may be safely planted from October to March if the weather is open.

ROSES.

Planting Roses.—For another month, should open weather prevail, Rose trees may be advantageously planted. The best position is that in which they can enjoy the morning sun until the meridian, and in which, while they have abundance of air, they are protected by evergreen hedges, or other "breaks" and screens surrounding them at some little distance, from the full force of stormy winds. The best soil is a rich mellow loam, into which a walking-stick disappears to the handle, or a strong clay, with a slight element of lime, well dug, and drained, and dunged. If the purchaser wishes to grow the Rose in its highest perfection, he must buy Briers when he buys his Rose trees, and bud the one from the other in the succeeding summer; because, as a rule, the first Rose produced, if it escape frost and the buds around it are removed, will be the most beautiful. In some soils, and in some seasons, many of our best Roses attain their full glory on the Manetti stock; but our indigenous Dog Rose is the most reliable parent of heroes. When the object is to grow Roses for home enjoyment rather than for public competition, I recommend Rose trees on their own roots, or "worked" so low upon the Manetti or Brier that the scion may be planted below the soil, and thus form additional roots of its own.—R. H.

Obituary. — Thomas Tucker, foreman packer for 18 years to Messrs. James Carter & Co., died suddenly the other day, leaving a widow and six children unprovided for. A few friends and fellow-workers have subscribed a fund for temporary purposes, and a committee has been formed to receive subscriptions from

any one desirous of helping the family. Contributions will be thankfully acknowledged by the committee, and should be addressed to it, care of Messrs. J. Carter & Co., High Holborn.

GLASSHOUSES AND FRAMES.

Primula cortusoides amœna for Forcing.—This hardy Primula forms a useful plant for the decoration of the conservatory at this season of the year. Plants of it taken up from the open ground in autumn, and potted and introduced to gentle heat, may be had in bloom from January onwards. They are much more useful for cut bloom than any of the single-flowering Chinese varieties.—S.

The Lemon Grass (Andropogon schænanthus).—This beautiful sweet-scented Grass, with its long, narrow, pale green, wavy leaves, light midrib, and white-powdered stem, is a fine plant for warm greenhouses. When the leaves are rubbed or slightly bruised, they emit an odour like that of the Lemon-scented Verbena (Aloysia citriodora); the leaves are from 3 ft. to 4 ft. long when grown in a 6-in. pot.—R. H.

Triteleia uniflora and Hepaticas in Greenhouses.—How few know the value of Triteleia uniflora for forcing! It is only necesary to bring it into the greenhouse whenever it is wanted, and in a short time it will be in full flower. All the garden Hepaticas open their blooms with the same rapidity if suddenly brought into a warmer temperature. The lilac variety of Triteleia uniflora is a grand plant for a warm border or raised rockwork.—F. M.

Perpetual Carnations.—This is the time to look up the old plants and get them in a little heat, so as to procure some small Grass for cuttings, which should be put in as soon as possible. They will strike as easy as Fuchsias in bottom-heat during February, March, April, and May. Pot off as soon as rooted, and replace in a warm dung bed or pit until well established. Gradually harden off in cool frames until May; then plant out in some open place or keep potting on as the pots get filled with roots, stopping the plants as they may require it. The plants must be lifted from the open ground in September and put in pots, staked, watered well, and placed in a shady place for a few days, then exposed to the sun again; place them under glass before they get saturated with the autumnal rains. When the pots get full of roots, give weak liquid manure once a week. In case the green fly appears, apply Tobacco powder or a solution or Quassia. Do not let any weeds get among them, or mildew will make its appearance; if it does, then apply flowers of sulphur. In the spring plant the old plants against the wall or in a row across the kitchen garden, and strain a few wires across to tie them to, and they will continue to flower the whole of the summer. Strike a fresh lot of plants every year, as old plants are unprofitable in every form. Some leaf-mould, manure, and sand in equal parts, make a good compost for them. With very little trouble, they may be had in flower all the year round in any ordinary greenhouse with a little heat during the winter months. The following are good kinds: White—Avalanche, Vestal, Bride, Flatbush, President Dayren, Ninon de l'Enclos. Scarlet—Boule de Feu, Covent Garden, Dragon, Henshaw, Hubert, Zebra, Jean Bart, Vulcan. Yellow—Ascot Yellow, Prince of Orange. Striped—Ainé, Gloire de Lyon, Miniature, Defiance.—W. H.

Striking Cuttings in Sand and Water.—This, although an old system, is yet a very useful one when properly carried out. No doubt a manure bed under a frame is preferable, but such beds are not always at hand. I have many times found the sand-and-water system useful during the early spring months. I generally employ flower-pot saucers for the purpose, as they are handy to move about. As regards the sort of sand, either silver or drift answers the purpose, and no more sand should be put in the saucer than will keep the cuttings from falling over. The base of each cutting should pass through the sand and rest on the saucer. After the cuttings are put in cover the sand with rain-water of the same emperature as that of the atmosphere of the house, to the depth of ¼ in.; then place the saucers as near the glass as possible and free from shade. Every other day or so drain off the water from the saucers, steadying the cuttings with the other hand, and fill up again; water as before. Thus treated, the cuttings are not so liable to damp off, as they otherwise would be, and the roots are more healthy. As soon as roots appear, take some cow manure or clay and mix it with water to the consistency of thin paint, put it into rapid motion with the hand, and fill up the saucers with this liquid, which will soon saturate the sand and give vigour to the plants. Allow the sand to become almost dry previous to potting, when each cutting will lift out with quite a mat of sand and fibre attached to it. Pots should be ready to receive them, and they should be placed on the soil, sprinkling some of it loosely over them and avoiding all pressure by means of the fingers; place them together on the floor or on a hand-barrow, and give them a good watering through a fine-rosed pot, which will wash the soil down among the roots without damaging a single fibre. Treated in this way, not a single plant need be lost.—J. S. W.

Cockscombs.—Most people admire these, but few grow them really well. They, however, are by no means difficult to grow if a little heat and plenty of moisture can be afforded them. The seeds should be sown in April in well-drained pots filled with rich soil to within an inch of their rims; scatter the seeds evenly and thinly, and cover lightly with a little sand and fine soil. They will germinate best in a frame in a temperature of 65° by night and 75° by day. As soon as the plants appear they should be kept as near the glass as possible, and as soon as they are large enough to handle they should be potted singly in 2½-in. or 3-in. pots. In potting, place them in the soil up to the seed leaves, and in order to preserve the roots from injury they should be carefully lifted. They should be encouraged to grow as fast as possible, and not have too much water; for keeping them dry rather than wet will induce them to produce combs; and, as soon as those that are well shaped can be selected, the plants should be potted into 4-in. or 5-in. pots, giving them a little water a few hours previously. The best soil for Cockscombs is a rich loam, rather inclined to be light, pulled to pieces with the hand, not sifted; to three-fourths of loam add one-fourth of well-rotted cow manure, or the same quantity of rotten hotbed manure or leaf soil and a good sprinkling of sharp sand, mixing the whole well together. In potting, the soil should be pressed rather firmly about the roots, but not so as to make it too solid, otherwise the water will not pass freely away. After potting they must be kept as near the glass as possible, and if they be plunged up to the rim in a hotbed it would be the best position that could be afforded them. The final shift should be into 5-in. or 6-in. pots, according to the health and strength of the plants. There are several forms of the Cockscomb, all of which are worth growing, and the one we now figure, which is being offered by Messrs. Webb & Sons, will doubtless please many who like variety. The comb which is crested breaks into a variety of colours which render it very interesting.

Variegated Crested Cockscomb (Celosia cristata variegata).

MY NEIGHBOUR'S GARDEN.*

IT is a liberal two miles' walk before I can reach my neighbour's garden, but what a charming two miles it is! It is August, very warm, and not a cloud visible; I have a steep hill to climb and when I arrive at the top of it I am half way. To that point I pursue a narrow lane very fairly shaded; after that, an open heath with the heated atmosphere quivering and bubbling like boiling water; it is almost literally so, for the heat is apparently drawing what little moisture there is in the sand and gravel entirely out of them. Nevertheless, the crimson patches of Heather and tufts of Fern seem greatly pleased with it. The heath is in full flower, and innumerable bees are making good use of their time. At the further extremity the ground descends again rather abruptly to a grand extent of level country, and on the horizon that thin blue line is the sea. In the distance on my left I see long dark lines; these are the Fir plantations in the New Forest, a beauty at this distance, but gloomy and tiresome to be among them, and in some places a great disfigurement to the landscape. I should like to know why a little landscape gardening could not have been exercised? one of the rules of that art being variety and contrast of foliage. I cannot say whether it is imagination on my part, as I have never verified the matter, but it has always struck me that the New Forest and for some distance about it is an unusually high temperature for England; when in it I have always found the heat very great. It would be worth while making some registers in a central position; if it is so, the cause would be most likely the gravelly surface soil and the absence of water.

I believe I am so far correct in believing that arid soils generate heat; one ought not to be

* Sequel to My Cottage Garden (page 509).

too near them, but if such is the case it is one of the causes why my neighbour's garden is so complete a success. He is as close as possible to a large extent of arid surface. I therefore please myself with the idea that I have discovered one of the items of that success, but the soil of that garden, though sandy, is very unlike that of the heath above mentioned. I have not expressed that view of it to him, because his own opinion is, the effect is chiefly due to energy and cartloads of stable manure. We have now crossed the heath, and the ground descends, and there stands the lodge and entrance; from that the road to the house is carried artfully to the right, so the descent is scarcely perceptible; the house itself is on level ground, but it required a good deal of terrace-work, and from this terrace you may still descend to the fields and valley in the distance.

The house is a tasteful specimen of a villa, red brick with white stone facings, and possesses every comfort and convenience. You cannot help exclaiming, What a situation for a house! You have from the terrace a view as extensive and varied as it is possible to have; in front, to the right and left, green meadows, a distant river shining here and there, cornfields, woods, hamlets, as far as the eye can distinguish them till lost in the blue distant horizon. The glories of an English landscape are never so perfect as in August.

The garden, or vegetable garden, is to the left, and commences very nearly at the brow of the descent before mentioned, and I do not remember ever seeing a garden so boldly placed on an incline; it is indeed on the steepest part of the hill, and receives the light from sunrise to sunset. Many would have hesitated about it, and many positively afraid. One's idea generally of a garden is a flat surface, and thus they are usually formed. Though not quite so steep as a railway embankment, my neighbour's garden put sone strangely in mind of one; it is not at an angle much less. If any one had to debate with himself beforehand, he would come to the conclusion that esculents could never succeed under such aspects, for they would be burnt or stunted from want of water; that the gardener's strength would be unequal to so much up and down hill. But there is no complaint on that score; and for the former a spring was known to be near the upper end, which has been led into tanks, so that the ground can at any time be thoroughly wetted with a hose. The vegetables were all in fine condition, even to the late Peas, one of Laxton's late varieties, the Onions, silver-skins, and very large. The garden is walled all round and the walls are covered with some composition laid very smooth, so that insects cannot harbour, and the fruit trees, chiefly Pears and Plums, fastened to wires strained horizontally. I groaned in the spirit to think of my old brick walls at home, honeycombed with years of hammering in nails and shreds, the nursery of every conceivable pest, and where even the Red Currant trees have declined growing, and thought how slight the knowledge of these matters was to our grandfathers and grandmothers, and how little they heeded such trifles. There was very little fruit on these trees, partly on account of the last severe spring, and partly from their being lately planted. At the north or upper end of the garden are two glasshouses, very lofty and freely ventilated, or rather they may be called one, except that the doorway being in the centre divides them, but they go the whole extent of the wall. On one side were Tomatoes, Vick's Criterion, Mammoth, and the Grape or small kind, used for bottling and preserving. They were beginning to ripen, and hung in beautiful clusters; the shoots extended quite up to the roof, so that the wall appeared one mass of leafage. I observed to the gardener that I perceived he did not cut them nor remove side shoots; he merely replied that he "wanted fruit," by which answer I concluded he only wished for quantity, not quality. I still think they would have been better had some of the side shoots been removed. The other side had Nectarines, and in front of them close to the lower ventilators Plums (Coe's Golden Drop) trained inwards upon wires. On one side of these houses, towards the east fortunately, an old coppice existed which has been left so that the trees are close above the wall, and afford great shelter. In front of these houses are Melon frames and propagating frames with heat below; they are quite central and fully exposed, but shaded occasionally.

The greatest attention is centred in the Peach house, it is very long and high, but no great width. There are several varieties, early and late; quantities of them have been gathered and sent to market and the gardener was then dispatching eight dozen. How my parched mouth watered. How speedily it was relieved by that estimable gardener. Never was anything more grateful. Nothing else is allowed to grow in this house, but a few Peach trees are trained as before, their stems close to the wall, and the branches trained inwards and upwards, but they did not appear to me to be very successful; nothing equal to those on the wall.

The Vine house is equally cared for; there are only two kinds, Black Hamburgh and Sweetwater, both laden with huge ripe bunches. I looked closely for mildew, but not a trace could be found, nor an eye-offending spot; it would be next to impossible in such a situation and pure air. The gardener was kind enough to point out the rods he intended to remove, and the eyes from which the new rods would spring; not in every case the lower one.

Now in all these houses no heat is ever used except in the Vinery, and that is not on account of the Vines, but merely to force Asparagus in the borders, and is put on about this time at the end of the year. My neighbour has relied entirely upon pure fresh air and uninterrupted light, and the result is luxuriance and abundance. Five years ago the place was nothing but small enclosed patches, misshapen hedges, and sandbanks; all is now order and beauty.

Besides these there is a fine row of dwarf Apple trees, but they were sadly used last winter with the exception of one, a Golden Reinette; they are, however, very recently planted, or rather transplanted. They will be treated in the way now, I believe, considered the best—moved every third or fourth year, pruned back and root pruned; but I sometimes doubt whether we shall leave full bearing trees to the next comers by this system. At the present moment I prefer my own venerable sires, "green with Moss and grey with Lichens," 15 ft. or 20 ft. high, wide branching and Mistletoe hanging about, for they have never failed in cropping for five and twenty years. W. T.

TOWN GARDENING.

WINDOW GARDENING.

EVERYONE has not a garden, and but few can indulge in the luxury of a greenhouse, but every one has at least a window or two that can be utilised for growing flowers, either inside or outside or both, and what can be prettier than a window full of well grown plants? On the window-sill outside, in pots or a box, or in the room itself, many things may be successfully cultivated in any town, however large and smoky; and we will now show what plants are most suitable for such places, and the best mode of bringing them to the highest state of perfection. But we must again here call attention to the remarks given at the beginning of these articles about attention to cleanliness, &c.; these are even of more importance here than as applying to outdoor gardening, for plants in pots and small boxes are far more difficult to keep in health, and far more easily injured by even slight neglect, than those in beds out-of-doors. So that constant, unvarying attention and care are indispensable to the satisfactory culture of plants in windows; more so, indeed, than in any other situation.

There is no excuse either for any neglect of the plants, for a window, or even three or four windows, hold comparatively so few, that it is easy to attend to them as they should be attended to; while, where greenhouses are employed, and many hundreds, or perhaps thousands, of pot plants grown, it is excusable for some to get overlooked or neglected sometimes. Remember that a day's or even an hour's neglect in critical periods will often undo and spoil the results of months of previous watching and care.

In window gardening there are some things that must always be kept inside; some that, protected from the cold of winter by being placed inside, may be exposed to the open air with advantage in summer; and some again that will stand the exposure outside both in winter and summer, but there are very few of these last. If plants are grown inside the window, it is absolutely necessary that there be no gas burned, not only in the room itself, but in any part of the house, except, perhaps a very distant portion. Even in the sweet country air, gas sadly injures anything that comes in contact with its fumes, but here, where everything is against them, it is certain death to almost every kind of plant if exposed to its influence for any length of time. Even where no gas is used it will be found difficult to get more than a very few plants to flourish and look healthy in an ordinary living or sitting-room. The air, always dry and harsh in towns, is still more so in a room where a fire is often burning; the air is often close, for if the window is much open the "blacks" come in so badly. Always dusty, the air is still fuller of particles where people are always moving about. All these things are against the plants, but do not despair. Study their wants and requirements, do the best you can for them, and you are sure to succeed with something. The best place is a room not very much used, where the air is still and not so very dry. The window should look south or in a southerly direction to suit most flowering plants, but an east or west aspect will do for most things almost as well; and Ferns, even some greenhouse Ferns, will flourish as well in an east, west, or north aspect as in a more sunny position, perhaps better.

All plants should be kept as close as possible to the light, that is, to the glass, and by no means crowd them together. Four or five good sized plants are quite enough for an ordinary moderate sized sash window, unless you have a proper stand, and another rank behind the first. Unless used to gardening operations, do not try a lot of delicate things at first, at least, though you may be fond of them; far better have only good hardy plants, such as Geraniums and Fuchsias, until you have got the knack of managing them, when you may, if you like, go in for something more ambitious. Lists of the most suitable plants are given a little farther on. The main thing after the plants are once established is to keep them clean. In summer when it rains gently place your plants out-of-doors to get their leaves washed and enjoy the beneficial effects of a shower; and in winter take them into the back kitchen or yard or other suitable place, and syringe them or shower them overhead well with a fine-rosed watering-pot, or even a good sprinkle with a brush will do in default of anyting better, using clean water at a temperature of 65° or 70°, or tepid. If you can get it, always use soft water for plants, both at the root or otherwise, in preference to any other.

All plants should be potted in good fresh soil at least once a year, and the material used should be of the very best description. Full directions regarding composts, &c., have been given. A bushel of good potting mould can be purchased at any nurseryman's for 1s.; this will fill a good many pots, and will be a shilling well laid out; be sure and tell the man what kind of plants you want it for. About the best mixture for the ordinary run of window plants is three parts of good fibrous loam, and one part each of leaf-soil and well decayed manure, with a good sprinkling of silver sand and a little crushed charcoal to keep it sweet.

The best plants for cultivating inside windows are—

*Amaryllis purpurea (Vallota or Scarborough Lily).
*Aspidistra lurida.
*Begonias.
*Calceolarias (shrubby).
*Calla (or Arum) Lily.
*Campanulas.
Cannas.
*Ficus elastica (India-rubber plant).
Ficus Parcelli.
Fuchsias.
*Geraniums (Zonal).
Hyacinths.
*Lobelias.
Mignonette.
*Mimulus (Monkey Flower).
*Musk.
*Pelargoniums (show and fancy).
Primula verticillata.
*Petunias.
*Spirea japonica.
Tulips.

The above are suitable for very thickly inhabited and smoky parts, but in such districts as Brixton, Kensington, Camden Town, Hoxton, Bow, &c., or anywhere but in the heart of a large town, the above list may be augmented by the following:—

Azaleas.
*Abutilons.
*Balsams.
Bouvardias.
Camellias.
Coronillas.

Cyclamen.	Nierembergias (for hanging baskets).
Deutzias.	Primulas (Chinese).
Dracænas, congesta and Cooperi.	Roses, China and the Fairy Rose best.
Ficus Cooperi.	Smilax.
Genistas.	The Sensitive Plant (Mimosa pudica).
Heliotropes.	Thunbergias.
Liliums, of sorts.	
Myrtles.	

The most easily cultivated are marked (*). It is not much use trying to raise plants from cuttings where there is only a room and window available, excepting, perhaps, Geraniums, which will strike anywhere in July and August; or unless you have a bell-glass or two, under which you may root almost anything. Put the cuttings thickly in small pots, using sandy soil, and cover with the bell-glass, only removing it for half an hour morning and evening, and shading from bright sun; pot off when rooted. It is much better on the whole to buy a few healthy young plants and keep them as long as possible; they only cost a few pence each. But we would warn our readers against buying pot plants from the trucks in the streets, as a rule, unless you only want a temporary display. There are exceptions, of course, but in most cases these plants have been raised in a healthy country place; they are young plants grown rapidly in heat and forced early into bloom, so that they have no constitutions, and when removed into the dry and ungenial air of a town room or window speedily droop and die. Their fresh and delicate beauty is often a direct evidence of their want of strength, and the only way to save them is to place them in a greenhouse or conservatory, or even in a window case or frame, in which they may find something approaching the atmospheric conditions in which they were grown, and then to harden and gradually inure them to their new and less genial surroundings. Fuchsias especially are very often grievously disappointing when purchased in this way; at the best there are only comparatively few kinds that can be successfully grown in towns, and when naturally delicate varieties are subjected to the severe check described, the opening buds speedily drop off and the plants lose all their beauty if they do not die outright. But though it is not easy to raise cuttings, seeds of many things may be sown and successfully grown into good plants. A few suitable for this purpose are Lobelias, Petunias, Mignonette, &c. Full directions for sowing seeds have already been given.

For sunny windows have Geraniums, Pelargoniums, Lobelias, and other sun-loving plants; but if shady, Ferns, Fuchsias, Begonias, and such things would do better, and a hanging pot or two of Campanula grandiflora, Creeping Jenny, or Lobelia is always effective.

ANSWERS TO QUERIES.

4024.—Sowing Tulip Seed.—The time for sowing will be about January or February. Sow in good sized pots, and when you sow seeds do not put them flat in the earth, but put them in sideways. With care, in a few years they will flower, and be what are termed breeders. The breaking of these breeders will be a very pleasant and exciting employment, and you will stand a chance of now and then getting a gem of the first water which I hope will be the result. As to soil, they grow in nothing so well as in plain good sandy loam, taken from a pasture with the turf rotted in it.—H. ROBERTS.

Sowing Seeds in Windows. — Can I now sow the following seeds in my window with any chance of success—Lobelia magnifica, Papaver Rheas, and Convolvulus unicaulis? [Yes; but you had better wait another month or so. Sow in pans or pots of sandy soil well drained, and cover with a sheet of glass.]

Clay's Fertiliser.—*M. T.*—Mix a 4-in. pot full with say half a bushel of soil, and use it as a top-dressing to your Camellias, &c. It may be applied two or three times during the year if necessary for the plants.

Lingden Hazel.—See page 532.

J. L. C.—Messrs. Barr & Sugden, 12, King Street, Covent Garden.

Names of Plants.—*W. B. H.*—1, Cattleya Harrisoni; 2, Centropogon Lucyanus; 3, Eupatorium Fraseri; 4, Sedum carneum variegatum.——*Nemo.*—Begonia Waltoniensis.

QUERIES.

4081.—Spiræas Decaying.—I have several plants of Spiræa japonica, and I find that they are rotting away. I have taken them out of the soil and washed them, leaving them in water, and have repotted them, and I still find that they are going. Will anything stop the decay?—AMATEUR.

4082.—How to Propagate the Mistletoe.—Will some one who has succeeded in growing Mistletoe on trees from the seed, kindly give the needful directions? It grows freely in this neighbourhood on the Apple and Lime, and is found on the White Thorn.—D. C. F.

4083.—Culture of Eranthemum pulchellum.—I find these plants so valuable for affording a supply of cut bloom of a very beautiful blue colour, that I should be glad of some hints on their culture and propagation. What soil is most suitable for them?—HORTUS.

4084.—Azalea mollis After Forcing.—An article on the treatment of Azalea sinensis and mollis after forcing would be very acceptable to many readers who, like myself, have commenced to force these plants. Can plants forced this season be grown on and forced next and succeeding years like A. indica?—HORTUS.

4085.—The Onion Plant not Flowering.—Will some one tell me the reason of Onion plants not flowering? I have had them for months in a greenhouse; they keep growing, but show no signs of flower.—CLAPTON.

4086.—Grafting Fruit Trees.—I am thinking of planting some stocks for grafting some Apples and Pears in the spring. Would it be too late to put in the stocks now to graft in the spring? or must I wait till autumn? I have been advised to plant the Paradise stock for the better kinds, but, being an amateur, I do not understand the meaning of the Paradise stock. If any reader would give me some information I should be greatly obliged; also the difference in the Dutch and English Paradise stock and the free stock.—A CONSTANT READER.

4087.—How to Grow Cucumbers.—Will some one tell me how to grow Cucumbers? and can I grow French Beans in pots in the same house? My greenhouse has a wall at the back and one end, but it gets all the sun.—T. BOX.

4088.—Humea elegans.—I wish some one would give some hints as to the proper cultivation of this graceful plant. The stalks of mine have all turned brown. They were each potted out into a mixture of good soil and silver sand in 5-in. pots and grown in conservatory heated with hot water.—M. J.

4089.—Laying Down a Lawn.—I have a large plot of Grass which I want to convert into a tennis court, but at present it is on a slight incline, and growing coarse Grass. Will some reader say the best way of levelling it? Will it do to fill up with good mould well rolled and sow good Grass seeds? Is there any fear of the old Grass springing up through the mould which in some places will not be more than 2 in. deep? and if so, will it form a good sod by the summer?—A. H.

4090.—Erecting a Cucumber House.—I am desirous of erecting a span-roofed house about 9 ft. long by 7 ft. wide in which to grow Cucumbers, Cockscombs, and a few other flowers. I propose to heat it by means of a brick flue. Will some reader give me his experience of such a place as regards height of walls and roof? also the best means of ventilation? also the best way to have it situated, as it will not be attached to any other building? also some little advice as regards the interior and making of the beds for the Cucumbers?—YOUNG GARDENER.

4091.—Growing Mushrooms.—I have a wooden shed about 12 ft. square placed against the kitchen (stone) wall just where the fireplace is. The heat of the fire is easily felt by the hand on the wall over a space of about 4 ft. square. My idea is to place four or five shelves against this part of the wall and to curtain them round with brown paper, matting, or old carpet, so as to prevent the heat escaping; then to place on them fresh stable manure and Mushroom spawn as directed in GARDENING ILLUSTRATED of December 11. Would fowls' manure (in which I believe there is a great deal of heat) mixed with earth, perhaps, do instead of stable manure? I shall be glad of any suggestions.—H. W. B.

4092.—Christmas Roses from Seed.—Will some one having been successful in cultivating Christmas Roses kindly inform me how, when, and where is the best place and time to sow the seed with a few hints as to after management till large enough to plant out?—CHRISTMAS ROSE.

4093.—Covering Hot-water Pipes.—Will some one kindly inform me how to cover some hot-water pipes which run through a building in which heat is not desired? I thought of boxing them up with boards. Would it be safe, as the boards would have to nearly touch the pipes?—CIRCULATION.

4094.—Sowing Fern Seeds.—I find in the spring seed lists "Fern" seed quoted—common, greenhouse, and stove. Will some one inform me the best means of vegetating and growing them?—FERN LEAF.

4095.—Early Potatoes for Damp Soils.—I want two bushels of Potatoes, and should be glad to know what sort would best suit for my purposes for planting. The soil is good; it was well dug over in the autumn after a crop of Cabbage, but it lies low and damp, consequently the frost generally cuts it till late in the spring, which prevents my planting so early as I otherwise should do, and as I wish to plant that part of my garden with Potatoes for sale in the spring, I would like to know what sort of Potatoes would come to perfection in the shortest time? As the weather was favourable last spring I had a beautiful crop of early Almas, which I sold at 10s. per cwt. I have a good cellar where I could put the Potatoes on boards or in boxes, so as to get strong sprouts on ready for planting.—THE MARSH.

4096.—Celery Fly.—Will some one explain the cause of Celery fly and the means by which it may be prevented?—BETA

4097.—Worms in Conservatory Border.—Can any one tell me how to get rid of worms in a border in a conservatory? they come out at night and tear the Lycopodiums sadly.—E. S.

4098.—Books on Botany.—I should feel obliged to any correspondent of GARDENING who will furnish me with the names of any small books suited to excite in children a taste for botany.—MISS V.

4099.—Hyacinths in Glasses.—I have a fine Hyacinth bulb in water; the roots are half-way down the glass, and seem strong enough, but lately they have become brown at the ends, and their growth seems arrested. I think the spike is going to be very small in consequence. What should I do?—M. C. K.

4100.—Manuring and Planting Fruit Trees.—Will some one kindly give reply to the following? I have a small garden devoted to fruit and flowers. The soil is rather a heavy loam. What artificial manure, solid and liquid, can be recommended, from experience, for general purposes, upon such soil mentioned? and how and when should they be applied? I have neither room nor inclination to store a heap of dung or leaves to rot into manure. When and with what is best to manure Gooseberries and Currants? Are soap-suds and house-slops useful? and should they be used diluted? I wish to grow some fruit trees against a wood fence having a south aspect. There are at present several Chestnut and Oak trees about 15 ft. high in the border of this fence. Must these trees be removed to render the border fit for the fruit trees? and what fruits will be most suited to this position? I am about 10 miles south-east of London.—CLARION.

4101.—Amarantus caudatus.—Some years ago in Florence, in the little garden of the Piazzo Santo Spirito, I saw some very remarkable specimens of the Amarantus caudatus or Love-lies-bleeding. They had a bare, hard, woody stem, about 5 ft. high, above which was a flat, spreading head some 3 ft. in diameter, bearing great crimson racemes of flowers, 1 ft. and more in length. They were planted in a circle near the centre of the garden, and formed a very grand effect. Can any one tell me how they could have been grown? I thought it probable they had been treated in a similar way to the Tree Mignonette. It would be an experiment well worth trying by one who has space and time for it.—W. D.

4102.—Transplanting Pear Trees, &c.—I have some Pear and Apple trees about twenty years old, and some large standard Roses standing on ground now required for buildings. I should be glad to save them, the former especially. The subsoil of their intended site is brick earth; the surface soil about 2 ft. deep is a good stiff loam in good condition. How deep should I make the holes? how provide for drainage? and with what compost would it be best to fill in the holes? I have plenty of turf, turfy loam, and old hotbed manure. Should the trees be cut back?—M. M.

4103.—Plants for Greenhouse.—I have just built a glasshouse at the end of my dwelling, N. E. aspect, and opening out of my drawing-room by casement doors. I want to fit it up with creeping and hanging plants that will thrive well with such attention as a lady can give independent of a gardener. I thought the two ends of the glasshouse might have cork fitted on to them, and Ferns growing in it, but I do not know how to proceed. I ought to say that I wish to keep the floor as clear as possible. I have a stove fitted which will be used in cold weather. The house with lean-to roof is nearly 16 ft. high and 16 ft. long.—F. E. G.

4104.—Salt as a Fertiliser.—I have a garden of bush fruit (Gooseberries, Currants, and Raspberries) and I wish to dress it with salt to act as manure, and also to kill insects, with which it is infested. Please say the largest quantity I can use with greatest benefit on every 8 square yds. (or space of 8 ft. by 9 ft.).—J. T. W.

4105.—Propagating Mulberry Trees.—Can any reader inform me how to propagate the Mulberry tree from seed or from cuttings, and where I could procure them, as I am going to North America? and I should like to take a few specimens with me for a particular purpose? If any one could tell me of a mode of packing a few cuttings, so as they would take root when I get over there, which will be about the beginning of March, they will greatly oblige.—AN EMIGRANT.

4106.—Insects on Plants.—Would paraffin used, one wineglassful to four gallons of water, kill green fly and not injure the plant? I read somewhere of Castile soap being effectual; could any one say what strength to use it without hurting plants? I want to dress Rose trees, &c., in greenhouse.—ONE IN TROUBLE.

4107.—Lilacs in South Africa.—I have just succeeded in introducing the Lilac here. I shall be glad if any one will inform me how to cause it to bloom in pots, and if it would die after flowering.—W. ADAMS.

4108.—Planting Mistletoe.—What is the best time for planting the seeds of Mistletoe in the bark of Thorn or Apple trees?—W. D.

4109.—Begonias for Bedding.—Should tuberous-rooted Begonias intended for bedding out be started into growth in a hot-bed? and when?—W. D.

4110.—Propagating Begonias.—What is best way of propagating tuberous-rooted Begonias (not by seed)? Can it be done safely by dividing tubers? When is best time for taking cuttings and treatment of cuttings?—HEATH END.

4111.—Double Geraniums not Flowering.—How can I get a double Geranium to flower? I have a very strong pink one, and each year it is full of leaf, but very little flower. Last spring I divided it and took all the slips off, and now it has a lot more (and leaves too), although it has been in a cold room all the winter, and there has only been a fire two or three times. It is in a large pot, but I could not get the roots into a smaller one. It is provoking to see it so strong, and have no flowers, for any there may be die off so soon; it was in the garden all the summer.—BEE.

4112.—Pea Oxford Tom.—Where can I get that good old Pea, as I do not see it in any catalogues now?—NESS POINT.

BEES.

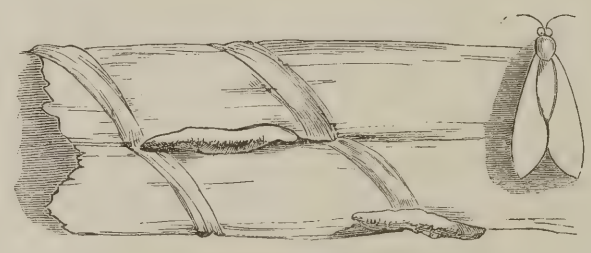
THE WAX MOTH.

(TINEA MELLONELLA.)

MANY persons, even in the country, who keep bees are quite oblivious as to the cause of their continuously loosing stocks one after the other. They turn up a hive, suddenly found empty, and find a quantity of maggots inside, never imagining a little insignificant moth has succeeded in laying its eggs inside and driven the bees entirely out of their home. The author of the "Bee Keeper's Manual" speaks of this insect, and it is to be regretted he had not experienced its ravages, or he certainly would have given more information, and perhaps found some remedy. The writer of this article constantly visited hives and saw his methods ; he also assured him he had never seen any wax moths about his hives.

In some places they are too abundant to be pleasant, as and for many years I have invariably lost one or two stocks from wax moths.

As far as it is possible for me, I can suggest one or two matters that will prove useful, and it is as well that so important a subject to those who keep bees should be constantly ventilated. so that possibly some one may find some method whereby the bees may be thoroughly protected. The male of this moth is about ½ in. in length, the female rather small, but far more active ; she is rarely seen before June and is not absolutely dangerous till later, the reason being the bees are continually clustering at the mouth of the hive, or swarming, at which time the moth knows it is useless to attempt to enter. They are both cream colour or rather whitey-brown all over, the under parts shining like silver. They are extremely delicate ; so much so, that if taken and crushed with the finger and thumb, no perceptible substance can be felt. When the bees commence their steady work after swarming is the time when they may be seen about the hives. Their flight is very short, but they run or glide with great rapidity, generally making for the mouth of the hive, getting as near to it as the bees will allow. Now and then a bee will make a dart at the enemy, which they avoid by a motion of great rapidity. Now, if one of these moths obtain entrance, the doom of the hive is certain ; they begin at once to deposit their eggs, and by autumn the bees will have deserted the hive.



The Wax Moth (Tinea melonella).

It is quite evident that the moths at such time were not reared in that hive ; they were either produced in some ruined hive which has been allowed to remain open, or the cocoon containing the grub was deposited somewhere about the hive—sometimes underneath the floor board, oftener deposited between the straw bands, as in the illustration. When the moth obtains a footing inside, the eggs are deposited in the same place, from whence the minute grubs work to the comb which they soon destroy, and when they form their cocoons they take up the same kind of position inside ; a favourite place for them is round the bottom of the hive. I have seen the lower edge inside with a complete row of them all round ; in this state they are difficult to detect, as they become covered with small particles of wax or propolis.

At the end of summer, then, every hive should be carefully examined all round the stitches and bands, and any cocoons extracted with the point of a knife ; the floor board also should be well brushed underneath, and powdered with Tobacco powder, and any place outside at the bottom where they could find entrance stopped. A good plan is a band of calico soaked in clay puddle and strained tightly all round. In straw hives on the depriving system the hole at the top must be examined, and the cork well fitted, as the smallest crack is sufficient for the grub to enter ; for when the moth is unable to do so the eggs are deposited in all places where there is a chance of admission to the grub.

As a general rule, strong stocks are safe, as the population enables a numerous guard to be always at the entrance. Weak stocks, on the contrary, are those most certain to be invaded. Whenever the bee keeper has leisure, he should examine his hives towards evening in summer, and destroy any moth he may discover. It is certainly difficult to catch them, as when still they are hardly visible on straw, which is so nearly the colour of the moth.

If it should be found that a hive is suffering from the moth, no time should be lost in driving into another hive ; and if a stock is hopelessly lost, smoke the hive to prevent any moths escaping, carry it away and burn the entire comb, scrub the inside well, when it may be used again if thoroughly clean ; but I have been assured, by a person who kept bees for many years, that it is not safe to use for two or three years after. That may be just possible, but I have successfully hived bees in well cleansed hives that had suffered from wax moth the year following, but in the case of old hives, it is best to burn the whole at once. W. T.

Dorset.

POULTRY.

Heat for Hatching Chickens.—On p. 530 of GARDENING, under the head of "Heat for hatching eggs," I note there is a disparity of opinion. As I have had a great deal of experience with hydro-incubators, I may state that the difference in all probability arises from the fact of the temperature being taken at different levels. If a carefully registered thermometer is placed on a level with the top of the eggs in the egg-drawer, the correct heat for hatching is 104°. At this level an egg will not incubate below 98°, and it stands a great chance of being spoilt if the thermometer rises for any length of time and stands at 108°. For the first ten days eggs do not require much change of temperature, and they can endure more heat. At that period the lungs of the chicks begin to work, and a supply of fresh air is required through the shell. It has lately been found out that by placing quicklime in the drawer of the incubator that the air is greatly purified and the chicks come to maturity much stronger and healthier. People who had worked most carefully with the incubator failed to obtain a good per-centage of live chicks. After employing the lime in the drawer they hatched strong, healthy chicks out of every fertile egg. Mr. Lemoine in his work upon incubation states that he invariably changes the nest under each hen three times during the twenty-one days and places sulphur under the straw. To such a pitch of perfection has he carried it, that if he finds the hens are not giving off sufficient warmth (in his opinion), he crams them, and so forces them to take more nourishment.—T. CHRISTY, *Malvern House, Sydenham.*

BLACK HAMBURGHS IN SMALL SPACES.

IT is with much interest I have read in GARDENING the notes on prolific poultry, poultry for small spaces, &c., and now that the year 1880 has closed, I will as briefly as possible give details of the few I have kept for twelve months. Four hens and one cock I had from January to third week in March ; then I bought two more pullets, one of which got hurt in the beginning of September, and I thought it best to kill it, leaving five and a male bird, which makes an average for the twelve months of rather over five hens kept besides the male bird ; these were black Hamburghs, and have been closely confined in two pigsties covered with netting, making a run of the two yards each 6 ft. square. I put light doors to the two inner places with a square hole cut out of front bottom corner for an entrance. One of these places they roost in, the other has four wire cases half full of sifted ashes in which they lay, as I find it does not harbour insects as hay or straw does. The floors of the inner places are also covered with ashes, so that in cold weather they always stand warm, and in hot weather it keeps down insect life. Every week all through the summer I sprinkle quicklime in the boxes and about the roosting place, now and then putting a little flowers of sulphur among the ashes in the boxes, and the outer places well washed out nearly every week, and the fowls have always been in splendid plumage, and not any one of them has wanted to sit since I have had them. Their food for first morning meal consists of the Potato parings from the previous day, boiled, and when done all the water well drained away, then mashed while hot and mixed with sharps to a consistency almost dry and quite crumbly ; this they have warm, and their second meal consists of Barley one week, and Indian Corn the next. They have all scraps from the house and bones to pick, and when I can get it, a bit of horseflesh which is boiled and cut up small, the Grass off lawn, and Cabbage leaves, and a shovel full of lime riddlings I occasionally throw into their place. The undernoted statistics may be useful to amateurs like myself. Every evening I have put down what eggs come in in the day, and each week put down cost of food.

1880.	Eggs from 4 hens.	Average eggs per hen.
January.	19 ,, ,,	5 minus 1
February.	42 ,, ,,	10 and 4 over
March.	94 { 42 from 4 hens to 15th. / 52 from 6 hens to 31st.	{ 10 and 2 over / 9 minus 2
April.	104 from 6 hens.	17 and 2 over
May.	144 ,, ,,	24
June.	134 ,, ,,	22 and 2 over
July.	129 ,, ,,	21 and 3 over
August.	120 ,, ,,	20
September.	82 from 5 hens.	16 and 2 over
October.	24 ,, ,,	5 minus 1
November.	11 ,, ,,	2 and 1 over
December.	36 ,, ,,	7 and 1 over
Total.	939	

I have paid out of pocket for keep for the twelve months £1 9s. 9d. ; and price of eggs here has never been less than 1d. each, and for some time 2d. ; we have never had to buy, and have given many away, and also sold some. Not having had the same number of hens all through the year it is somewhat difficult to get a correct account of the number of eggs per hen per annum, but as near as it will come is about 175. I think it very fair for a commencement in keeping a few fowls.

HOME PETS.

Changing the Colour of Canaries.—In answer to "Mervyn," cayenne pepper does change the colour of canaries by bringing them from yellow to orange. As to injuring them, opinions differ, some holding that it does others to the contrary ; probably sufficient time has not been given for experiment and close observation. I know the canaries like the pepper and eat it greedily, but "Mervyn" must understand it is only effective while the birds are moulting ; it does not at all interfere with their song. However, if he likes to try it the following is my recipe : Boil an egg very hard and then chop it up, shell and all, very fine. Pound in a mortar two or three sweetish biscuits, then put in a large teaspoonful of pepper (best Natal), mix with a knife to crumbly state. It will keep fresh two or three days. It will be necessary to give the birds a little canary seed at the same time.—JOHN PEARSON.

Insects in Birds.—In reply to "Myra" and "Beta," also for the benefit of any reader who keeps birds, speaking from experience, I may say that Keating's insect powder is very effectual and thoroughly harmless to birds of all kinds. Some time since I bought a lark at a bird shop ; when I got home, to my disgust, I found it "alive" with insects. I immediately shook a lot of Keating's powder under the wings and worked it well into all parts of its body. I repeated the dose twice afterwards, and had then completely rid my bird of these pests. If the cage is much infested, I would advise washing it thoroughly with strong saltpetre water very hot, sprinkle the bird with powder, and use some powder about the cage and in the sand for some two or three weeks.—FERNDALE.

Treatment of Love Birds.—How should these be fed ? and with what food ? Do they require green food ? Any information as regards their treatment and management will be thankfully received.—J. J.

Canaries.—My canary has a wen on its back, just above the tail, about the size of a canary's egg What is the cause of it, and how am I to cure it ?—MAJOR.

GARDENING

Illustrated.
For Town & Country.

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REGISTERED FOR TRANSMISSION ABROAD.

MAGNOLIAS.

MAGNOLIAS, where they succeed, are among the grandest of flowering shrubs or rather small trees. Unfortunately, the evergreen species are not sufficiently hardy to thrive without protection in winter, except in the more southern counties, and even there they make but slow progress as standard trees. M. grandiflora, which we now figure, one of the finest of the whole family, succeeds against a south wall in most parts of the kingdom. In Dorsetshire and Kent are grand trees of it 30 ft. high, and if the wall against which they grow were higher, they seem capable of attaining a height of 50 ft. I have cut from it repeatedly growths 6 ft. long which were overtopping the wall, and, curiously enough, those succulent branches never receive any injury from exposure to frost and north winds; hardiness seems much to depend on the protection given to the roots and boles of the trees. Of all the varieties of Magnolia, M. grandiflora exoniensis is the best; its foliage is of a paler green than that of the species, more regular in shape, the margin recurved, and the under side more thickly covered with a brown tomentum; it is a most prolific flowerer, and continues in bloom from June to October, and even later in favourable seasons. The ordinary M. grandiflora is a more robust plant altogether than exoniensis; it has more shining, Holly-green foliage, which is not so handsomely shaped and broader than that of exoniensis, and it does not flower so freely, but it sometimes ripens its seeds, which exoniensis does not. M. grandiflora may be readily propagated by means of layers, and it will grow in any well-drained soil—a sandy yellow loam seems to suit it perfectly. M. tripetala, a deciduous species, sometimes called the Umbrella Magnolia, makes a very handsome lawn tree; it forms a round-headed specimen, 20 ft. high and 30 ft. in diameter of branches. When old these attain a pendulous habit, the points turning up again like the branches of a candelabrum. The leaves, which are large and handsome, are arranged in whorls round the points of the branches, and, hanging down by their own weight, are not unaptly likened to so many parasols or a huge candelabrum. Suckers from the root of this species made growths in a season 5 ft. long and as thick as one's thumb. The flowers which appear in spring are white and very large, but by no means beautiful, nor do they possess the most agreeable scent. This species seeds freely here, and the seeds, which are like small Coffee berries, are enclosed in a red pulpy coat, which is again enclosed in a pod. Sometimes two seeds are in one pod, and these pods are arranged on a terminal spike something in the form of a cone; the pods open like those of the Furze, and the seeds drop out in November. Seeds of it are obtained in abundance in France. Of Magnolia purpurea, which is a free-flowering deciduous species, the variety called gracilis is the best; it is of twiggy, pendulous habit, and makes a handsome floriferous shrub when grown in a situation which suits it. The flowers, which are pale purple in colour, open in May and June, and last a long time on the tree, or when cut in glasses. I have not seen it ripen seeds. I have many plants of it growing in different situations, and I find that it does not succeed well in dry, exposed localities, or in dry soils. In a shaded, moist position it develops its foliage much more satisfactorily, and every twig is terminated by a handsome pendulous blossom. Our best bush of this Magnolia is associated with some very fine specimens of Rhododendrons, which make foliage more like that of a common Laurel than a Rhododendron. M. glauca is a handsomer plant than the kind last named so far as foliage is concerned; it requires a moist and somewhat shaded position.—E.

MAGNOLIA GRANDIFLORA.

MY GARDENING FAILURES.

For the sake of "Disappointment" and other ignoramuses like myself, I give the experiences of one who has culled what slight knowledge he possesses from experience and Gardening Illustrated.

Three years ago I began gardening with a small greenhouse about 11 ft. by 9 ft. without any means of planting out, the greenhouse being some 12 ft. about the ground and built on a balcony. I have no frames, or means of storing moulds, &c., manures, or manure water, and yet I have contrived to gain a vast deal of amusement and some success with little expense. I see to everything myself in the spare time I get, viz., between breakfast and departure for business and any spare afternoons, &c., I may have. I have a good many Geraniums and other hardy and half hardy plants and shrubs which bloom little in the winter and luxuriously in spring, summer, and autumn, some of which I plant out in the garden in summer to be brought in again when the leaves begin to fall. Climbing over part of the roof of my greenhouse (on string netting, as I have found wire netting most injurious) is a Passion-flower planted in a box covered with Virgin cork, some 2 ft. square or rather cube, which has grown to excess, and was covered with magnificent blue and white blossoms this autumn; the other part of the roof has a Lapageria rosea planted in a small pot which I bought last summer, and which has grown much, but not yet flowered, and is looking well.

There is besides a miscellany of other plants, Fuchsias, Pelargoniums, Cyclamens, Myrtles, Lobelias, Sedums, Heliotropes, Petunias, Azaleas, and similar plants (with Maiden-hair and other Ferns), all of which while giving little flower in winter, always look pretty, and bloom well in the warmer and lighter months. I find, however, that Ferns of various kinds of which I have a large quantity answer best with me, being always in good health and looking very lovely summer and winter with the aid of Virgin cork, Gold and Silver Ivies, Sedums, and a few other ornamental foliaged plants, and a fountain of fairly large dimensions made by myself at little expense, covered with Virgin cork and planted all round and about with small Ferns, Mosses, &c. I maintain about 50° of heat this time of the year with plenty of moisture about in the morning, and a shade higher temperature, giving as much air as I think good on the brighter days with the stove (a gas one with some 8 ft. or 9 ft. of 3-in. piping) going while the skylight is open, and I frequently syringe overhead, watering whenever I think needful with rain-water collected in an old cask, holding eighteen gallons or so, standing in a corner of the house, and covered with cork with Ferns, &c. By these means I find the things all do well, and have no insects; never having yet found fumigation necessary, my plants are clean and free from blight.

Occasionally in the hot months I apply a little of Fowler's very effective Tobacco powder, syringing afterwards. The plants get potted every two years or so except the younger ones, which, of course, I pot oftener and keep them from weediness with occasional stoppings and cuttings. Azaleas I find do splendidly with me, being loaded with bloom without losing much foliage, while with Roses, Heaths, Coleus, and a few others which I think are peculiarly subject to blight, I can do nothing with; this is my greatest trouble, as my ambition is to have a good Maréchal Niel Rose. I have studied Shirley Hibberd and other books, but can make little out of them, having none of the elaborate appliances used by them, and not sufficient time at my disposal to carry out their suggestions, and I now go by my own ideas and experience with what tips I can get from nursery and other gardeners from whom I get my moulds ready mixed for the various kinds of plants I require them for, and lastly, but by no means least, from what I learn from Gardening Illustrated.

Vesuvius.

—— "Disappointment" has, with other amateurs, much to blame himself, for he says he reads our paper, but it is evident does not profit by its teaching. It is sure from his description that ventilation is not thought of; he waters too much or not at all; makes too much fire or lets it out. How does he kill the India-rubber plant? Let him take heart, and, if he has the opportunity, observe the way and time a nurseryman treats his plants, if at rest or growing; notice the thermometer and moisture of the house and the ventilation; if he does so, the plant he has been to buy will be a very cheap one to him. I do not write this as a professional, but as a fairly successful amateur. What I know is through the kind efforts of various contributors of Gardening Illustrated and *The Garden*. I had bought various books written by good men, but they were what so many complain of—more catalogue than instruction. As an encouragement to him, I have grown and bloomed well one dozen Pelargoniums, five or six Fuchsias, one 6 ft. high, and hundreds of blooms. I cut 125 blooms off Cacti, white, red, scarlet, and pink; Passion-flower, white and blue, hundreds; Tecoma jasminoides, large bunches; Hydrangea with white and green leaf and large bunches of flowers (white grew too big; had to give it away); Dracænas, Maranta zebrina, Clerodendron with pink flowers, beautiful Ferns and Lycopods; Correa with pink flowers; Dielytra spectabilis, Solomon's Seal, Crassula lactea, white; Euphorbia jacquinæflora, Epiphyllums, beautiful and easy; several Aloes, some now flowering; Dendrobium nobile, splendid, now in flower; Cypripedium spectabile, just flowered, lasted quite two months, and lots of other flowers. Now I never had a chance in London; had always to be at work; so knew nothing about flowers, but that they were beautiful, till a copy of Gardening Illustrated was given me, I think the sixth number; the welcome guest was entertained, and now with a timely answer to questions can get on well.—

Stroud Nisbet.

ERECTION AND MANAGEMENT OF GREENHOUSES.

Having read at different times the experience of correspondents in building and management of greenhouses, under almost every conceivable condition, I think, perhaps, a description of my greenhouse, its position, and uses might not be uninteresting; and some of your readers even might derive benefit from the statement, which I will make as concise and clear as I can. I am owner of two dwelling-houses adjoining each other, with a garden about 20 ft. long at the back. Being desirous of possessing a greenhouse I was at a loss for awhile how to make room for one in the scanty space at my disposal. At last an idea suggested itself to me, which I carried into effect. At the bottom of my small garden, as is usual in this part of the country, stands the closets, built, of course, in a substantial manner of bricks and mortar, with lean-to slated roof. Here, thought I, is a place on which to build a first-rate greenhouse, and as nobody owns the space above, I determined to build a greenhouse on the top of the closets.

First I took off the slates and laths; then I had the back wall pulled down to a level with the front wall, about 6 ft. 6 in. from the ground; then I placed thirteen joists, of 7-in. by 2½-in. timber, across the front and back walls, having the joists long enough to project about 2 ft. 6 in. over in front; then I had a 4½-in. wall built on the top of these all round to the height of 2 ft., having boarded the floor with a lot of old 1-in. boards. I then had a layer of mortar put on, and then paved with 1-in. floor quarries, the whole grouted with Roman cement, thus making the floor water-tight. I then had a frame made of 3½-in. by 3-in. timber for uprights and top and bottom rails, filled in with ordinary sash-bars about 2½ in. by ¾ in. Having placed this on the brickwork, I bedded the frame in cement and held it well down at each corner by a strong iron bolt attached to the joists underneath, to give stability to the glass structure.

Two lights to open at the top, about 2 ft. square, and an ordinary-sized door made the frame complete. In glazing, I used 374 squares of glass, each square 9 in. by 9 in. The back part, from the wall to springing-line of roof (which, by the way, is a span roof), is boarded up with 1-in. boards, thus preventing my light looking on any other property but my own. I then purchased a lot of old 2½-in. wrought-iron steam-piping and a patent heating apparatus, with smoke-pipe, &c., all complete. I placed the heater outside and directly under one corner of the projecting part of my greenhouse. Then I carried my pipes round the inside, commencing about 9 in. from the floor with the flow-pipe, gradually reducing the height so that the return pipe only stands 2 in. from the floor as it passes the door in front and goes back to the heater below. A small tank made of zinc and fixed inside the house at about 5 ft. from the floor, connected to the heater with a small 1½-in. pipe, completes the arrangement for heating. A step-ladder of ten steps, that I can remove at pleasure, enables me to ascend into my greenhouse, which stands altogether, from ground floor to ridge of roof, about 15 ft. 6 in. Inside I have stages about 2 ft. 6 in. wide by about 2 ft. high running all round the place excepting past the door, and nine shelves to enable me to place what plants I choose as near the glass as I want. As I am only a new beginner, I understood but little about the treatment of the different kinds of flowers I was desirous to cultivate; but by constantly reading Gardening Illustrated, and by the assistance of a friend and co-partner in flowers and plants, I found no difficulty in keeping my plants all right during the very severe winter of last year.

My heating apparatus worked well; I had no difficulty in keeping the temperature up to 40° even in the coldest night we had last winter. Out of about 500 plants of different roots, we did not lose 2½ per cent., and I don't think I ever saw a better display of Geraniums, Pelargoniums, Double Petunias, Fuchsias, Gloire de Dijon Roses, Primulas, Cinerarias, Hyacinths &c., than we had at the end of March last year. I planted a Black Hamburgh Vine in a 12-in. pot, but it only produced four bunches of Grapes about ⅝ in. in diameter, and then did not ripen so well as I could desire them to have done. So as soon as I had gathered the Grapes I set to and made a Vine border outside, after the manner described in Gardening Illustrated, and have planted my Vine outside the house under the projecting front, carrying the cane through the floor into the house. I have also a Maréchal Niel Rose, which has made great progress in growth of foliage, but has not yet flowered. It looks very well, and I hope to be rewarded by-and-bye for my trouble with a good supply of bloom. This year, as far as it has gone, everything looks very promising. We have about 700 plants of one sort or another, and hope to save nearly the whole of them. Cinerarais I find rather hard to manage, having grown a quantity of plants from seed, but I hope to save about two dozen of a choice sort. I have a very fine lot of Geraniums now in splendid flower, and a few Hyacinths promising very well. I forgot to state my greenhouse runs from north to south, the front facing the east, and is about 17 ft. 6 in. long, by 8 ft. wide.

Derby. A. W. W.

Gas Lime as a Manure.—The lime used in purifying gas is good material for improving cold, heavy land, and it has the effect of killing wireworm and other insects. Four tons to the acre is the quantity usually applied. In some cases it is dug in as soon as it is put on the land; in others, left during the winter, but in all cases it should be spread immediately, for if allowed to remain in heaps, nothing will grow where they have been for some time. It cannot be used with safety as a surface-dressing to cropped ground. It may be used in old garden ground with advantage, but it must not be put near the roofs of fruit trees in its fresh state.—W. E.

Pumps Getting Frozen. — At this severe season it may not be out of place to give your readers a simple method by which they can escape the annoyance of having to thaw the pump every morning. Take out the bucket of the pump over night, and by means of a piece of strong wire hooked about ¼ in. pull up the clack in the barrel of the pump, thus letting all the water in the pipe return to the cistern or well. In the morning put in the bucket, prime it by pouring a little water in from the top and begin to pump.—T. W. Y.

Cure for Lodging of Fuel in Small Vertical Boilers.—Get a common poker made by the village blacksmith about 4 in. longer than the stove is deep. Have the end beaten into a sharp point with a barb on one side extending 2 in. along the side of the poker, and 1 in. from it. An hour or two after lighting,

if the fuel has not dropped 6 in. or 7 in. down the hopper, insert the poker, and wriggle it down to the bottom of the stove, give a half turn, and draw the poker out with a short jerky motion. I had a poker like this made six weeks ago, and have not had my fire out since. —J. O. C.

GLOXINIAS FOR WINTER.

For this purpose I recommend plants raised from seed. No one who has not been in the habit of raising seedlings of those plants can form any idea how much more vigorous they are than those raised from cuttings; and for merely decorative purposes they are far superior. Several years ago I saved seeds from a flower of great substance, and of a peculiarly rich dark crimson colour, that had not, so far as I was aware, been crossed with any other variety; but the seedlings produced flowers of all shades of colour between crimson, purple, and white, but not one like the parent; in this respect they are very variable. The plants we have now in flower were raised from seed about three years ago, and the largest are in 9-in. pots; some of the bulbs are upwards of 6 in. in diameter, and if we could have spared room to have given them a shift into 12-in. pots, the plants might easily by this time have been much larger. Of course I do not say the flowers are equal to those of the best-named varieties for exhibition purposes, but many of them are large and very pretty; I am, however, only speaking of them as decorative plants for winter. I like the erect flowered kinds best, for they are more useful for cutting. The seeds should be sown in February or March in well-drained pots, in peat and sand; fill the pots to within ½ in. of the top; press down firmly, and make the surface quite smooth with the bottom of a small pot, giving at the same time a good watering. Sow the seeds thinly and evenly over the surface, and scatter over it a little silver sand. To check evaporation, and thus obviate too much watering, place on the top of the pots a little clean Moss. The seeds are so small that heavy waterings would be likely to carry them down so deep as to prevent their growing; but by giving the pots a good watering before sowing the seeds, and a thin covering of Moss, and afterwards very little water will be required till the seeds germinate; as soon, however, as the seedlings are up, the Moss must be removed, and, when they are large enough to handle, prick them off into small pots, and grow them on in the stove or a warm pit shaded from sunshine, shifting them into larger pots when necessary.

They will begin flowering about July or August; but if the object is to grow them for winter flowering, pinch off all blooms till October, when a few flowers may be obtained the first winter. About March, gradually withhold water, and allow them to go to rest. When at rest Gloxinias are treated by many cultivators the same as Caladiums, that is, they keep them dry in the stove; but in my practice in treating them as winter-blooming plants, and of course at rest the principal part of the summer, early in June they are moved out of doors, and laid on their sides in some partially shaded corner. And I find this cool treatment seems to agree with them, for the rest is more perfect, and when housed about the end of September, they have started into growth, and are ready for potting. The second season, if well managed, many of the plants will measure from 1 ft. to 2 ft. in diameter. In potting them after the first year use a richer compost. We always use for large bulbs about a sixth part of thoroughly decayed manure with the peat, and a liberal proportion of sand and small lumps of charcoal to keep the soil open. When in full growth supply them freely with water, and maintain a moist atmosphere, and when in flower, water them twice a week with weak clear liquid manure. There is no difficulty in entirely changing their period of flowering by resting them in summer, and so having them in flower from November till March, and that, too, without any special forcing, but by simply reversing their period of rest; but, as I previously stated, I find seedlings much more manageable in this respect than plants raised from cuttings, and there is a strength and vigour of constitution about them that nothing seems to injure. Thrips will attack them, and, if not stopped at once, will destroy them; the best preventive is a moist atmosphere, without absolutely dashing much water over the foliage, with mild Tobacco fumigations occasionally, whether insects are visible or not. Any one who has a few named varieties should select three or four of the most distinct, and cross them, save the seed, and give the seedlings a trial against the older kinds. Seeds of Gloxinias may also be purchased from most of our principal seedsmen. H. R.

HOW I GROW CHRYSANTHEMUMS.

Considering the rapidly increasing popularity of this charming autumn plant, and the ease and certainty with which it may be grown and flowered, a few words as to its cultivation may not be out of place. A few years ago Chrysanthemums were very little grown, but a visit to some of the exhibitions held this season will show to what extent these have come into favour with all classes. Few could look at the beautifully symmetrical forms of the incurved varieties, or the quaint shapes assumed by the Japanese class without being fired with a wish, more or less ardent, to possess a few plants and become the happy possessor of flowers at a time when there is little else to brighten up the dreary months of the year until bulbous plants are ready to lend their attractiveness to the garden. But it is no easy matter for an amateur to choose plants of the right sort, *i.e.*, those which bloom at one time. If, perchance, he had selected Red Dragon or Meg Merrilees among his Japanese, he would find that the first-named would have flowered and been over fully three weeks before the latter would have begun to open. Such a condition of things would hardly be satisfactory. But before giving a short list of suitable kinds for an amateur to begin with, let us describe briefly the mode of rearing the plants.

About the present time cuttings should be obtained and inserted in sandy soil in small pots. When only a small number is grown "thumbs" may be employed, one cutting only being placed in the centre of each pot. The pots should be placed in a cold frame, and if during frost a mat is placed over the light no harm will come to the cuttings. If, however, no frame is available the best way will be to wait until the spring, when either the cuttings should be procured ready rooted, or if not, then a tumbler placed over them will soon cause them to start. Premising, however, that the cuttings are in a cold frame during the winter, by the middle of March the plants should be shifted into larger pots, say 4-in. ones, more loam being used in the soil with some rotten manure. They must then be returned to the frame till fear of frost is past, when they may be placed in the sunniest position in the garden on a bed of ashes.

One great secret in the cultivation of the Chrysanthemum is to have the wood well ripened, without which it is impossible to obtain fine flowers; about the last week in June the plants should receive their final shift, a compost being employed of fibrous loam two parts, and well decomposed manure one part, with sharp sand to keep the whole porous. All kinds of soils have been recommended for the Chrysanthemum. Indeed, one grower of great skill and the winner of several cups asserts that it does not matter what they are potted in, "what you give them when the pots are full of roots being the more important matter." However, the compost above mentioned will do excellently for the purpose, the pot being, of course, well drained, and the plants potted firmly. The most useful size of pot for this last shift is 9 in. or 10 in. Unless tall plants are wanted, it is better to pinch them once or twice during their growth, as this keeps the plants dwarf, a great desideratum with amateurs. Few would care to have plants 8 ft. or 9 ft. high, which in some cases will be the result if the plants are not stopped. From the time the plants receive their last shift until the middle of August, all that they need is careful watering and having strong stakes to support them. If green fly makes its appearance, a little snuff dusted on the parts affected, and afterwards syringed off, will soon disperse this pest.

Strange as it may seem to the uninitiated, August is the most critical part of the whole time of growth to the exhibitor. Towards the end of this month a small or first bud will appear at the end of each shoot, and unless this is taken it is almost useless to expect flowers fit for exhibition. Taking the bud is performed as follows: As already said, a small bud will be seen at the extreme point of each shoot. Round this will also be observed three or four growths, which if not taken off would, of course, outgrow and render it useless. All these growths, therefore, must be removed as soon as long enough to lay hold of with the finger and thumb, this operation causing all the energy to be thrown into the bud. This latter grows very slowly and surely, throwing as a rule a fine flower by the middle of November. It is not advisable, however, to take buds which are seen before the middle of August. When the buds are taken the pots will have become full of roots and the plants will want feeding. All kinds of patent manures are suggested, but the best and safest perhaps for an amateur is guano. This used at the rate of an ounce to a gallon of water with a little soot in it may be given to the plants twice a week for three or four weeks, plain water (soft, if possible) being employed on other days. After this the liquid may be given every other day till the buds show colour, when its use should be discontinued. Earwigs should be watched for at night, as they soon damage the buds if allowed to go unheeded. By the middle of October the plants should be placed either in the greenhouse or indoors in the lightest position possible, and a display of fine flowers will reward the grower for all his trouble during summer.

A dozen plants, six Japanese and six Incurved, all blooming as nearly as possible at the same time, may be given as follows: *Japanese*—Elaine (white), Triomphe du Nord (red-chestnut), Baron de Prailly (rose), Gloire de Toulouse (rich light purple), Peter the Great (lemon-yellow), and James Salter (lilac). *Incurved*—Mrs. George Rundle (white), Mrs. Dixon (yellow), Mrs. George Glenny (sulphur), Nil Desperandum (dark red), John Salter (red-cinnamon), and Lady Talfourd (lilac, silvery back). These varieties are tried and well known, and are almost sure to succeed. But with regard to the Japanese, they should be pinched for the second and last time in the beginning of June. The cultivation of Anemone-flowered, reflexed, and Pompone varieties is similar to the other incurved and Japanese kinds, the only exception being in the case of Pompones, which should not be disbudded at all. H. A. R.

Chinese Primulas.—Seeds of these sown in March, in pans previously prepared, and forced in a gentle bottom-heat under a square of glass, with slight waterings when the soil appears dry, soon germinate. When large enough to handle they should be pricked off into large pans filled with a good compost, consisting of two parts turfy loam, one leaf mould, one rotten cow dung, and a good sprinkling of silver sand, all well mixed together before being used. When pricked off they may be replaced and kept close for a day or two until they root into the soil, which they will soon do if kept close and warm. When they have made three or four rough leaves, they should be potted off into 3-in. pots, small and large, according to the strength of the plants. They should then be placed in a pit or frame by themselves, when they should receive a gentle watering to settle the soil about the roots. Keep them close for a few days, when air may be given in the daytime; and, as the weather becomes warmer, a little air ought also to be left on at night. A little light shading during bright sunshine will likewise be of advantage to them. Under such conditions, they soon fill their pots with roots, when they should be shifted into 3-in. pots, and placed in a cool frame; and, if facing the north, all the better, inasmuch as shading will not then be needed, but if facing the south, the lights may be whitewashed, and tilted on their sides, care being taken to have them so that wind will not injure them. Plants treated in this manner will show bloom in September, and, if required, may be allowed to flower at that time; but if not, the flower-stalks should be picked out as they appear. In October, they should be removed to a light airy house, at the same time giving them a top-dressing of rotten cow-dung, broken into small pieces. The latter will be found to afford them great assistance. In watering, care must be taken to only give

just sufficient, as damp is their greatest enemy. Plants, treated as has just been described, will bloom from November to February; and, by sowing for succession again in May, and growing them on as the others have been, this Primula may be had in bloom till next May if well attended to.—W. W.

TENDER ANNUALS FOR THE GREENHOUSE.

SEEING the great dearth there is of greenhouse plants that bloom during the summer and autumn, and the few available for decorative purposes at those seasons, with the exception of Fuchsias and Pelargoniums, it has occurred to me that a list of such plants as may be raised from seed sown in March or April, together with a few remarks thereon, may be of service to readers of GARDENING. One advantage in growing plants of this class is that they can be got up quickly at a very small cost, and as fresh ones can be raised every spring, there is no necessity to winter them, a great consideration with many who have only very limited accommodation under glass, and who therefore desire to make the most of the room they have.

Amarantus tricolor, salicifolius, and Henderi are very desirable, and come in admirably for room decoration, but to fit them for this purpose they must have plenty of light, so as to impart to their leaves those rich, brilliant tints of colour for which they are so justly admired. Not only must they have an abundance of light, but the atmospheric moisture should be in proportion, otherwise they are sure to suffer from the attacks of red spider, to which they are very subject, and which, if not kept in subjection, soon spoils their beauty. The best and easiest way of growing these Amarantuses is to plunge them in a pit or frame by themselves, and keep them well syringed overhead, and if this is done daily at two or three o'clock when shutting them up, they will soon make handsome little specimens that will be highly ornamental in the greenhouse or conservatory. Being moisture-loving subjects, they should have plenty of water and free drainage to admit of it passing away quickly, and this, with a rich loose soil and liquid manure occasionally, will keep them in perfect health till cold weather sets in, when they begin to die off. Seeds sown in April in heat will soon be up, and, in potting off the plants, the most promising only in point of colour and habit should be selected, as they are very sportive in their character, and vary much in their markings.

Globe Amarantus.—The flower-heads of this resemble those of Clover in shape and size, and are rich and varied in colour. The group to which it belongs contains plants well deserving of cultivation; when well grown they form neat, branching, bushy little plants, varying from 1 ft. to 2 ft. high, each shoot terminated with one or more symmetrical globular heads. These, if cut before they have attained their full size and maturity, will retain their fresh-looking appearance for a considerable period, and are, therefore, most useful to mix with Everlastings and Grasses of different kinds, with which they associate well and do much to enliven. These Gomphrenas are of easy culture, and do best when growing if placed in a pit or frame where they can be plunged in a bed of gently fermenting material, the genial moisture from which, being discharged with such regularity, just suits them. The next situation most agreeable to them is a warm house, where they can be placed away from draughts or dry currents of air, and kept syringed occasionally until they show flower, when any damping overhead should be at once discontinued. To have fine masses of them, the best way is to put three plants triangularly in 6-in. or 8-in. pots, and, if the different colours be grown together, they form a pretty contrast, and have a much better effect. Those that blend best are the purple and white or purple and yellow, both of which come true from seed, which should be got at once and sown in a brisk heat, and the plants nursed on in the same near the glass so as to keep them from drawing up weakly and spindly. They delight in a rich vegetable soil, and require plenty of water all through the season, the want of which soon causes them to present a starved appearance, and prevents them from producing their blooms with anything like the freedom or size they otherwise would do.

Browallias (elata and Roezli) are most valuable for blooming late in the autumn or through the winter, which they will do freely if kept near the glass in a temperature varying from 50° to 55°. For working up into bouquets they are unsurpassed, their slender stems and numerous lovely small blue or white flowers rendering them particularly well adapted for that purpose, and, what is equally in their favour, they are very lasting in water, as, when using them last year, I found at the end of a week they were as fresh as ever. As pot

Browallia Roezli.

plants, too, they are exceedingly ornamental, and, in order to have a regular succession, seed should be sown about the middle of June and again at the end of August or even later, which will carry on the supply up to the following April or May. Those sown first will do best grown outdoors after they have got a fair start, which should be afforded them by keeping them close in a frame for a few days after being potted, when any sunny sheltered position will suit them. Being rather spare and fragile in their habit, they produce the finest display by being placed three in a 7-in. or 8-in. pot; but those required for winter work may with advantage be confined to a size smaller, as then less water and root room are required. During the summer months they require a free use of the syringe, as in hot weather they are subject to red spider, which, if allowed to effect a footing, soon spoils their appearance.

Rhodanthe Manglesi is one of the prettiest of all annuals for decorative purposes indoors, and forms charming, neat little groups for small stands or vases, where, when laden with lovely pink, satiny-looking flowers, it is highly effective. The newer variety, named Prince Bismarck, is likewise very desirable, being more double and having the merit of lasting longer in bloom. To get them to bloom early in spring, at which time they are most valued, seed should be sown in August, and the plants wintered on light airy shelves near the glass in a warm house where the temperature does not fall much below 50°. Raised in spring they will flower in two months or so hence, and last till late in the autumn. Rhodanthes delight in rich vegetable soil, and should be potted in a mixture of at least half leaf-mould or peat and loam in well-drained pots. Any cold frame, where they can be shut up early, will suit them at this season if not kept far from the glass.

Celosia pyramidalis produces splendid feathery plumes, ranging in colour from bright crimson to pale yellow, and the plants are of singularly graceful habit, the inflorescence drooping over in the most elegant manner, and having such a velvety appearance, they are exceedingly showy and attractive. Compared with these, the old Cockscomb, from which these originated or are allied, is a stiff, formal-looking plant, and is fast losing favour, as these are so much better in every respect. When well grown they form grand-looking decorative subjects, and are most valuable either for the greenhouse or conservatory; besides which, they are especially suitable for cutting, as, owing to their peculiarly dry nature, they last quite fresh-looking for a considerable length of time either in or out of water. Seeds sown now will afford plants that will come in towards the end of August, and these in a warm house will last in full beauty till quite late in the year. No place suits better to grow them in than a pit or frame, where, if closed early and heavily syringed, they will keep clean and soon make fine plants. Their habit is so symmetrical and their growth so uniform, that they require no stopping or training, and should be allowed to take their own natural course entirely, as it can in no way be improved.

Martynia fragrans is a very desirable annual for pot culture, affording large, tubular, Gloxinia-like flowers that are beautifully spotted and marked, and altogether of a very showy character. Being somewhat tender, it is necessary to raise it in heat and grow it on in the same temperature till it comes into bloom.

Balsams are too well known to need a word in their favour, as they are grown more or less successfully in almost every garden, and if a good strain be obtained, and the plants well managed, nothing is more showy and beautiful than those of the Camellia-flowered section; besides having blossoms of great size and fulness some of them are as handsomely marked as a Carnation, while others are of a brilliant self colour. To have fine, sturdy, well-furnished specimens, with the lower branches resting almost on the rims of the pots, they must be grown in full sunlight, close up to the glass, and have plenty of air on all favourable occasions. This will keep them stocky and short-jointed, so that every branch and lateral will stand stiff and erect without any support, as all Balsams should. To grow them really well they require a little bottom-heat, such as may be afforded by any gently fermenting material, and at every shift into larger pots they should be dropped lower, so as in the end to bury up the stems to the first joint. So gross-feeding are they in their habit that they will take almost any amount of liquid or solid manure if administered in a mild form and at proper and suitable intervals of time. When large plants are required it is a good plan to pick off the first bloom-buds that show, as then their strength and energy are concentrated in developing growth and in becoming better established.

Petunias.—Of the many plants that may be raised from seed and got up to a flowering state in a very short space of time none are more generally useful than the double Petunias,

Dwarf Single Petunia.

which, grown in pots in an open position outdoors, flower with the greatest freedom when brought under glass, and, being so rich and varied in colour, do much in making a house gay and attractive. Even the single forms are deserving of cultivation for the same purpose, so beautiful are their markings, many of them being marbled and striped in the most fantastic manner possible. By keeping them plunged in a sunny spot they can be brought in as required, and a constant succession kept up till Christmas or later. If sown early in spring they may be had in flower two months hence, but if large plants are required the way is to nip out the points of the shoots and give them a shift into

larger pots. The soil that suits them best is a good fibry loam, in which they should be potted firmly and not over-drained.

Lantanas are exceedingly showy, free-flowering plants that come in admirably during the summer and continue on till quite late in the year. The trusses of these are generally borne in pairs and have much the appearance both in size and shape of Verbenas, but are richer in colour, and the habit of the plants more bushy and woody. For greenhouse or conservatory decoration they are of great value; the only drawback they have is that they are anything but pleasant when touched or rubbed against, as they then exhale a rather disagreeable odour. Seed should be sown in spring, and the plants pushed on in heat in full sunshine, as it makes the growth short-jointed and hard, and induces an abundance of flowers.

Schizanthus papilionaceus and retusus form beautiful pot plants that bloom profusely and are highly ornamental, especially the first-named, the flowers of which bear a close resemblance to butterflies, so rich are their markings. Both varieties are very bushy in their habit, and range from 1 ft. to 2 ft. high, so that they are well adapted for small houses and for window decoration, where, from their gay and varied colours, they are sure to be highly appreciated. Sown in autumn, they are easily wintered in an ordinary greenhouse, and then come in at a time when flowers are scarce. To have fine specimens they should be grown three in a pot, and if of mixed colours, as they are almost sure to be, they will be all the more interesting and make a better display. Schizanthuses are plants of very easy culture, and will do well in almost any kind of soil that is open and free.

For the roof of the house where a few strings or fine wires can be strained Ipomœas may be grown, but these must have a sunny position assigned them to induce them to flower freely. Tropæolums, too, of the better class form showy roof-climbers, and when restricted for root-room, as they are in pots, are exceedingly floriferous, so much so, indeed, as to be rarely out of bloom. It will thus be seen that by the expenditure of a few shillings for seed, a greenhouse may be filled with gay flowers to take the place of Camellias, Azaleas, Epacrises, and such like when they are set out-of-doors to ripen their growth. Besides those enumerated, there are many others that might be mentioned, but these are some of the best. S.

Wintering Bedding Plants.—I never had bedding plants in better condition at this time of the year than I have them now, and I never had plants that were less coddled. With the exception of a few odds and ends, all our stocks of these plants are in boxes 2½ ft. long, 1 ft. wide, and 3 in. deep. Each box has six holes in the bottom, large enough to put the finger through. In the second week in August a piece of crock was put over each of these holes, the boxes were filled with a mixture of loam, leaf-soil, and sand, and then about fifty cuttings were put into each. As soon as the cuttings were put in, each box was watered and set outside, fully exposed to sun and air. Here they remained until the middle of October, when they were shifted into a Vinery, from which the Grapes were just cut, and there they are now. From being so much exposed to the air, the plants are not drawn up; on the contrary, every one of them is dwarf and bushy, and no dead leaves have yet been gathered from them. A little artificial heat is admitted two or three times a week, and the top and bottom ventilators are open night and day, unless it is extremely cold. They are not watered oftener than once a week, sometimes not so often. It is not the hardiest of green-leaved Pelargoniums that are thus treated, but many choice variegated ones as well. Alternantheras are often found to winter badly; hundreds of them were put in boxes like the Pelargoniums; they were rooted in a close frame, and then hardened off. They are now along with the Pelargoniums, and so luxuriant that not a particle of soil can be seen, looking down through the plants, and they are so bushy that the little branches are hanging over the sides of the boxes. Mesembryanthemum cordifolium is equally healthy under the same treatment, and so are the different kinds of Iresines. I attribute all this chiefly to growing them hardy at first, and afterwards not putting them into any close place to make them tender before the winter had set in. Last year most of our Pelargoniums were rooted and wintered in small pots, and it took four times as much space to accommodate the same number of plants in that way as in the boxes, and I find that they keep much better in the latter than in pots. In March the Pelargoniums will be potted into small pots, and the Alternantheras given more room in the boxes in which they are now growing.—C.

COLOCASIAS.

THESE are hothouse plants closely allied to the Caladium. They are Indian herbs with tuberous roots, and are grown in gardens for the sake of their handsome foliage. Colocasia antiquorum, which we now figure, is cultivated largely in Egypt and India for the sake of its leaves, which are boiled and eaten as Spinach.

Colocasia antiquorum.

Some of the varieties, such as C. macrorhiza (the variegated form of which is very handsome), are grown for the sake of their roots (which contain a large amount of starch), which are used as well as the leaves as food. These Colocasias are easily propagated from suckers, which are produced plentifully from established plants. In the matter of soil for Colocasias, it is hardly possible to make the material in which they grow too rich; one-half yellow loam to an equal proportion of thoroughly rotten, dry manure and one-sixth sand, will in every way suit them. In selecting young offsets of C. macrorhiza variegata, those should be chosen that have somewhere near an equal proportion of green and white in their leaves; suckers with too great a preponderance of white are deficient in vitality to grow freely, whilst, on the other hand, those that contain too much green in their early stages seldom attain colour enough to make them attractive.

A warm moist temperature and abundance of water at the roots when growing freely are necessary if large and handsome plants are desired, and when the pots are full of roots, a top-dressing of well rotted manure, or frequent supplies of manure water, will be of great assistance.

FRUIT.

How to Grow Late Grapes.—In the cultivation of late Grapes there are many points which should receive forethought, not the least of which is, how the best return can be produced at the least cost in fuel, which is a very heavy item in the garden expenditure of the present day. Before taking this part of the subject into consideration there are other details upon which I would like to say a word. After the Grapes are cut and carefully stored away in dry fruit rooms, the Vines should be pruned without delay; and in pruning I think a wise discretion might be exercised in many cases, not in cutting upon any particular principle or upon any mathematical calculation, but upon a system the result of experience acquired by studying the conduct of the different varieties of Grapes grown under different conditions and circumstances. There is no doubt that soil, climate, and other circumstances have a very potent effect, either one way or the other, in the production of Grapes; so also has the amount of light to which the wood of the Vine is exposed. If this important factor in Grape culture be minimised by encouraging more spurs, and consequently more leaf growth than can be fully exposed to the direct action of sun and light, the results will—must, in fact—be less satisfactory than they otherwise would be. In pruning our late Vines this year I have been struck with the varying conditions of growth, its character and solidity, in several varieties of Vines of more or less robust habit, where influence of sun and light had most play amongst the wood and foliage and where the spurs had not been too thickly set on the Vines. I also noticed, in strong growing varieties like Trebbiano, where a latent eye pushed away a weakly growth which was encouraged, how solid and thoroughly ripened it was to the core as compared with strong shoots on the same Vine from spurs on either side of it. Practically, then, pruning is an operation to be learned by experience of no superficial character, for not only do Vines vary in habit in different soils, but the houses in which they grow also alter their condition a good deal. Vines which are grown in low, badly ventilated houses should not be planted nearer to each other than 3 ft., and the spurs, where they are grown on the spur system, should be 18 in. apart; they should also be started into growth a month earlier than Vines which are more favourably situated in light, airy, lofty houses. Of course exceptions would occur in the case of Vines such as Lady Downes, which scalds so bady in hot weather. This variety may be grown at 2½ ft. apart, and the spurs might be allowed to grow closer, in order that the foliage might shield the berries from sudden blinks of strong sunshine. Another matter worthy of consideration in the case of vigorous-growing Vines is that they should not be too much "curbed" by stopping where there is anything like a fair

opportunity of giving them headway, nor should they have over-stimulating food supplied to them while they show a disposition to grossness. Plenty of clear water at the roots will be sufficient for them, and with a long season of growth they will settle into a free-bearing state, which cannot be expected from the practice of late starting and a system of cultivation which induces soft pithy shoots. Vines are often retarded in spring on the plea of economy, but I fear the fact is lost sight of that it takes more fuel to finish off crops in a dull sunless autumn than it would to give them an early start in the spring, to say nothing of the superiority of solar heat over the artificial warmth that can be obtained from hot-water pipes.—W. H.

Winter-flowering Fruit Trees.—Wherever fruit trees are much subject to the attacks of aphides, scale, Moss, or Lichen, a suitable winter dressing will be beneficial. For the eradication of Moss, fresh lime is the best and cheapest material to apply; it may be dusted on when the branches are slightly damp, or it may be applied in a liquid form through the syringe or garden engine. In either case a fourth part of soot may be added to it. Soot in any shape is a capital stimulant for fruit trees, and might with advantage be much more extensively used than it is, either as a top-dressing to the roots or as an insecticide. When applied in a liquid form, it should be strained, just previous to being used, through a piece of canvas, otherwise the syringe or engine may be rendered unserviceable. For the destruction of scale and aphides, Gishurst Compound, in the proportion of 8 oz. to the gallon, may safely be used dissolved in soft water. The common and, as I think, the best plan is to thicken the liquid compound with lime and soot, and a couple of good handfuls of sulphur per gallon till it has the consistency of ordinary paint, and then put it on all the branches of the trees with a soft brush, rubbing it well in on the old wood, but passing over the young shoots with a lighter hand, so as not to disturb any of the buds, drawing the brush along in the direction of the buds only without any reverse action. It has been stated that to simply wash the branches of the trees with the liquid compound without any thickening ingredients would have the same cleansing effect. I have tried both ways, and the conclusion at which I have arrived is that the thicker mixture has a more lasting and beneficial effect than the thin one, and as one can be applied nearly as quickly as the other, and there is not much difference in the cost, I should recommend a continuance of the old system.—H.

How to Grow Cranberries.—I have had for a good many years two flourishing beds of the large-fruited Cranberry, which has gone on fruiting abundantly from December till the end of spring, and pushing its trailing shoots in every direction, with no other soil than the natural one, and no more irrigation than what the rainfall yields. One of these beds stands on a dry, sandy hill, while the other, at a short distance off, is more flat and moist, and I should imagine that the success of both would have been about equal had not the latter one been allowed to be too much overrun with Heather, Brambles, and other intruders; now that they are cleared this bed seems to be starting fair with the other. I fancy the truth to be that where Heather is the weed of the soil the Cranberry will probably not refuse to grow. The Heather (Calluna) is always pushing out its growth among my Cranberries, and has to be kept back, while, on the other hand, the long shoots of the Cranberry are extending themselves among the masses of Heather and Heath which fringe one of the beds.—A. J. B., *Kent*.

Protecting Garden Tools from Rust.—For garden implements of all kinds, having metal surfaces exposed, and even for knives and forks, and other household apparatus, indeed for all metals likely to be injured by "rusting," we know of no simpler, more effective application than the following: Take any quantity of good lard, and to every half-pound or so, add of common resin ("rosin") an amount about equal to half the size of an egg or less—a little more or less is of no consequence. Melt them slowly together, stirring as they cool. Apply this with a cloth or otherwise, just enough to give a thin coating to the metal surface to be protected. It can be wiped off nearly clean from surfaces where it will be undesirable, as in the case of knives and forks, &c. The resin prevents rancidity, and the mixture excludes the ready access of air and moisture. A fresh application may be needed when the coating is washed off.

THE COMING WEEK'S WORK

Extracts from a Garden Diary.

January 31.—Sowing a few Sweet Peas and Syon House Cucumbers; potting off Melons and plunging them in sawdust to keep them from slugs; also potting off some Mignonette for Tree Mignonette and placing it in a cool place; pricking-off Lobelia speciosa cuttings; putting in some double Senecio cuttings; also those of Coleus and of Centaurea gymnocarpa, C. candidissima, and Stephanotis; putting in likewise more cuttings of Petunia, Verbena, Cerastium, and scented Verbena; planting Box trees in shrubbery borders; also some Cauliflowers under hand-glasses, giving three shovelfuls of manure to each glass; likewise some Horseradish on ridges, laying the thongs horizontally; covering up some Rhubarb and Seakale with boxes and embedding them in leaves; shifting Borage into larger pots to get it into flower; finishing nailing Apricots and beginning to nail Peach trees.

February 1.—Sowing Walcheren and Early London Cauliflower in frame; also Capsicums and Chrysanthemum carinatum fl.-pl.; potting off Heliotropes and Gazanias and placing them in heat; potting Rhododendrons in peat for forcing; potting Disa grandiflora in peat; putting in another batch of Asparagus; red-leading Peas before sowing to keep birds off them; putting ashes over Peas just coming up; putting some manure to Asparagus beds; mixing up some manure and leaves for Cucumber pit; making a new Vine border for good sandy turf only; sooting between rows of Cabbages; stirring up the soil about young Mignonette; top-dressing Peppermint beds with leaf-soil; looking over wall tree coverings, making new ones, and repairing old ones; making canvas coverings for Green Gage Plums; earthing up the first Peas.

Feb. 2.—Sowing Bromham Hall Melon, Parsley, and Viola lutea; potting Salvia splendens and Gnaphalium; putting in more cuttings of Achyranthus, Fuchsia, Scutellaria, and Tropæolum called Crystal Palace elegans; putting in another forcing of Rhubarb; putting a few pots of Musk in heat; looking over Apple stores; top-dressing pot Vines with manure; levelling Vine borders and putting on a dressing of bones; making some frames ready for Heaths; clipping Holly hedge.

Feb. 3.—Sowing Wigandia and Phormium tenax; also East Lothian Stocks, Nasturtium canariense, Petunia, Cyclamen, Golden Feather Pyrethrum, and Rhodanthe; also sowing Chilies, Borage, Marjoram, Basil, Egg Plant, and Tomato; potting cuttings of Croton variegatum, Salvia patens, first-struck Fuchsias, Verbenas, Mangles' Pelargoniums, and second-sown Cucumbers; putting old Fuchsias into heat for cuttings; manuring Black Currants

Feb. 4.—Sowing Verbena venosa, Chamæpeuce diacantha, Echeveria, Melianthus, and Cineraria acanthifolia; potting Gazania splendens; putting in a few cuttings of Lavendula dentata; also some Willow cuttings; planting four lights with sprouted Ashtop Potatoes; dusting Plum trees with soot, as birds are injuring the buds; earthing earliest Potatoes.

Feb. 5.—Potting Gloxinias and Caladiums, and putting them into moist heat; dipping Strawberry plants for green fly; camel-hair brushing flowers of Strawberry plants; topping and otherwise trimming Turnips, and placing them in a cool place in ashes; top-dressing Peach trees in pots with half cow manure from farmyard and half-burnt refuse; cleaning up wood-walk sides

Glasshouses.

Examine Cinerarias, Calceolarias, and Pelargoniums particularly, in order to see that they are free from aphides, for if a single plant be infested by them, they will spread in all directions, giving immeasurably more trouble than if prompt means were taken to destroy them as they appear. There are many hard-wooded plants, such as Boronias, Polygalas, Tetrathecas, and Aphelexis, upon which aphides will live, although they do not thrive, and yet upon such plants, especially Aphelexis, they are much more difficult to kill than when upon plants for which they have a greater liking, so much so, that Tobacco smoke, when applied in strength and sufficient quantity to destroy them on soft-wooded plants, has next to no effect on them. In such cases nothing equals a couple of washings with good strong Tobacco water, allowing it to dry on the plants and not washing it off, as is sometimes recommended; this will generally be sufficient to kill not only the mature insects, but also their eggs. A few Gloxinias and Achimenes should now be started; pot the Gloxinias in good loam, to which add some sand and leaf-mould. Achimenes are best treated as follows—Get some seed-pans, drain them, and let the soil used consist of three parts sifted loam and one-fourth of leaf-mould and sand. By using material of this description their roots do not get broken when shifting them into the pots in which they are intended to bloom. They will be ready for potting when they have grown 2 in. Both Gloxinias and Achimenes should be accommodated with a temperature of not less than from 60° to 65° at night, with a rise of 6° or 8° during the daytime. Till they commence to grow and push leaves they must receive no more water than will keep the soil slightly moist; they are apt to rot if too much be given them.

Preparation for Potting.—It is now time to see about potting some of the earliest started stove plants, and soil should at once be prepared. In all cases not only ought it to be in a medium condition as to moisture—that is, neither too wet nor too dry—but it is a matter of great importance that previous to use it should be so warmed as to bring it up to something like the temperature of the house in which the plants are growing, for to place a body of cold material, in the way in which it is frequently done, in contact with the roots, has a most injurious and stagnating influence on them; but in thus preparing soil, great care should be taken that it is not overdried, as experience points to the fact that when soil is placed in close proximity to a heated surface whereby it becomes too dry, the essential elements of fertility are dissipated. To look thus narrowly at what might be termed by many trivial matters may seem unnecessary, yet it is attention to small details of this kind that makes the difference between complete or partial success. Where no convenient place exists for warming the soil, it may be put into boxes and placed over the hot-water pipes. If a calculation be now made as to something like the quantity of peat and loam that will be needed during the next month or two in the repotting, it can with advantage be at once so far prepared by breaking it up with the hand, not sifting it, and reducing it to different sizes, in proportion to the large or smaller description of plants that require shifting.

Caladiums.—It is desirable to start these at two different times, by which means a portion may be had late in the autumn, with handsome, healthy foliage, at a time when the earliest grown plants have lost their colour. In potting, it is well to consider whether large or small examples will be the most useful, for in no case is it advisable to over-crowd the pots, as, where this occurs, the leaves will not acquire their wonted size. They will succeed in either loam or peat, but the foliage possesses more substance when grown in loam than in peat.

Poinsettias.—Plants of these that have done flowering should receive no more water at present; they should be stowed away in any place where there is an intermediate temperature for some time, until they require to be started again into growth.

Ardisias are most useful when comparatively small and fully furnished with leaves to the base. Any that are getting too large and that have lost their lower foliage should now be headed down and put into a brisk heat, where they will at once make several shoots. When these have attained a few inches in length all but one can be taken off with a heel and struck. They will make good small plants much quicker than seedlings. The stools may then be partially shaken out, repotted, and grown on with a single stem, a way in which they look much the best.

Amaryllises, &c.—Where a good stock of these is grown it will be better to have them in succession than in bloom all together. A few of those that completed their growth earliest in the autumn, more particularly the deciduous species, if now subjected to a brisk heat, will push up their flowers quickly. The soil should receive a good soaking of tepid water, or, if the plants be plunged in a moist bottom heat, and water be supplied in the usual way, it will be sufficient. Plants of Eucharis amazonica that have been rested with a view to coming into flower after those earlier started should be brought into the warmest end of the house, and if possible plunged in bottom-heat, and if they are strong and in good condition, they will at once push into bloom. Imantophyllums, although more correctly greenhouse subjects, are very effective for general decoration brought into flower earlier than usual by the application of more heat.

Miscellaneous Plants.—Plants of the handsome Aphelandra cristata that flowered last autumn should now be kept in the stove to encourage their making young growth for purposes of propagation. Of Eranthemum pulchellum, Plumbago rosea, Scutellaria mocciniana, Sericographis Ghiesbreghtiana, and Thyrsacanthus rutilans, a sufficient number of such as have done blooming should be cut back and placed in the stove, where they will be induced to make growth for cuttings. They should have plenty of light, so that the young shoots may be short and stocky, as upon that very much depends their making stout, healthy plants for blooming next autumn. After the first flowering of Euphorbia jacquinæflora is over it will, if kept sufficiently warm, make a second growth that will bloom, and, although the sprays will not be so large as the first, they will be useful for cutting.

Orchids.—The greater portion of the spring and early summer-blooming Odontoglossums will now be pushing up their flowers, and continuous watchfulness will be necessary to see that these do not become a prey to slugs or cockroaches; the latter are not usually so troublesome here as in the warmer quarters afforded by the hotter houses, where they increase faster and find more congenial hiding places, but the slugs and snails need to be unremittingly sought after, for, even if destroyed until there is no trace of any remaining, there are others that soon find their way into the houses, come into existence from eggs already deposited there, or that get in with the potting or other material from time to time introduced. Such species as O. citrosmum, O. hastilabium, O. Phalænopsis, O. vexillarium, and O. Roezli will need keeping in a warmer position than the least heat-requiring kinds. Masdevallias which have not yet completed their growth must have sufficient water to keep their roots thoroughly moist, for their requirements in respect to moisture are almost equal to those of real aquatics, and, provided the material in which they are grown is of a nature to allow the water to pass freely through it, the growths are generally finest where the most water is used.

Flower Garden.

Auriculas.—Continued severe frost prevents anything being done to these at present; the frames are covered at night with mats, and this must be done every night while frost remains. Those who have a heated greenhouse in which to place their plants have a great advantage over those who can only obtain ordinary frames. They ought to be placed in the house this week, and frosts should be excluded.

Carnations and Picotees.—It ought to be well known that these do not seem to be in a dormant state, even at mid-winter. If the weather be mild they make roots and slowly develop leaves. During frosts so intense as to crust the soil in the pots growth either above or below ground must be suspended. Growers of these flowers do not give them that amount of attention which they require during the winter months, and which is especially necessary in February; the plants sometimes begin to spindle for bloom the first week in this month; these will be early blooms, and, if the weather be mild, such plants should be carefully repotted into their blooming pots. The main collection will not be ready for potting until the end of the month. Have all the plants thoroughly cleaned before potting them; dead and decaying leaves are unsightly, and must be carefully removed; even in the best-managed collections they are to be found. If sparrows are numerous and short of other food they will peck the tender points out of the plants; if so, it will be necessary to place a net over them as the best precaution. No trace of aphides should be allowed on the plants at this date; it is very dangerous to fumigate the frames after active growth has commenced.

Dahlias.—If a large stock is required the roots must now be placed in heat after they have either been potted singly, or a number of roots placed together in suitable boxes. The best place is a forcing house, where the temperature ranges from 50° to 55° at night. They may be placed over the pipes in Vineries or Peach houses, and be started with them. The shoots start well and healthily over a bed of leaves or tan with just a mild heat.

Hollyhocks.—See that leaves on plants placed in heated houses do not become infested with red spider; injury is often caused by it before the discovery is made. Seedling or common sorts that were planted out in the autumn must not be quite neglected. If the plants have been mulched round the roots, this forms a safe hiding place for slugs, which will eat the leaves, and it is also very desirable to run the hoe through the ground if it is moderately dry. While frosts last nothing can be done.

Phloxes in Pots.—Start the shoots into growth in order to obtain early cuttings. The heat of a greenhouse will cause a very early growth. Shoots about 1 in. long may be slipped off and placed singly in very small pots. They will soon form roots, and grow away freely with a little bottom-heat. Those in beds cannot require any attention until the weather is more favourable.

Pyrethrums, Delphiniums, &c., in beds, will be putting forth their very tender leaves as soon as the frost will allow them. See that they do not receive any injury from birds. The plants may be lifted and divided if it be necessary to increase the stock.

Polyanthuses.—As a rule, the treatment recommended for Auriculas applies to these. We would remove this class of plants to a cool greenhouse near the glass if it were possible to find room for them. The soil in the pots has been frozen for a considerable time now, but the flowers are most injured by birds in this early stage of development.

Pits and Frames.—Fresh stable manure, sufficient to make a good bed for a one or two-light frames in which to raise Cucumbers and similar plants, as well as for making beds for Radishes, Potatoes, and early Carrots, ought now to be got together; it is well to mix the manure with as much in bulk of leaves, as when thus mixed it does not heat so excessively, is ready to use sooner, and keeps its heat better than when manure only is used. The material for these beds, whether it is manure alone or mixed, must be shaken, thrown into a heap, and watered if necessary. In this state let it remain for five or six days, then turn and shake it, an operation which ought to be repeated a second time in a similar way soon afterwards. Rhubarb that is growing must have plenty of water, for if neglected at all in this respect it will not come nearly so strong as if properly attended to. Seakale roots after being forced ought to be put in sand or ashes; if there be a scarcity of young roots for planting some of these will do when the time arrives for putting them in. A little Lettuce and Cauliflower seed should now be put in in boxes and placed in a house or pit in which there is a little warmth, if not in a cold frame in a sunny situation where, when the plants are up, covering material can be used for protection if required.

Fruit.

When once the frost releases his grasp vegetation will make rapid progress; it is therefore important that all pruning should be completed as soon as possible, for, to say the least, it seems unnatural to prune when the buds are expanding, and such an operation carried on then must tend, in some degree, to produce constitutional derangement. As regards neglected orchard trees, many would be the better for having their root and stem suckers removed, cankered branches cut off, and other branches thinned out, together with any long spurs, in order that the trees may have a chance of renewing their vigour by the production of new wood; any trees that are affected with Moss or Lichen should be splashed over with a mixture of soot and lime, a simple but sure remedy. A liberal surface dressing of either fresh soil or manure should afterwards be given, and even the first season the fruit will be so improved as to well repay the outlay. Autumnal planting of fruit trees is always preferable, but if not done let all be in readiness for doing such work as soon as the state of the soil permits; planting when the soil is in a sodden state is ruinous, no matter how well drained the soil may be. For obvious reasons, in stiff or clayey soils the plants should be raised a few inches above the ground line, but in light or gravelly soils they are best planted on a level with the surface, care being taken that in neither case the stems are buried too deeply.

Vegetables.

All other things being equal, a well-drained and deeply-trenched garden will yield double the produce of an undrained and badly-cultivated one. The first neither suffers from wet nor drought. The crops can be got in at the proper time, and they require but little cultural attention afterwards, and that little is the more expeditiously accomplished owing to the workable state of the soil in almost all weathers, consequently the crops are finer and earlier matured, whilst, in a garden of an opposite character, seed sowing has to be deferred through the unkind state of the soil, and this late sowing, coupled with the slow progress made by reason of the water-logged ground, and the difficulties of culture through the ground getting hard and baked by the first dry weather, tends to show the economy there is in deep trenching and effective draining, a large proportion of which may be done in weather when it is not practicable to do aught else. No excuse should be attempted for the neglect of such a duty; moreover, an earnest determination to accomplish it will bring its own reward in the form of assured success. We are still frozen out, but as soon as a change occurs, and the ground can be worked, seed sowing should proceed with dispatch. After a few early Peas, Beans, and Carrots have been got in on a warm border, space for the main crops of Onions and Parsnips will require attention; both of these flourish best if sown as early in February as circumstances permit. Drill culture is greatly preferable to sowing broadcast for all kinds of kitchen garden crops. The space apart of the drills for Onions should be at least 12 in., and for Parsnips 15 in. The ground for Onions cannot be too highly manured or deeply trenched, but previous to sowing it should be rolled to make the surface firm. Parsnips, on the other hand, cannot have the soil too open, and the manure for these should be buried rather deeply, for no matter how much so they will search it out. Surface manuring for these has a tendency to the production of forked or malformed roots, so that it is better not to manure at all in soils of good or medium quality than to have it immediately under the top spit.

TOWN GARDENING.

WINDOW GARDENING.

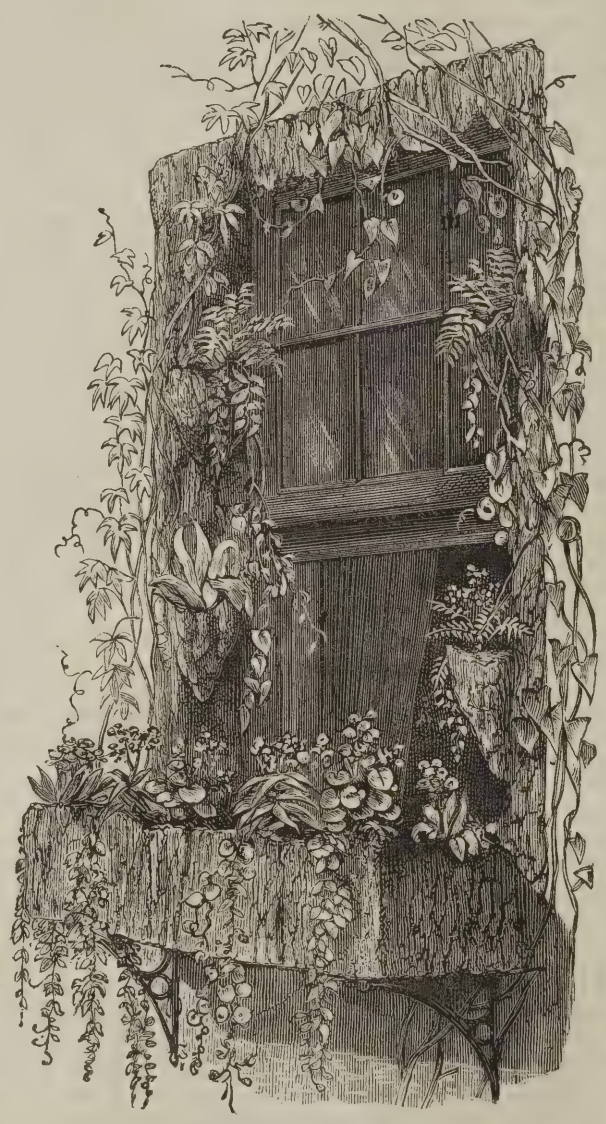
Potting, Watering, &c.—For the benefit of those who are not acquainted with the *modus operandi* of potting we give a few hints upon the proper method of performing this and other similar operations. We have found that it is better, as a rule, to do all potting in spring, instead of autumn, as is the usual practice. If any shifting, &c., is obliged to be done at the approach of winter, get it done in good time, not later than September, so that the roots may be feeling the sides of the pots before the trying season comes on. Of course an exception must be made in the case of all bulbs for spring-blooming Hyacinths, Tulips, &c., which should be put in the soil in September or October. The most important point in potting is to have everything as clean as possible, pots and crocks all scrubbed both inside and out, and rinsed in clean water afterwards. You cannot grow healthy plants in dirty pots. These must also be perfectly dry when used as well, or it will be as bad or worse than if dirty. The soil must be sweet and fresh. It should have been stored under cover, but exposed to the action of the air for some time before use, and should never have been allowed to get either wet or dust dry; least of all should it be in either of these states when used, but just in such a state that a handful taken and squeezed together should only just stick together till touched, and then fall to pieces again. Having your pots and soil all ready, put a largish piece of crock over the drainage hole, then two or three smaller pieces, and then a sprinkling of bits about the size of a small bean. Some plants, especially those that require an extra abundant supply of water, need more drainage than this; also in the case of pots for seeds or cuttings, which should be nearly or quite half full of drainage, but for most things this will be sufficient. Over the crocks place a handful of green Moss or spent Hops, to prevent the fine soil washing down and clogging the drainage, and then some of the rougher parts of the

soil. Now if you are merely shifting the plant, that is, transferring it from a small pot to a larger one, and if it has not been very long in the former, merely turn it out, reversing it on your hand; remove the old crocks, also any loose soil, dead roots, or Moss upon the surface, and set it in the new pot, so that the old surface shall be only just covered by the new; fill in the soil all round, pressing it in pretty firmly; it is a good thing to use a flat-ended piece of lath for this purpose round the old "ball," as it is called. Do not make the soil, however, very hard, especially if a rapid growth rather than early flowering is wanted, or if the plant will have to stay in its present pot for any great length of time. Finish off the surface nearly level, but for Fuchsias, Geraniums, and other plants that require a liberal supply of water, and are not likely to decay at the neck, leave the centre rather lower than the sides, so that the water shall not run away and leave the centre dry. For hard-wooded and delicate things, however, the soil should be level; always leave about half an inch below the rim to allow for watering.

Give the plant, or rather the soil, a good watering from a fine-rosed pot or syringe to make the surface firm, and use the same in preference to the spout in all waterings for some days till the soil has got settled. It is not advisable to keep on shifting plants into larger pots after they have attained a certain reasonable and movable size; a 5-in. or 6-in. pot, or what is known as a 48 or 32 size, is quite large enough for the majority of window plants. So when a plant reaches such a size and requires potting again, prepare one of the same size, turn the old ball out, and break or shake away nearly all the old soil, leaving just a little on the roots; if these are very long, shorten the strongest back considerably, leaving the short fibrous ones untouched. Put it into the new pot, spreading the roots out as evenly and naturally as possible, and working the fresh soil in and amongst them nicely; fill up and press firmly, then give a good watering. It is advisable, wherever possible, to shut up the plants pretty close in a frame or pit after this operation until they have recovered the check; at any rate put them in as quiet and shady a place as you have. If the plant has developed a large head, however, it is better to have pruned it back considerably before repotting. Harden the plants as much as possible by standing out of doors in a sunny place and giving only very little water for a time, then cut back pretty closely; put in a close and warm frame or house, or keep shaded and quiet, giving only very little water till the young shoots have broken, and when these are 1 in. or 1½ in. long repot as above. This should always be done in spring or summer.

Do not give newly-potted plants more water than just sufficient to keep the soil moist for some time until the roots have got well to the sides of the pot again, as if the new soil, before it is occupied by the roots, gets very wet or sodden, it is apt to sour, and then the roots will not like it or run freely in it, and the plant will become sickly.

The period at which plants require most water is when they are growing vigorously or flowering, or both; then they can scarcely have too much, especially if the weather is warm; but one rule must be always observed—never water a plant until it requires it, that is, when the soil is dry, or nearly so, though you need not wait until the plant flags. When the plant wants it, be it twice a day or once a month, give it a good soaking, and leave it alone till wanted again. Again, do not let plants stand in a saucer of water, but let all superfluous moisture run freely away. There are some exceptions to this, viz., Arum or Calla Lilies, Spiræas, Musk, and even Fuchsias when in full flower in hot weather require so frequent waterings, that it is better to let them stand, at least for a time, in a saucer of water and suck it up, as they will speedily do. But such a practice is almost certain death to any delicate-rooted plants, if frequently done, or continued for any length of time.



Window Garden with Climbers.

Never water plants with very cold water, but from October to May, at least for indoor plants use tepid water at a temperature of 60° to 65°. Manure water may be beneficially employed for plants that have become what is termed pot-bound, that is, the pots full of roots, when they need some extra nourishment. This may be made in several ways; put about a bushel of fresh horse or sheep droppings into a good-sized tub or barrel, fill up with water, add a handful of lime, and stir all up well, then let it settle till next day, and one part of this diluted with about two parts of water makes a capital stimulant. Never use it stronger than weak tea, and it should always be used in a clear state, not thick or muddy. The old rule for this, and a very good one it is, is "weak, clear, and often." Soot water, not too strong, made by beating up a spadeful of soot in a little water to a thick paste, and then diluted, may be used with advantage to virgin soil, but not to ordinary town soil; that is too sooty already. Or sulphate of ammonia dissolved in water in the proportion of about half an ounce to the gallon is very good for many things, especially Pelargoniums; it induces a plentiful bloom. Guano water, too, in the proportion of an ounce to the gallon, or rather weaker for delicate things, is useful.

If you wish to have good individual specimens, only grow a few plants and turn each round occasionally, so as to expose all parts to an equal share of light, and balance the growth, but if you aim at filling the window as full as possible, do not attempt this, but arrange your plants pretty closely, so as to contrast and look well, and never turn or move them, but let them "grow in" altogether, and produce a solid bank. We must confess we do not personally admire this style, but tastes differ, and it seems to please some people very well.

Where plants are grown in a room that is not much used, or in any case, indeed, the air must not be allowed to become stuffy or close from keeping the window too much closed; on the contrary, the internal air should be changed as often as possible, and to this end a little air should be given, *i.e.*, the window should be opened a little way for an hour or two at least every day, except in severe weather in winter. Such plants as Ferns, Begonias, &c., require comparatively little air, and should never be exposed to wind or a thorough draught. For all such things opening the window a few inches, more or less, at the top only on fine days for a few hours will in general suffice. Fuchsias require a more free supply of air than this, and Geraniums, Pelargoniums, Balsams, and others must have as much as possible whenever the weather is at all genial and the thermometer outside above 50° or 55°. It all cases it is far better to open the window-sash at the top than at the bottom.

One other hint. Never paint flower-pots, but keep all the pores as clean and open as possible, It is better to give your plants air at night and in the early morning when the weather is warm, as it is then far purer and more healthful than in the daytime, when so many fires are going. For the some reason we give more air on Saturday evenings, Sundays, and on to Monday mornings; also on general holidays. All these things make a difference, though it may be only a small one, but "many a mickle makes a muckle," so do not neglect one. B. C. K.

VEGETABLES.

Potato Growing.—I am interested in the Potato growing department of Gardening, and have noticed some remarks of "Burns" on the subject. His experience is on light soils with porous bottoms, so is mine, but with different results. I have not grown International or Woodstock Kidney, but from what I have seen of them this last season I should not care to invest in them. More than one grower I know has not his seed back again, but I certainly did set up Snowflake, and unless they do better than they have done these last two seasons, they will have to be a sort of the past, though a better cropper or handsomer shape I should not wish to possess; but I do not understand "B." saying his did not ripen till the last week in September. Were they true to name? My own were dug early in August, when nine-tenths were diseased afterwards, but the Schoolmaster, a later one, I shall go in for. I believe it to be the one for future growers. Magnums did well about here, and Champions too, but I object to their habit of making so much haulm, and so long before they are ready to dig. I see in Dec. 25 "Burns" takes "T. S." to task, and says the varieties are not to blame but the cultivator; and as he is curious to know the causes of failure, it is not that "T. S.'s" land is retentive of wet, or in good heart, or sick of Potatoes, nor saturated with smoke; the early sorts he enumerates were diseased generally about here; and knowing his land well I think he has nothing to complain of on the score

of situation or soil. For many years he has been a successful exhibitor at the shows.—MARKET GARDENER.

Potatoes during Frost.—In large vaults Potatoes are exposed to but a minimum of danger; it is when they are stored in ordinary heds, rooms, stables, and similar places that danger is to be apprehended, and where all possible precautions are necessary. Where there is a bulk of one sort the safest place for it is on the floor, and it should be kept in bounds by means of stout boards. For this the covering should in the first place be cloths, sacks, or any close-lying and air-excluding material, and upon this a thick covering of straw, the thickest portion being upon the crown of the heap, where a little moisture is likely to accumulate. If the bulk be dry, it is a great point in favour of the safety of the tubers. Smaller quantities may be well secured in bins, boxes, or tubs, but hampers should be avoided, and if some be stored on shelves, it is necessary to be as particular as to the nature of the floor on which they lie as upon the thickness of the covering. If in boxes or tubs, these should be placed close together, and should have some sacks or similar covering over them, and then a thick covering of straw. In all cases it is well to put some boards, slabs, or anything at hand upon the straw to make it lie close, and thus exclude as much air as possible. When a thaw takes place, three or four days at least should elapse ere the covering is removed, as should any little touch of frost have got admission, it will be productive of less damage if it be allowed to escape gradually.—A.

Trebon's Onion.—This variety was quite new to me last season, but, having obtained a packet of seed of it, it did so well, and proved such a real novelty, that it now must take a permanent place in my vegetable list. With ordinary garden culture the bulbs averaged 12 in. in circumference, many of them being 14 in. It is very handsome, not unlike, both in size and appearance, the imported Spanish Onions. In quality it is super-excellent, having the fullest Onion flavour, and it is deliciouly mild. Respecting the origination of it I know nothing other than that the name appears to imply that it is of French origin.—W. W.

Early Peas.—Now is the time to sow early kinds of Peas in turf or boxes. If these be placed in any house or pit, from which frost is excluded, and be planted out, when spring sets in they will furnish a crop which will supply the place of those which may have been lost through the severity of the weather.—S.

Asparagus in Borders, Shrubberies, and Waste Spaces.—Those who are in the least doubt about how to cultivate Asparagus by the new way or the old way may settle the question to some extent by putting single plants in mixed flower borders, thin beds of shrubs, or in open spaces in the ornamental garden. The Asparagus fairly grown is a very beautiful plant. For its foliage, it is well worth growing if it had no other value whatever; in fact, among the many hardy plants we have it is, perhaps, the most graceful, and it would no doubt long ago have been used as an ornamental plant if it had not been used in the kitchen garden. If the soil is of the usual quality of garden soils, a very little manure will suffice for planting. If it is very poor it ought to have some manure slightly dug in, but the old way of putting 2 ft. or more of manure under the plant is quite needless. There are hundreds of gardens in which a bit of good Asparagus is never seen, where good supplies could be obtained from plants or groups placed in the shrubs or borders. Certainly it is not the best way, but it is far better than the common and foolish one of having ten or twenty plants where one should be. March is the time to plant.—V.

THE following graphic portraiture of a too common but eternally profitless treadmill experience is credited to "a well-known Illinois writer": "The average Western farmer toils hard early and late, often depriving himself of needed rest and sleep—for what? To raise corn. For what? To feed hogs. For what? To get money with which to buy more land. For what? To raise more corn. For what? To feed more hogs. For what? To buy more land. And what does he want with more land? Why, he wishes to raise more corn—to feed more hogs—to buy more land—to raise more corn—to feed more hogs—and in this circle he moves until the Almighty stops his hoggish proceedings."

CAMPANULAS OR BELL-FLOWERS.

THESE constitute one of the most interesting families of hardy flowers, and some of the many beautiful species should find a place in every garden. A few of the kinds appear to be tolerably popular, but the majority of them are but rarely seen in gardens. The Campanulas vary more in manner of growth than in colour, and if they have a defect it is that they exhibit some little uniformity in this latter respect. It must, however, be said that the various shades of blue which distinguish the Bell-flowers are of a peculiarly soft and pleasing description, so that even when the showiest species amongst them are planted in masses the effect, though striking, is never overpoweringly brilliant. There is no more grand hardy flower than the Canterbury Bell when all attention has been paid to its culture. Seldom, however, is it that one sees this fine biennial in full perfection; yet when well grown few plants surpass it in beauty and effectiveness. The great point, and this is where many err, is to sow very early in the year, so that the plants get the advantage of a long season's growth, so that by the autumn they have developed into large, robust crowns of foliage, containing a vast amount of growing force, and certain to start away with rude vigour the following spring. It should also never be forgotten that it is not the number of specimens which render a garden gay and interesting, but rather their quality, individually, so that half-a-dozen well-grown plants will yield as great a mass of bloom as ten times that number where they have been stinted in the matter of both air, light, and nourishment. Not only will this be the case, but the individual blooms will be larger and finer, and that beauty of form which every plant possesses in a more or less degree will be shown to the best advantage when each plant stands to a certain extent free from its neighbour, and has been allowed a free, unchecked development during the growing season. Few plants resent overcrowding more than the Canterbury Bell, for, naturally assuming a shrubby, much-branched habit, it requires a considerable amount of space for lateral development, and utterly fails to yield the full measure of its beauty when cramped and confined for growing space. The seed should be sown in March, and if the young plants can be at once planted where they are to bloom so much the better. This is not, however, always practicable, and is not absolutely necessary. A free open sunny situation should be selected, and there the seedlings should be planted out as soon as they become large enough to handle, setting them at least 9 in. apart. Generous culture is essential, plenty of manure, and abundance of moisture at the roots being the great essentials in the culture of the Bell-flower. Somewhere during October the plants should be taken up and placed in the positions assigned to them, where the following summer they will make a grand show. The Canterbury Bell is by no means fastidious with respect to soil, but will thrive in anything between sand and stiff clay. At the same time, any little extra pains bestowed upon the preparation of the soil will not be thrown away, and the natural defects of the soil should be remedied as far as may lay in the power of the grower to do so. A very excellent species of Bell-flower is C. carpatica and its white variety, now much employed for bedding purposes, for which its neat, compact, and moderate growth admirably fits it. It grows freely in almost any situation, providing it is not too shaded, and, like the Canterbury Bell, thrives in most soils, preferring, however, a somewhat light, well-drained loam. The Carpathian Harebell is one of the most free-flowering species of the genus, and if afforded plenty of nourishment throughout the summer, watering occasionally in hot dry weather, and picking off the seed vessels as they form, will go on blooming through the greater portion of the summer months.

Campanula as a Pot Plant.

It is one of those hardy subjects which, like the Viola, may be used as an efficient substitute for tender bedding plants, and owners of small gardens who may not have the convenience for raising or wintering bedding plants would find in this little Harebell a useful auxiliary. It may easily be raised from seed, either sown in the open ground in April, or better still in March, in pans of light soil, placing them in a frame or cool house until the young plants are well above ground, when they should be gradually inured to full exposure, eventually planting them out in good free soil at a fair distance apart. Whoever has an established stool will find no difficulty in propagating this species, as by taking off young growing shoots with the whole of the stem attached and pricking them into free soil in a shady situation they will soon take root.

Another excellent dwarf kind is C. turbinata, which bears fine large, open, bell-shaped purple flowers, and which succeeds well in any free rich soil. This is really a handsome species, and deserves good cultural care. In C. pumila, the dwarf Harebell, we have a small growing species, forming flat carpet-like masses of bright green foliage, and bearing a number of flower-stems with one flower to each of them. It is a very manageable kind, and will grow well in almost any soil or situation. Another dimi-

nutive kind is found in C. pusilla, an extremely neat, fresh-looking plant with crowded, toothed, heart-shaped foliage, which, in the flowering season, is covered with bloom. The proper place for this species is some elevated position, such as a rockwork, where the roots are assured against stagnation and the plant generally against excess of moisture in any form, otherwise foliage is apt to die off in patches, thus disfiguring the plants to a serious extent. One of the handsomest members of this family is the noble Harebell (C. nobilis), the individual blooms of which are exceptionally beautiful, being long, large, creamy-white, and spotted with purple or crimson. It is a fine subject for any garden, and deserving of all cultural pains which may be expended on it. In very wet and cold localities, where the soil is liable to become sour and water-logged, it is apt to suffer in hard winters, but a little protection will suffice to make all safe. The Peach-leaved varieties should not be omitted from our present list, for they yield in refinement and beauty to no another known kind. The variety named coronata plena is notable for its perfectly double pure white flowers, which bear a striking resemblance to the Camellia both in shape and refinement, thus rendering them serviceable for even choice floral decorations. The dimensions attained by this plant are in accordance with the culture given and the nature of the soil, as sometimes when in the enjoyment of suitable conditions it attains a height of from 2 ft. to 3 ft., whereas in poor soils it rarely exceeds 1 ft. It delights in a good depth of free rich soil, and does not object to a little shade during the hottest months of the year. C. garganica is a pretty dwarf-growing variety, more fitted for rockwork than the level ground. The same may be said of fragilis and Elatines, two small growing, but pretty kinds. When these dwarf growing species are planted in the open border, the soil, if at all tenacious, should receive a good dressing of river sand or some such porous material, and some stones or pieces of brick should be sunk around the plant in such a manner that their upper surfaces rise somewhat above the level of the soil. In this manner the danger of stagnation at the roots will be much avoided, and there will be the great advantage of a more or less dry surface for the young and, in the case of these delicate species, tender growths to risk upon. Many of these diminutive Harebells are apt, when the surface soil is of a holding nature, to damp completely away in wet inclement winters, but if the above directions are followed, there will be but little danger of their suffering. These small-growing kinds are not greedy feeders, and if once well planted will thrive for years without further attention.

Byfleet. J. CORNHILL.

Rudbeckia Newmani.—This was a very gay bed during summer and autumn—too staring, perhaps, for the taste of some, but we like bright flowers. To make up for its autumn flowering, blue-branching Larkspur was planted alternately in the same bed and pegged down. Its fine foliage lightened up that of Rudbeckia, and it came early into flower. When both plants are in bloom they look well.

Diplacus or Shrubby Mimulus.—I find plants belonging to this section of the Mimulus family most useful for many purposes. They last long in bloom and are easily grown; they do well in a heated pit or cold greenhouse, in any place, in short, out of the way of frost. Give them water enough in winter to keep them from getting dust dry; in spring prune them and pot and grow them on, and during summer they will make good plants either for the conservatory or for house decoration. Cuttings struck in spring and grown on rapidly also make useful plants, and bloom well through the autumn months. One or two good kinds are Golden Pheasant, Gordon's Stella, and a sort known by the name of antarcticus. All these bloom well if planted out in spring in the open borders and taken up for winter decoration.—J.

Love-lies-bleeding for Harvest Decoration.—There are few plants that come in more usefully for this than Amarantus caudatus, or Love-lies-bleeding, and now is the time to get the seed, so that it may not be forgotten when the other annuals are raised. To secure a good supply of plants of it fit for the purpose, early, middle, and late sowings should be made. For our decorations last harvest the red sort only was used, but a judicious admixture of the white and red sorts might perhaps be made to produce a pleasing effect.—B. S.

ANSWERS TO QUERIES.

4074.—**Garden on the Clay.**—Any kind of soil or material of a light, porous description that you can add to the natural staple will serve to permanently improve it. Lime rubbish is an excellent material, as is also river sand, and if you can get a few loads of road scrapings, you will find that they will render the stiff mould more amenable to ordinary culture. In the case of a garden resting on strong clay every effort should be made to ensure superfluous moisture draining away. If drains can be sunk some 2 ft. deep and say 9 ft. apart they will ensure the well-being of many of the more tender-rooted subjects. In any case the subsoil should be loosened, which may be done with a four-tined fork, taking out a trench of the top soil, turning up the subsoil, then filling in with the next trench of surface mould, and so on until the whole of the ground is worked through. This will not only allow of the subsoil coming into a more friable and suitable condition for the roots to work into, but the disastrous effects of heavy rains will be in a great measure obviated. With respect to propagating, we would advise you to procure a little good loam, leaf-mould, and peat, with some white sand. Small quantities of all these may be procured from various firms who advertise such.—J. C.

4080.—**Treatment of Muscat of Alexandria Grapes.**—The cause of your Grapes being green instead of yellow at the close of the season was imperfect maturity. This Grape requires a longer season of growth and a higher average temperature than such kinds as the Hamburgh. Thus, in order to ensure the proper ripening of the berries, and to enable them to attain the size and colour indispensable to a perfect condition, fire-heat should be given from March onwards. An average temperature of 55° by day and 50° by night will suffice during that month, a rise of some 5° being given in April, to be increased to 70° to 75° by day and 60° to 65° by night when in flower. During the summer, should a genial season be experienced, the ordinary natural temperature will suffice to carry them along until early autumn, when a little fire-heat will generally be found necessary to finish them off. Plenty of air must be given all through the summer, but should, as often happens in our climate, a period of ungenial weather supervene, it will be better to make a little fire at night. The Muscat of Alexandria delights in a strong heat accompanied by a free circulation of air when in full growth, a due appreciation of which fact will much help the grower in his operations. Although plenty of air is to be given all through the summer, every effort should be made to economise the sun's rays and raise the natural temperature, for it is not only more economical to do so, but is more favourable to the well-being of the Vines than when opportunities for so doing are allowed to pass by, and much fire-heat is resorted to supply the more genial and vigour-imparting warmth of the sun. Give air early in the morning on fine days, gradually increasing the amount as the sun increases in power, and shut up and syringe as soon as it is safe to do so. In the early autumn, or rather towards the close of the summer when the berries commence to colour, be careful to admit every day a free circulation of air, or the beautiful amber tint so much admired in this Grape will be wanting. At the same time, should the weather prove at all inclement during any portion of that season of the year, raise the temperature to at least 70° by means of fire-heat, leaving on a chink of air at night. To obtain fine samples of Muscat of Alexandria the Vines should be at least 2½ ft. apart, 3 ft. being none too much; every leaf then gets the full advantage of light and air. The application of bones and manure is so far right, although we do not consider that the bones are of much value as a top-dressing. The plants will do no harm if frost is merely excluded, and not enough heat given to stimulate the Vines before their time.—J. C. B.

4027.—**Cyclamens in Windows.**—There is more than one cause for Cyclamen leaves shrivelling up. Want of water will of course cause them to perish, but what will be more difficult for the inexperienced to understand is that too much moisture at the root will produce exactly similar results. When it is, however, borne in mind that excess of moisture causes premature decay, it will be easy to conceive what disastrous effects a sour, soddened state of the soil must have upon the delicate feeders of such a tender-rooted plant as the Cyclamen. At one time I considered the Cyclamen as unfitted for window culture, but from what I have lately observed I have been induced to change my opinions on this subject. I do not find that the Cyclamen cares much to have a circulation of air around it in the winter time. It is a plant that is very sensitive to cutting winds or chilling draughts of any kind, but at the same time it cannot exist long in health in the confined atmosphere of a constantly heated apartment, as therein the leaves soon become drawn, and the plant generally so enfeebled, that it loses the power to throw up its blooms, which perish before they can emerge from the bud state. The proper place for this plant is a cool room, where, as is often the custom, a fire is lighted now and then just to air it and dry out damp. If the window is light and the aspect south or east, the plant should do well, and throw up its blooms strongly and freely. From time to time it is advisable to take the plant out and well syringe or sponge the foliage, at the same time exercising care that no water falls down into the heart of the plant, as a few drops will suffice to cause decay in the bloom-buds. Watering must be conducted with great care during the dead of the winter, and when the temperature is maintained at a low degree. The soil should be allowed to become almost dry, though by no means dust dry, and sufficient water is to be given to thoroughly moisten the ball of soil. Plants in windows should always stand in a saucer, and water enough should be given to cause some of it to pass off through the drainage hole, the which must be emptied away immediately. On the return of bright days more water must be given, and the foliage should never be allowed to droop for want of it. Generally speaking, Cyclamens are potted in too holding a compost, and that is one reason why the roots are apt, when the plant comes into the hands of an inexperienced person, to suffer. The compost should be light and well sanded, so that it cannot come into a sour, close condition.—C. B.

4070.—**Worms in Pots.**—Your best plan in dealing with worms in the soil of your Tree Fern will be to get some fresh lime and make a solution of lime water; say about a quart of lime to a gallon of water. Stir it well and let it stand for a few hours until the water is quite clear, then pour off into a water-pot, and give to the ball in which the worms are. This should be repeated two or three times, as in such a large ball it may not be possible to kill all the worms in one watering. Many of the worms may be taken out when the Fern is repotted, but perhaps not all; therefore it is well to apply the lime water first.

4072.—**Cineraria Leaves Curling.**—Although there are some kinds of Cinerarias the leaves of which curl naturally, yet it is most probable that yours do so from some other cause. Are they kept too dry at the root? Turn one that is much affected out and see in the first place. Perhaps the atmosphere of the house is too close and dry. We certainly think that one or other of these things must affect your plants, and if this is so you can easily alter them, and either give the plants more water if needed, or keep the atmosphere of the house less dry.—A. D.

4075.—**Pruning Clematis.**—Clematis Lawsoniana belongs to the autumn-blooming or Jackmani group of the family, and the rule in their case is to cut back every winter the growth of the previous summer to within 12 in. of the ground. It may be that in your case this sort of treatment induces late breaking, and, perhaps, it would be best to cut back to about 4 ft. Usually the upper buds push earliest, and, therefore, if these are left the new growth and

bloom will be earlier. This course if followed will be at the expense of the bottom of the plant, which will soon get bare.—A.

4076.—**Tropæolum speciosum.**—You can get seed of Tropæolum speciosum from Messrs. James Carter & Co., seedsmen, High Holborn, and perhaps of most others, at 1s. or 1s. 6d. per packet. Tubers can be had from Messrs. James Backhouse, nurserymen, of York, or Mr. Ware, Tottenham. Seed if obtained should be sown in April under glass and in a gentle warmth, and when the seedlings are strong enough shift into small pots. From these they may be turned out into the open ground. A situation that is warm, but not too much exposed to the burning sun, and deep loamy soil suit best.—A. D.

4059.—**Liquid Manure.**—We have ever found one of the best of all liquid manure to be made with fresh horse droppings without straw saved in a stable. These should be put loosely into a coarse sack or canvas bag, tied, and put into a tub—say one bushel of droppings to ten gallons of water. Give the bag a turn now and then to ensure that the droppings are thoroughly saturated. The liquid will be ready for use after three days' soaking. By adopting this plan the liquid is always clear and free from impurities, and may be employed by a lady without difficulty, and will leave behind no unpleasant smell. A fresh bushel of manure may be added every week if necessary, but so much would hardly be needed with only a small house of plants.

4069.—**Warming and Ventilating.**—There is at present no plan of heating glass-houses so good as hot water heated in a boiler of some kind by ordinary fuel. Whatever the form of boiler may be, it should be large enough to do its work without much pressure even in severe weather, and there should be pipes enough in the house to warm the atmosphere sufficiently without themselves becoming unreasonably hot. These two items should always be insisted on, for there can be no real economy without. I am persuaded in most of the glasshouses in the country this matter does not receive the attention it deserves. I dare say most of the boilers made have some good quality if carefully set, and some years ago I knew an amateur gardener who had no boiler at all in the ordinary sense of the word, but simply a coil of pipes built in a furnace which he put together himself, and which he said answered well. As regards ventilation, I think there should always be the means of admitting air low down close to the ground line, and let it expand and rise as it becomes heated.—E. H.

4058.—**Azaleas Dying.**—Some people are successful in growing Azaleas under the conditions named by your correspondent "Perplexity;" at the same time many fail, or else the many thousands of plants annually imported would not find purchasers. One error often committed is in setting the plants outside in spring. As soon as they have done flowering there seems a desire to get rid of them, but they will not flower well if treated so, because the wood will not ripen. After they have done flowering, the seeds should be picked off and the plants be grouped together at the warmest end of the house, where if possible they can be kept a little closer, and have plenty of moisture in the atmosphere to encourage growth and be syringed with soft water twice daily; in short, maintain the condition that is found most suitable for growth. Any potting that may be necessary should be done at the beginning of the growing season, giving only small shifts, or else the growths may break away too strong. Then, when the growth is finished, give more air to consolidate the wood, and about the end of July or the beginning of August set the plants out on a bed of ashes in the open air in a partially shaded position. One of the causes why Azaleas die is irregularity in supplying them with water. The roots are fine, like hairs, and if the plants are once permitted to become dust dry, these hair-like roots perish, the leaves drop off, and ultimately the plant dies, though it may be months after, and the neglect the plant has suffered from may have gone from the mind. Though these fine rooted plants often die through drought, yet, on the other hand, a good many are killed by kindness, by overdoing it. It requires watchful care to grow Azaleas well; when that is given and their wants are understood they will grow freely enough.—E. H.

4079.—**Hoof Parings as Manure for Vines.**—We have no experience of this material in the culture of Vines, but have used them for most kinds of soft-wooded plants, but we must admit with but little appearance of benefit to the plants in question. Some years ago they were strongly recommended to us for such free rooted subjects as Geraniums and Fuchsias, and we were told to use them in the form of drainage, much in the same way as bones are commonly employed. We did so, and found that not only did they not do what they should have done, and nourished the plant, but they actually proved injurious to it. So far from the roots rushing greedily into the food thus prepared for them, no sooner did the first roots touch it than they decayed, in many instances becoming covered with fungus which the parings bred in any quantity; since that time we have declined to have anything more to do with hoof parings. Possibly, if they were submitted to some previous preparation, they might be employed with benefit. Perhaps some readers of GARDENING may have had more extensive experience of this material, and would give us the benefit of it. We should certainly prefer crushed bones for pot Vines.—J. C. B.

4064.—**Cutting Back Vines.**—As the Vines in question are, we presume, well established, we do not perceive any good cause for cutting them back to any great extent. We would shorten them to about three-fourths of their length in the case of the strongest canes, whilst the weaker ones might be cut in somewhat harder. We would not leave more than two canes to each Vine, and would cut the remainder quite away. If there are no plants in the house, and the Grapes are not required before the autumn, we would keep the Vines quite cool, allowing them to start naturally, and assisting them then when the state of the weather necessitates so doing. If the object is to fruit them at an early period 50° will be enough for the first month by night, rising to 55° in the daytime.—C.

4071.—**Iris anglica.**—I. angelica, xiphoides, or English Iris, and its congener, the Spanish Iris (I. xiphium) are quite hardy, but being at rest for a much shorter period than most bulbs, they must be planted early—not later than October. The best chance with them now is to plant in pots in light soil, such as a mixture of light loam, sand, and leaf-mould or peat, just deep enough to let the tips of the bulbs to be seen; place them in a temperature of about 50°, and keep rather dry until they show signs of springing. They are not likely to bloom the first year.—J. D.

4043.—**Syringing with Soot-water.**—If employed in a perfectly filtered state, soot-water will not discolour the foliage, and at the same time it will impart to it a very deep glossy hue. One of our largest and most successful Camellia growers makes a practice of syringing his large specimens with soot-water throughout the growing season, and strongly urges its constant employment. Soot, as is well known, contains a large percentage of ammonia, and it would appear, when outwardly applied, vegetation has the power of assimilating a portion of it, hence the deep colour which the foliage assumes. One of our large Rose growers, being much troubled with mildew, dusted a portion of his plants thickly with pure soot, which had the effect of destroying that pest, and the portion of the plantation thus treated was afterwards much greener than the general stock. The soot should be tied up in a not too coarse canvas bag, and sunk to the bottom of the tub, allowing the ammoniacal properties to escape as they can. Thus prepared, the foliage will not be stained when used for syringing, and I may add that this is the only right way to prepare soot-water for watering. It should be at all times transparent and free from scum.—J. C. B.

4068.—**Gros Colmar Grape.**—This is a variety which does not give much satisfaction when accorded the treatment considered proper for such a kind as the Black Hamburgh. It should be started early into growth, the beginning of March being none too soon, and requires in ordinary seasons the assistance of fire-heat to ripen it off as well as to mature the wood, which demands more heat to ripen off than that of most kinds. The extra care and expense involved in the culture of this Grape are then repaid by its superior keeping properties, as when well grown there is no difficulty in maintaining it in first-rate order until early spring. This Grape is a fit companion for the Muscat of Alexandria, both demanding a considerable amount of space, plenty of heat, air, and light from the time that they come into flower. For early work it has no value, the Hamburgh being much superior to it, and coming much sooner into fruit. It is simply a first-class late Grape, of high keeping qualities, and of noble appearance. It will certainly succeed grafted on the Black Hamburgh, and this operation may, if so desired, be reversed. We think, however, that in a general way such kinds as the Gros Colmar are not suitable for small growers; we never recommend them, as they demand much skill and more accommodation than can generally be accorded them.—J. C. B.

4055.—**Propagating Variegated Hollies.**—Propagating the variegated varieties of the Holly by cuttings is but seldom resorted to, in the first place because grafting or budding is more expeditious; secondly, because when worked on the type they grow away more freely and make reliable plants in less time. Formerly grafting was the almost universal method of increasing the variegated kinds, February being the time preferred for carrying out this operation. The stocks are to be two years old, and are headed back and whip-grafted. Of late, however, budding has been preferred, and has much to recommend it as being more easily and expeditiously performed. The best time for budding the Holly is in August. The buds should be inserted in the usual manner as near the ground as possible, the stock being left entire until the following March, when it will be seen by the inserted buds being plump or otherwise whether they have taken or not. Those that have taken should be headed back close to the bud, and the failures remain untouched, to be operated on again at the proper time. Cuttings will strike fairly well if inserted in the month of September in free sandy soil, making the soil very firm around them and protecting them from excessive cold and wet. The best place for them is a frame in a north aspect, where they may be cool and shaded during the spring and early summer months. Take care to keep them moist until rooted.—J. C.

4065.—**Grafting Old Fruit Trees.**—Cleft grafting and crown grafting are the methods usually employed in the case of old fruit trees. In the first place the grafts should be at once taken off and laid in in a dry, warm border, and covered up in frosty weather. Only the last year's wood should be taken, choosing such shoots as are free and strong. Cleft grafting is practised when branches from 2 in. to 3 in. in diameter have to be operated upon, and the proper way to go to work is as follows: Head off the branches, with a saw if you like, but pare the surface clean and even with a very sharp knife. Then cut away a portion of the stocks in a sloping manner, so as the crown of the stock may not be more than ½ in. broad. This done, prepare the graft in the following manner: First cut the grafts into lengths of about 6 in. to 8 in. with several buds to each. Then pare away the bark and some of the wood in a sloping manner about 2i n. in length on two sides, making it to have a wedge-like shape. The next thing is to make a cleft in the stock by means of a sharp knife, striking it down with a mallet, making the cut crosswise of the crown of the stock. Wedge the cleft open with some blunt instrument, and insert the graft, rind of course outwards. A variation of this method, and one now much practised, is to leave the stock entire, simply making a cleft in it and inserting a scion on each side, thus giving a double chance of success. Crown grafting is employed when the tree is headed down to the large branches, and is much practised in the case of old trees of which it is desired to change the variety. Cleft grafting may be practised from the middle of February, but crown grafting cannot well be performed until April, when the sap begins to run freely. Commence by paring off the top of the stock quite smooth and level; then prepare the grafts by cutting one side flat and a little sloping about

2 in. in length, making a kind of shoulder at the top of the cut to rest on the head of the stock. Then slit the bark from the top downwards quite to the firm wood, and, opening the rind a little with some wedge-like instrument, introduce it in such a manner as to separate the bark from the wood, and to allow of passing in the graft, the rind of which should be pared off on the side opposite to that which was cut as directed. The advantage of this system of grafting is that a number of grafts may be inserted on one branch, thus clothing the tree in a short time. The clay used should be well wrought, and in applying it bring it well round the grafts, placing quite 1 in. in the crown, and rounding it off a little so as to throw off wet, which if admitted would prevent the grafts uniting with the stock. By the end of May or beginning of June the grafts will have taken, when the clay and bandages should be removed, but a little fresh clay should be placed on the crown of the stock. Grafts inserted by this method generally succeed and go away strongly, but during the first two or three years of growth they are liable to be blown away by high winds, to obviate which a stick should be tied firmly to the old wood, fastening the graft to that.—B.

4073.—**Coal-ashes for Garden Paths.**—We think that your best way would be to lay the ashes on the gravel, not mixing the two materials. Coal-ashes are excellent for kitchen garden paths, as they allow of killing the weeds with the hoe, which cannot well be done where gravel is employed. We would loosen the gravel a little, and place a layer of at least 4 in. of ashes thereon. Weeds will still come, although not in such quantity, and they may be easily hoed up.—J. C.

4060.—**Ampelopsis Veitchi.**—It is most probable that there is objection to the tendrils of your Ampelopsis attaching to an outdoor wall, because the material does not attract, or it may be that it is too cold, or perhaps too dry. The fact that the tendrils attach themselves freely in a greenhouse shows that the plant likes the shelter and probably the moister condition of the wall. We can offer no other explanation.—A. D.

4063.—**Berried Iris.**—Seeds of the Gladwin Iris will grow if they are new and good. Sow in pots of sandy soil in March, placing the pots in the warm frame, gradually hardening them off when the young plants appear. It would be as well to leave them in the pots the first year, planting them out the following spring in a prepared nursery bed.—E. H.

4071.—**Iris anglica.**—English Irises are quite hardy. Plant as soon as the weather is suitable. It is not absolutely necessary to take them up every year. Many of them may be planted in the wild garden and naturalised.—E. H.

4065.—**Grafting Old Fruit Trees.**—Having been pretty successful in grafting on Crab stocks from the woods, I shall be pleased to help "J. T." if he will send me name and address in full. I have plenty of scions of good sorts, both Apple and Pear, and could send two pieces joined in the required manner for illustration.—E. M., *The Croft, Wallingford, Berks.*

4067.—**Liliastrum Anthericum** (St. Bruno's Lily).—This is figured in the "Botanical Magazine," t. 318, root and flowers, and Mr. Grindon's description of "star-like flowers" is fully borne out by the plate, which properly represents the flower as a six-rayed star when fully expanded. The root consists of many more rootlets than four points, which is, I think, what a star-fish possesses.—SOL.

4063.—**Sowing the Gladwin Iris.**—I grow the Gladwin Iris on banks around my garden for the berries in winter, which after the beauty is over I throw on some spare place among shrubs, &c., and always find a quantity of young plants spring up.—GANG FORWARD.

4050.—**Paint on Glass.**—If "Greenhouse" will make a strong solution of common soda with hot water, by its aid he will quickly get off the paint from his glass; indeed, it will fetch paint off anything. Use it hot.—J. W. T.

4113.—**Varieties of Leeks.**—*Forget-me-not.*—You can get seed of any of the varieties of Leek you want from any of the seedsmen who advertise in our columns.

4114.—**Iris iberica.**—I have recently purchased and potted some bulbs of Iris iberica, but cannot find any mention of the plant as a garden Iris in any book I have. Iris iberica should be the Latin name for the Spanish Iris; but of course it is not Iris Xiphium, but seems to be tuberous-rooted. I find in an old book Iris sibirica (the Siberian Iris) recommended as a good hardy, early-flowering species, and as the names of garden plants, especially if difficult to pronounce, "tend ever toward corruption," and as Iris sibirica becomes Iris iberica unless pronounced with the greatest deliberation, I thought the two names might belong to the same plant. Can you solve my difficulty?—J. D. [Iris iberica (the Iberian Iris—Oncocychis ibericus) has only been introduced to gardens a few years. It is a remarkably striking kind, reminding one of I. susiana. It flowers in summer, and requires a good sandy soil. Iris sibirica (Siberian Iris) is totally distinct from the foregoing, and thrives well in the worst clay soils, in which other kinds would perish.]

4115.—**Forwarding Onions and Leeks.**—*G. H. D.*—If you can make up a little heap of manure, which will give a little heat, on which to sow your seed, you will gain time. Put 2 in. or 3 in. of fine light soil on the manure, then place your frame on and sow the seed. If preferred, the seed may be sown in pans or boxes, and placed on the manure.

4116.—**Passion-flower Dying.**—*Robin Hood.*—What do you mean by a greenhouse heated by a fire? If the fire is in the greenhouse no wonder the plant is dying. We cannot name from a dead leaf.

4117.—**Arum Lilies in Water.**—Having read "T. W.'s" account of growing Arum Lilies in water in the open air in GARDENING, Jan. 8, I should be glad to know if I could grow them in the way he describes in a small London greenhouse, kept in the winter at about 45°. Should the experiment be worth trying, what depth of water should the pots be kept in?—P. P. [They would grow perfectly if they got plenty of light. The surface of the pots may be 1 in. or 2 in. under the water.]

4118.—**Asters and Silenes.**—These are annuals, and to flower in July the Silenes should be sown early in March in the open ground, but the Asters must be sown at once in boxes or pots in a warm frame or house, and be pricked off and finally planted out in May.

Weekly Subscriber.—Your question is an advertisement, and as you neither send us name nor address we cannot answer you further.

Wandering Jew.—*Leek.*—Saxifraga sarmentosa.

Bug in Apple Trees.—*Godolphin.*—Paint the affected parts with paraffin oil or Gishurst Compound.

J. E.—We know of no good book on the subject.

Names of Plants.—*Conifers.*—1. Abies balsamea; 2, Thuja orientalis var.; 3, Thuja Wareana; 4, Picea Nordmanniana; 5, Pinus Cembra; 6, Pinus Strobus.—*W. L. S.*—Sedum monstrosum (a hardy plant).—*A. McC.*—Apparently a wild Raspberry of some kind; we cannot name without seeing the bush or fruit of it.

QUERIES.

4119.—**Quick-growing Ivy.**—I wish to cover an unsightly doorway in a garden wall with an arch of creepers. Could anyone kindly tell me the best and fastest-growing Ivy, and what Clematis or other flowering creeper will best grow with the Ivy?—T.

4120.—**Cobæa scandens.**—When does this flower? and is the flower a showy one? Ought this plant be much stopped or cut back?—ERIN.

4121.—**Orchids for Cool Houses.**—Will anyone kindly give a list of twelve best Orchids for cool house, those preferred that will grow on tiles, old wood, &c.? also any directions as to temperature required for them?—ERIN.

4122.—**Tropæolum speciosum.**—Does this die down in winter? and will it grow trained to wire?—ERIN.

4123.—**Slugs and Ferns.**—Having planted Ferns beneath a stand in the greenhouse, I am much annoyed by slugs. Would lime or strong soot thrown round the Ferns injure them? and would it have any permanent effect in ridding the ground of slugs?—ERIN.

4124.—**Lapageria rosea.**—When does Lapageria rosea throw shoots? and growing what is the best time for moving this plant?—ERIN.

4125.—**Cure for Thrips.**—Will some one kindly tell me of a good remedy for thrips? I have several plants, such as Myrtles, Fuchsias, &c., infested with them. Also is nicotine soap good to wash Vine rods.—NOVICE.

4126.—**Improving a Grass Plot.**—I have a Grass plot which I wish to have done up to look beautiful in summer, and be nice to walk upon. Will some reader inform me what I should do, as it looks like a pasture, and is coarse and knotty, the Grass growing in some places 1 ft. high, like a wilderness, and other places nearly bare. The turves were laid at first from a field where building was going on. I am not able to roll it, as I cannot get a roller through the garden gate. Would it be best to sow fresh seeds? and what quantity will be required?—ONE WHO WISHES TO KNOW.

4127.—**Keeping Tomatoes.**—Can anyone tell me if I could possibly keep Tomatoes in good condition until next April? and also the best way to do so?—ARTHUR.

4128.—**Paris Daisies not Flowering.**—Can anyone tell me why my yellow Daisies, Etoile d'Or, have never flowered since being brought in and cut down in October? They have been in gentle heat, and have made strong growth, but all the buds that appear turn brown and die off at once.—L. M. D.

4129.—**Planting Potatoes.**—Will any correspondent answer me the following? I have about ½ an acre of land under Grass. Will it be wise to plant it with Potatoes if ploughed as soon as the frost is gone? and shall I use much manure? and about what quantity of Potatoes would it take to crop it?—R. FRUNCE.

4130.—**Liming Garden Walls.**—I am about to lime my garden walls, which are covered with fruit trees. Will it injure the plants if they get coloured with lime through doing the walls, which they are nailed against?—A TOOL.

4131.—**Nicotiana longiflora.**—I was in hopes that some one would have answered an inquiry of "An Old Salt" in GARDENING of the 8th inst. as to how this plant should be treated. I bought a plant, as did "An Old Salt," and my plant must be own brother to those he describes, as I cannot keep a leaf upon it, and have tried it in several houses. I wish some would give us a hint as to how this "fragrant plant" should be cultivated. To show I am not a confirmed grumbler, I tried the plan, suggested by a correspondent some time ago, of striking Rose cuttings in a bottle of water kept pure by a small piece of charcoal. I have succeeded admirably; the cuttings rooted well. They have been planted in small pots in a light soil, and are now coming into bloom. The cuttings taken at the same time and treated in the ordinary manner are not so forward or so healthy in appearance.—SOPHIA CHRISTY.

4132.—**Mice and Crocuses.**—Can any reader inform me what is the best way to stop the ravages of field mice which are eating my Crocus bulbs in the ground? They do not molest the Hyacinths or Tulips, but will soon have cleared off all my Crocuses.—T. P. Y.

4133.—**Covering Greenhouse Walls.**—I have a lean-to greenhouse; it was erected about three months ago. Can any one tell me what creeping plants would look well and quickly cover them? I tried a Maréchal Niel Rose, but the green fly spoiled it. The wall, which is behind the plant stand, does not get much sun.—PERPLEXITY.

4134.—**Flag Iris.**—I have several plants of the common Flag Iris, which produces a great number of flowers, but only one or two on each stem come to perfection. Those low down the stems do not open; what is the cause?—LEWISHAM.

4135.—**White Primula in Windows.**—I have a white Primula bought last year; it has bloomed almost ever since. We divided the roots in October, and it has not done well. Will some one kindly tell me what soil I ought to use? and if the air of the sitting-room is too warm for it? The fire goes out after 10 p.m.—A NOVICE.

4136.—**Liming Cropped Ground.**—I have a large bed of Turnips; also a bed of Parsnips. Will it hurt either crop if I apply lime to them now? or had I better wait till they are off the ground? The ground I intend for Potatoes I shall feel much obliged if some one will give me the information.—C. B.

4137.—**Treatment of Unhealthy Plants.**—The latter end of March last I took to a small greenhouse, the plants in which were in a very bad state; some of them I saved, amongst them several Camellias, some of which made growth, and others did not. Those that made growth formed buds, but they have all dropped, and some of them are very straggling and bare in the middle. How had I better treat them? I think they are over-potted, so I wish to know if I should repot them and cut them in now or wait till March, as they seem to be pushing for new growth?—R. L.

4138.—**How to make Pelargoniums Flower.**—I have got a dozen good strong plants of Pelargonium in 3-in. pots; they were put in as cuttings last August. I should be glad if some one would let me know what to do to get them to flower next summer, and what sort of soil they should be put in, and when ought they to be repotted.—J. W.

4139.—**Plants for Shady Garden.**—Our house is E. and W., and the garden much built in. The garden is small, but I have by manuring it got beautiful soil, and am anxious to have some nice plants, but we get very little sun (on one side especially), and I shall feel much obliged if some one will tell me which of the following plants will grow best in the shade: Evergreen Thorn, Passion-flower, Clematis Jackmani, Wistaria, Cotoneaster microphylla, Banksian Rose, Moss Rose, Sweet Brier. I want some of these to grow in a box on the balcony and to droop over the rails. Would the Cotoneaster and Wistaria or Passion-flower do? I also want something over the hens' house (very little sun), and some on the far wall, which is very high. I thought they would be protected and warm there. Would the Evergreen Thorn grow on the hens' house over the wood part? the run is covered with wire. Also is it true that Sweet Brier kills other things? or could I plant a Clematis or Rose beside a hedge of it?—BEE

4140.—**Frozen Potatoes.**—Can any one inform me whether frozen Potatoes (sweetened only) are worse for planting? Also what is the cause of Onions rotting? A large percentage of mine rotted this last season, though they were harvested in the best possible manner.—BODFARIAN.

4141.—**Frozen Plants.**—I have an old Grape house very imperfectly heated. I have a lot of Geraniums, mixed kinds, and Fuchsias, old plants and cuttings taken in the autumn. They have done very well till this severe frost came, which I am afraid has killed many; the leaves of the Geraniums have turned all colours but green, and hang down; the stems and branches feel soft and hollow, although the young wood at the ends are still green in some. How shall I treat them? and is there any prospect of preserving any of them?—W. C. W.

4142.—**Hardy Aquatic Plants.**—Will some one kindly name a few good hardy aquatic plants for growing out-of-doors in Lancashire?—W. R.

4143.—**Covering Back Wall of Greenhouse.**—I built a greenhouse, the back wall of which is about 9 ft. high and 13 ft. long. The house is heated by a brick flue running all round, the temperature never rising much above 45°, and is sometimes as low as 38°. The back wall being perfectly bare, I would like it covered with some climber or anything else more suitable. What would be best for such a purpose? Would a Vine or Fig tree be suitable? Also what other plants besides Geraniums and Fuchsias could I grow with success next summer?—GREENHORN.

4144.—**Primulas Failing.**—I have a number of Chinese Primulas which I grew in cold frames last summer. I housed them about the end of September, and they grew and bloomed well until a month ago, when they began to look sickly. The first thing I noticed was the ends of the leaves turning soft, then the flowers began to drop, and now some of them look like rags. On examination I find the base of the leaf-stem (where it joins the main stem of the plant) to be quite rotten in some cases; in others it is still sound. What is the cause of this? and how can I remedy it? I am not aware that I have over-watered the plants, but have watered when almost dry.—SUBSCRIBER.

4145.—**Building and Stocking a Fernery.**—I am about to cover in a corner to form a Fernery. Can any reader recommend a system of glazing in which putty is not required, and is it expensive? Also, which is the best work on Ferns? I want one with plates, which will enable one to identify the different sorts.—HARRY ELLIS.

4146.—**Plum Tree, how to Manage.**—I have a sucker from an old Plum tree; it stands 12 ft. from the ground; there are twelve branches. The old tree has been dead two years; will it require grafting or budding? or will it bear fruit without either? The fruit of the old one was a very large dark brown Plum. A few hints what I had better do with it will oblige.—C. B.

4147.—**Hyacinths Coming into Bloom.**—Will some one be kind enough to tell me whether Hyacinths coming into bloom require the water to be changed? and what to do do with them after they have bloomed?—C. B.

4148.—**Heating a Greenhouse.**—I am building small span-roofed greenhouse about 15 ft. long. Ca any reader tell me from personal experience whether can successfully heat it with gas so as to produce sat factory results?—BECKENHAM.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

ABUTILONS.

THESE are among the most useful of plants for small greenhouses or windows. They are of easy culture, free from attacks of insects, and the variety of their blossoms is now so great that almost any desired colour may be had. For winter flowering, some of the Abutilons are especially useful, the white-flowered kind, called Boule de Neige being the one most preferred for this purpose. The blooms of this are largely used in bouquets during winter. The stamens, which are furnished with yellow anthers, are nipped out with finger and thumb, and the petals are care fully turned back, which gives the flower the appearance of a beautiful white Convolvulus. During summer Abutilons are largely used in flower gardens, and good standard plants of them are very effective. When used in this way, too, they serve two purposes. They make good growth, and form a feature in the flower garden during summer, and if they are lifted and potted before frost comes, and placed in a warm greenhouse, they will give abundance of flowers during the winter. Small plants are, however, the most useful for windows and greenhouses, and they may easily be procured from cuttings struck in sandy soil in a warm frame or greenhouse (or even in a window if a bell-glass can be placed over them) during the spring or summer months. For winter flowering it is a good plan to strike a few cuttings during June or July, pot them on till 6-in. pots are reached, and keep the shoots pinched back to make them bushy. They may be plunged out-of-doors till September, when they may be housed, and if a little manure-water or a top-dressing of some artificial manure be given them occasionally they will continue in flower all the winter and spring. The variegated-leaved kinds are well worth growing for their foliage alone. Such kinds as A. Darwini tessellatum make excellent plants for small vases for room decoration. Some of the more vigorous-growing kinds are also well adapted for covering greenhouse walls. Thus situated, they keep on growing and flowering all the year round, provided they are planted in good loamy soil and are supplied with a little liquid manure occasionally. A. vexillarium and A. insigne make excellent plants for training up rafters or pillars in conservatories, the latter kind yielding in winter abundance of purplish-crimson blossoms. Abutilons may be easily raised from seed, which is a good plan when a number and a variety of plants are required. The seed may be purchased at any good seed house or nursery, and if sown in March or April in a pan of sandy, well-drained soil in a gentle heat it will quickly germinate, and the plants if potted on will grow rapidly, and when allowed to get pot-bound flower abundantly. When standard plants of the small-growing kinds, such as vexillarium, are required, they are grafted on stocks of robust kinds, and thus good heads are quickly formed. When the plants get too large for the window or greenhouse, put in a few cuttings and plant the old plants out in the open air and let them take their chance, or throw them away, as young plants are always the most useful and manageable. Among the best kinds may be mentioned the following, which we have extracted from a report by Mr. A. F. Barron in the *Journal of the Royal Horticultural Society* :—

GROUP OF ABUTILONS.

ANNA CROZY.—Plant of robust, vigorous growth; fine habit; flowering freely late in the season; good for winter flowering. Leaves large, broad. Flowers large, and of finely-cupped form; pale lilac, with dark veinings. Very pretty.

ALPHONSE KARR.—Plant of tall, free growth, and fine branching habit. Leaves small, deeply cut. Flowers small, of fine rounded form, borne on long slender stalks; colour reddish-orange, with dark veinings. Free flowering.

BERANGER.—Plant of tall, erect habit of growth; not branching. Leaves large, deeply cut. Flowers very large and elongated, of a clear pale orange colour, beautifully streaked with dark brown. Very showy, but somewhat shy flowering.

BOULE DE NEIGE.—Plant of fine free-branching habit. Leaves of medium size, somewhat pointed. Flowers of medium size, of finely-cupped form; pure white. Very free flowering. Excellent.

DARWINI GRANDIFLORUM.—Plant of fine habit. Leaves large. Flowers very large, of longish form, of a pale orange colour, with dark veins. Free flowering and good.

DARWINI ROBUSTUM.—Plant of fine, compact habit. Free flowering. Flowers orange, shaded with rose; of fine form. Distinct and good.

DARWINI TESSELLATUM.—Plant of fine, robust habit. Very free flowering. Flowers bright orange, similar to Darwini. Leaves large, broad; beautifully variegated or marbled; light green and yellow. Very ornamental, whether in or out of flower.

Louis Marignac.—Plant of fine habit. Very free flowering. Flowers large, of finely-rounded cupped form; clear pale lilac colour, with slight venations. Very pretty. One of the best.

Louis Van Houtte. — Plant of compact habit of growth. Free flowering. Flowers large, of fine cupped form, but somewhat rough; dark purple colour, with white throat. Distinct and beautiful.

Megapotamicum.—Plant of slender, spreading habit. Leaves small and pointed. Flowers small, bell-shaped, and singularly beautiful, the calyx being dark red, the corolla pale yellow, and the stamens dark brown, in very pleasing contrast.

Megapotamicum variegatum.—A variegated leaved form of the preceding.

Niveum marmoratum.—Plant of free growth. Leaves large, broad, downy, beautifully marbled pale green and yellow. Flowers of medium size and loose form; yellow, streaked with dark orange. Valuable as a handsome foliage plant, and very suitable for bedding.

Perle d'Or.—Fine dwarf-growing habit. Free flowering. Flowers of fine, rounded, cupped form; of a pale Primrose colour. Very pretty. A good variety.

Insigne (syn. igneum).—Plant of tall, free growth. Leaves large, heart-shaped; very thick and rugose; deep green; stem covered with short brown hairs. Flowers borne on long and slender panicles; the petals short, broad, much reflexed, of a dark purplish-crimson colour, with dark venations. A late autumn or winter-flowering species. Very distinct and beautiful.

Le Grelot.—Plant of fine, compact habit. Free flowering. Flowers large, and rather long; finely cupped; of a pale rose colour, with dark venation. A very beautiful variety.

Lemoinei.—Plant of fine, free habit. Leaves large, somewhat pointed and toothed. Free flowering. Flowers large; pale yellow; of finely cupped form; borne on short stalks. A very fine variety.

Sizes of Propagating Pots.—Opinions differ as to the sizes of pots best suited for striking cuttings in; some think 3-in. ones best, others 6-in. ones. My own opinion is that size is of little consequence; some do best potted singly at first, and then the roots do not get broken in potting, as they can be transferred from one pot to another without injury in any way, a point of great importance in the case of brittle-rooted plants. My intention now, however, is to point out to the inexperienced the way in which 8-in. pots may be used to the best advantage; I prefer them, in fact, to either 6-in. or 7-in. pots. In the case of 8-in. pots, instead of putting crocks in them in the usual way, take a small thumb or other pot, according to depth (as they differ in that respect from most potteries), and invert this upside down in the large one; then fill all round it to just above its top with small crocks; on this put some rough material to keep the drainage open, and then fill up with soil in the usual manner. In this way I found uttings to strike as quickly and as well in the centre as round the sides of the pots; the inverted pot forms, as it were, a chamber by means of which the bottom heat is equally distributed all over the pot, and the soil does not remain wet so long in the middle as it otherwise would, causing the cuttings to damp off, especially such as Verbenas and those of a similar character I have found pots crocked in the way just recorded useful for starting such plants as Alternantheras, Coleuses, &c. I put the pots in evaporating troughs and keep them filled with water; here cuttings of such plants strike in a very short time.—C. F.

Japanese Dwarf Gardens.—The following extract is from "Notes and Sketches from the Wild Coasts of Nipon," by Captain H. C. St. John, R.N.: "I have alluded more than once to their diminutive gardens, but I hope a more detailed description here will not be considered tedious. These gardens generally represent some particular scene, and the locality of some favourite temple is frequently chosen. The avenue leading to the shrine, the water, the trees are exactly carried out, all alive and growing, the trees only a few inches in height, the running river of similar proportions; men's figures, proportioned to the trees, are modelled and placed about, just as seen when visiting the temples, or whatever particular scenery the garden represents. Storks and deer, or wild duck, all most absurdly life-like, are also placed about, and the whole garden is kept in this state perpetually. The art of nipping back the proper shoots of these tiny dwarfed trees is thoroughly understood. My Japanese servant made one of these gardens for my cabin; it was about 3 ft. long and 2 ft. wide. It possessed a fine specimen of Pinus Massoniana, several species of Palm, an Oak of grand proportions, a lake on which wild duck were always to be found, and fish of two or three species. Tortoises lived in the long Grass by the margin of the lake. Beautiful Ferns sprang from the Lichen-covered rocks, and occasionally I found a lovely female quietly seated under the shade of the overhanging trees, evidently enjoying the tranquil scene across the lake. Next day a gentleman would arrive, and after much toil would reach the summit of the highest mountain, where he rested, looking far across the country below. I had this garden for a long time on board, and it was a never-failing source of amusement and entertainment."—H. R.

Waterproofing Boots.—In answer to several questions on this subject, I give the following recipe: Take—drying oil, 1 pint; yellow wax, 2 oz.; spirits of turpentine, 2 oz.; and Burgundy pitch, 1 oz., melted over a slow fire. With this composition rub the boots over at a distance from the fire as often as they become dry till they are fully saturated. The leather then is impervious to wet, and lasts much longer than it otherwise would. Thus runs the recipe. Now for my own experience with regard to it. Taking an old, but strong and sound pair of boots, I used this preparation, only substituting common black pitch for the Burgundy (I have since tried the latter, but did not find it so good as the common sort). When the boots were dry, about three weeks or a month after they had received the dressing, I put them to a severe test by walking two miles out and home in a deep snow, and remaining on the snow for two hours assisting in a pyrotechnical exhibition. On taking off my boots I found them quite dry inside and not the least trace of wet on my stockings. After wearing them two or three times they began to take the blacking, which they would not do at first; and with the moderate amount of wear they had to undergo I found that one dressing of the composition was quite sufficient for one season. Of the durability of boots so treated I have no doubt, but they should not be worn till the leather has become quite dry, which need not be more than three weeks if they are kept in a warm dry place. But the best way is to dress them in the summer and not put them on till winter has fairly set in.—B. S. [We have lately received from the inventor of Gishurst Compound some tins of a preparation for boots which our readers may like to hear of. It is called Gishurstine. It is very clean, softens the leather, and keeps the water out—at least so far as our experience of it goes.—It is sold by Price's Candle Company, Battersea.—Ed.]

Protecting Plants from Frost.—It may in this severe weather be of some service to your readers to know that common newspaper, or brown paper, placed round the glass of greenhouses will effectually protect the plants from frost, as I have proved this winter to my gardener's great wonder and satisfaction. —Erin.

Making Plants Hardy.—Nothing contributes more to rendering plants hardy for enduring the sharp cold of winter than a dry bottom. In the first place, a dry soil induces an early ripening of the wood, and we have known this early ripening to make more difference than 20° in temperature. A wet soil causes a late and watery growth, which is easily winter-killed. In the second place, trees and plants standing in a soil not soaked with water will bear greater cold than the same trees water-soaked at the roots. It is well always to bear these facts in mind, and to act accordingly.

VEGETABLES.

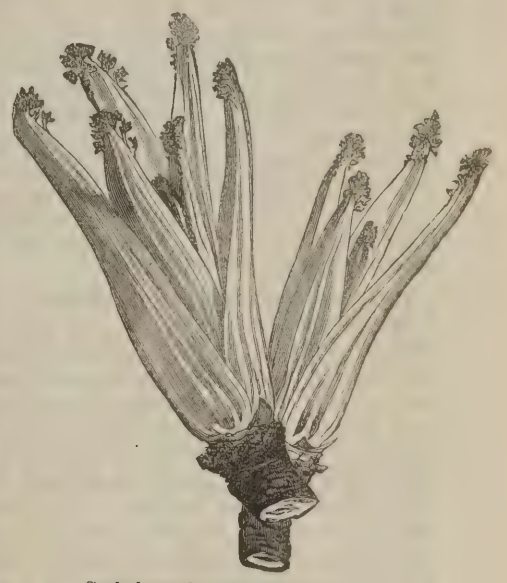
Brussels Sprouts. — These are both hardy and prolific, the severest winter usually leaving them unscathed; and by sowing two or three times at short intervals, a successional supply of this delicious, compact vegetable may be obtained in plenty from October to March, while the old stems will afterwards produce several dishes of tender young greens. Sow a pinch of seed early in March, and again about the end of April. In cold, late situations, this and several other winter Greens may be advantageously sown thinly in September, left in the seed-bed during the winter, pricked off early in spring, and put out finally early in May. This treatment insures an early start, and consequently a long time for growth; and where an autumn supply is desired, it will be found a very good plan to adopt, but though it involves more labour, and the crop occupies the land for a longer time, yet a fuller development of the plants and a better and earlier crop are thereby secured. In many cases an early crop is not required, therefore the March sowing would be early enough, with the April sowing to follow on after Christmas and lengthen out the supply. Although they will make a good return under any reasonable conditions, yet deep, somewhat strong land suits them best. They may be planted immediately after the early Potatoes, if the land be in fair condition, without much preparation, and again a later crop in July wherever land may be vacant. Those plants that are put out early will require rather more space than the later crop—2 ft. apart each way will not be too much for the former if the land be in good heart; whilst for the late crop, 20 in. between the rows and 18 in. between the plants in the rows will suffice. There is a considerable variation in this vegetable, therefore it is important to have seeds only from a reliable source, whether imported or home-grown, I think, matters but little if the stock have been selected with care.—H.

Early Peas.—In most places Peas sown in autumn, unless covered with glass, will this season be a failure, but he who takes time by the forelock will be prepared for this, and there is more than one way of filling up such a vacancy. The simplest and, perhaps, on the whole, the best, is to sow again about the middle of this month as many Peas in 5-in. pots as will make good the loss. The pots may at first stand under a stage, or in any position where a little warmth can be afforded them; but as soon as the green tops push through the soil, they should be taken to a cold pit or frame, and have plenty of ventilation till the weather is suitable for planting them out, which will generally be about the middle of March. There are warm south borders in most gardens available for the earliest crops, and if they can be planted near the foot of a south wall they will sustain no check. The planting should be done when the soil is in a good mellow condition. The sticks should be placed to the rows at the same time, but a few Yew or evergreen branches of some kind should be placed on the windward side to afford shelter. There are other ways of forwarding early Peas under cover all more or less useful, such as cutting pieces of sod about 1 ft. long and 6 in. wide, scooping out the soil along the centre, sowing the Peas, and covering with light, rich soil; then they should be placed in a frame where there is a little warmth, and after undergoing the hardening process, planted out turf and all without disturbing the Peas in the drills in the border; a ridge of warm, mellow soil should be drawn to each side of the rows. Early Peas should be planted rather thick, as it is not often they yield more than one or two good gatherings, and the second crop comes in so quickly after them, that they are not required for continuous bearing, even if they were adapted for it, which they are not. If the roots are broken or disturbed the crop will not be so good, as Peas do not transplant well if the roots are broken. I have sometimes transplanted them when quite small from boxes where they had been sown thickly, taking them up in little patches, and transferring them at once to the drills, but I have always found the less the roots were disturbed the better the crop turned out. For the earliest crop there is nothing much better among white Peas than Ringleader. William the First is a most desirable kind to sow early in the open ground.—R. H.

Pumpkin Seeds Germinating Inside the Fruit.—In September I cut a Pumpkin 11¾ lb. weight, and it was hung up until January 13. When on opening it I found it had germinated above a dozen seeds, and have them now with seed leaves above the fruit.—J. Dodsworth, *St. Mary's Terrace.*

Raising Early Peas.—Ever since the plan of sowing early Peas under glass for transplanting to the open ground has been practised the use of strips of turf for the purpose has been known and advocated. The plan has some obvious advantages over pans, pots, or even boxes of a certain character, but its weak feature consists in the fact that either the turf must be placed on some hard substance, into which the young roots cannot enter, and thus promote weakness and degeneracy, or, if placed on some soft material, such as soil or manure, the young roots soon penetrate it freely, and the disturbance caused to these when transplanted is productive of much mischief. There is yet another danger when strips of turf are used; the turf may contain wireworm or other dangerous insects, and roots of the young plants might be eaten. If the plants be turnod out of pots, pans, or ordinary boxes, then the young roots must be seriously disturbed, and we all know that when plants are so moved from under glass to the open ground, say in the month of March, that it takes some time to get them established and ready to take advantage of the shift to make the required progress. One plan that I have known from experience to answer famously is having a lot of narrow boxes, of, say 2 ft. in length, 4 in. deep, 2½ in. wide on the top, and 3 in. wide at the bottom, inside measure; these are made with moveable bottoms, kept in their place by means of hooks and eyes, two on either side; these are filled with soil, the Peas sown, and then placed together in a frame, where they can remain until the plants are 4 in. in height and ready for transplanting. When this is done deep drills are drawn, the boxes are inverted, the bottoms taken off, and the frame containing the Pea plants placed lengthways in the drill; owing to the shape of the box it will lift freely from the plants without disturbing the roots, and these are found to have formed a mass ready at once to take hold of the new soil. Twenty of these boxes may be made in a short time, and to secure the correct form it is but necessary to cut the ends of the right size—2½ in. by 3 in.—and all the rest will follow. These boxes might be used with advantage in the autumn for striking cuttings of bedding plants.—A. D.

Hints on Raising Seakale.—The propagation of Seakale is accomplished by seed, division of old stools, or by cuttings from the fleshy roots. The seeds should be sown in March or very early in April, but generally speaking most places will afford old stools or old plantations from which new plantings may be made, and sets may be bought ready for planting. They should be planted in lines at from 2 ft. to 3 ft. apart—say 2½ ft., to be precise—and if they are to be forced in the old and useless way, there should be a space of 2 ft. or so between the plants, so that each may be readily found under the usual bed of dung, or under a Seakale pot. The main object should be to make the plants grow as freely as possible, as the bigger the leaf the larger the bud, and the larger the bud the bigger and better the Kale. Pinch off all flowers in the bud, unless you want to save seed, and that is not likely to happen often. If the soil is liable to drought, a mulching or thin layer of some light, half-rotten manure, Cocoa fibre, leaf mould, old Hops, or any fluffy material that can be most easily obtained, will do much good, particularly the season after planting, before the roots have reached down deep and got out of the way of surface drought. Most people cut off the crown or bud of the plant before planting, because if planted whole it would be likely to run to seed, and the secondary buds that spring out around it naturally have not that tendency at first. But it is of little matter, and, indeed, none at all, provided you have a look or two over the sprouting plantation, and see that the buds inclined to run to flower and seed are nipped out early. Do not be satisfied with removing the flower-stems, but nip them out before there is anything of a stem to speak of. Although it matters little what mode of propagation is employed, it may be remarked that not a few of the old growers prefer sowing their seed in thin lines or patches, where it is to remain, and thinning out the plants to proper distances apart when they come up. When the Seakale, in its wild state first begins to swell up through the sand in spring, it is delicious to eat; and it was thus that the west country people used to enjoy it, about a century ago, before it was introduced to our gardens. How few of any vegetables since introduced to gardens possess the grateful virtues of this native root? But I was going to remark that, though it is prime when it comes in naturally, yet few people are satisfied to wait till it reaches



Seakale ready for the Kitchen.

that stage, and it may be had in good condition from before Christmas till March, with but slight expense or trouble.—S.

TREES AND SHRUBS.

Camellias Out-of-doors.—One of the best aspects for Camellias is a south or south-west one, sheltered by a bank or wall. They flourish in a compost consisting of two parts fibrous peat and one part good turfy loam, with an addition of sharp sand. Planting from pots may take place at any period from March to October, but about July is the best time, as the wood is then well ripened. Duke of Devonshire, Halfida, Chandleri, Florida, imbricata, elegans, Alberti, Double White, Donkelaari, Countess of Orkney, Mathotiana, and Lady Hume's Blush are the best for outdoor culture, but in severe weather the flowers will be often damaged unless temporarily sheltered.—W., *Exeter.*

Planting Holly Hedges.—Hollies succeed best when moved in April or May and dull weather, if possible, should be chosen for the operation. August and September are also favourable months for transplanting Hollies. The ground intended for the line of hedge should be trenched from 18 in. to 24 in. deep, and from 3 ft. to 4 ft. wide, turning out bad subsoil and stones and replacing them with rich soil or fibry turf well chopped up and intermixed with the original soil in the line of fence. The plants should be from 12 in. to 18 in. high, bushy and well rooted, and planted just clear of one another. Of course smaller plants will succeed equally well and cost less money, but a longer time must elapse before the hedge will be a sufficient fence against cattle, &c. If the weather and soil be dry when planting wash the soil in amongst the fibres with a liberal soaking of water; finish off the planting by adding a thick layer of litter, Bracken, or any rough herbage

over the roots; this will prove a sure safeguard should a dry summer follow after planting. All the attention that is necessary for two or three years is to keep down weed growth about the necks of the plants. When the latter have become fairly established, and have made vigorous growth, their sides may be slightly trimmed, encouraging a broad base and narrow, wedge-like top. Holly hedges should not be topped until they have attained the desired height necessary to form the desired fence.

Chimonanthus grandiflorus.— This most fragrant and free blooming of all winter-flowering hardy shrubs is now about at its best in a rather sheltered corner of my walled-in kitchen garden, and is most useful for cutting from, now that there is such a scarcity of any kind of flowers, and its blooms last many days in perfection in water after they have been taken from the tree. This large-flowered variety of the bettter known and much more generally grown ordinary Chimonanthus (or, as some still call it, Calycanthus præcox) is in every respect superior to it and much to be preferred to it as, in addition to the individual blooms being very much larger in size, they are also much brighter, being deep straw coloured, whereas those of the ordinary variety are only dull white, of a somewhat dingy hue. It is also a very much more abundant bloomer, an almost equally large bush at the opposite corner of my garden of the common variety having only an odd bloom here and there scattered over it, whereas the large-flowered kind is literally covered with bloom from top to bottom. The perfume much resembles that of a Jonquil.

Propagating Ivy from Layers.— Ivies naturally layer themselves as they trail along the ground, and, in that case, all that is needed is to cut the runner across with a spade, lift it carefully with its rootlets attached, and transfer it to its new situation. In layering Ivies artificially, select good shoots, stretch them out on the ground, place small pots under their joints at intervals of about 15 in. or 18 in. apart, cut the joints half-way through and in a longitudinal direction for about ½ in.; then peg these joints into the pots, which should be filled with a sandy compost, placing some sand about the incision, and cover the joints over with the ordinary soil to the depth of 1 in. or 2 in. By doing this early in the spring, and pinching out the point of the shoot after it begins to grow, layers thus treated will be found to be pretty well rooted by autumn, when they may be separated, and wintered in frames if badly rooted, but, if well rooted, a sheltered place outside will suit them. When very badly rooted. they may be left uncut till spring. Ivy may also be layered in the ordinary way without the aid of pots.

Tropæolum speciosum.—I find that in order to ensure success with this fine scarlet-flowered climber, it should be well established in pots before it is planted out, and during growth water should be freely supplied. It succeeds best in well-drained rich soil.—D.

Sweet Peas.—Flowers of these are always valuable in a cut state in summer, and, where they are required at that season, now is a good time to sow the seed. A moist situation and a deep soil should be chosen for them; they will then bloom in profusion for months in succession.—S.

Salvia splendens.—Now that the period of flowering is about over with this plant, I should like to impress upon those who have a good stock of it, and usually consign them to the rubbish heap, the desirability of keeping them till all danger of frost is over, and then planting them out either in groups or mixed beds for an autumn display. Treated in this way, the effect produced by them is quite striking. We had a mixed bed of these and Chrysanthemum frutescens last year which was much admired, the bold masses of the scarlet Salvia being toned down by its more delicate neighbour the Chrysanthemum. Fuchsias of different colours may be used for bordering the bed.—A. H. R.

Chrysanthemums.—I read in "Notes and Sketches from the Wild Coasts of Nipon," by Capt. H. C. St. John, R.N., "In my own garden in Gloucestershire I have plenty of Chrysanthemums. In Japan this flower is grown in a very different way. On a single stalk about 4 ft. long a single flower is allowed to remain, which in due time has become as large as a good sized Cabbage, or 20 in. to 24 in. in circumference. The long petals curl over each other, forming a charming great white ball. I have often been perfectly astonished at the size and beauty of the flowers."—H. R.

Calliopsis or Coreopsis.—These are valuable hardy annuals, growing in any deep rich soil, and flowering in the greatest profusion. For supplying cut blooms they are among

Calliopsis bicolor nana.

the best of annuals, and they should always be grown for this purpose. They make under good culture specimens from 1 ft. to 3 ft. in height, which bloom throughout the summer. Seed may be sown in August or September for spring and summer blooming, and in March for autumn display. The following are the best kinds, with their colours and height: aristosa, yellow, foliage very ornamental, 2 ft.; bicolor grandiflora, yellow, crimson centre, 2 ft.; b. nigra speciosa, rich velvety crimson, 2 ft.; b. nana, yellow, crimson centre, 1 ft.; b. nigra nana, velvety-crimson, 1 ft.; cardaminæfolia atro-sanguinea, deep velvety crimson, growth beautiful, 1½ ft.; coronata, rich yellow, spotted crimson, a very effective border plant, 1½ ft.; Drummondi, yellow, crimson centre, a charming plant for beds, 1½ ft.; filifolia Burridgei, crimson, edged yellow, very graceful and beautiful, 2 ft.; Engelmanni, bright yellow, in habit and foliage the very perfection of grace, 1 ft.; auriculata, rich

Calliopsis cardaminæfolia.

yellow, 3 ft.; grandiflora, fine yellow, 3 ft.; lanceolata, golden-yellow, 3 ft. The last three are hardy perennials, and valuable where cut flowers are in demand, as they afford for a long time a constant supply. They are easily raised from seed, like the annual kinds.

Select Lobelias.—I do not admire white Lobelias, they are so dingy; indeed, all the so-called white kinds are anything but white; these, therefore, will have no place in my list, nor will the purple or lilac varieties, as I consider them worthless, or, at the best, ineffective either in masses or lines. Only the true blue varieties are really effective in the flower garden, and the best of these are the following: Blue Beauty, a rich dark blue with a white eye, is always covered with flowers throughout the entire season, and rarely exceeds 6 in. in height; its growth is very dense, and, unlike the pumila section, it is not liable to damp off on account of its density (I have given up growing the pumila varieties because of that fault). Blue King, another good kind, is an exact counterpart of Blue Beauty, with the exception of the colour of its flowers, which are light blue. Blue Stone is the darkest flower I have yet seen, and, but for its disposition to produce nothing but flowers, would be in every way a most desirable variety; as it is if planted very thickly to make up for its sparse growth it is most satisfactory. Ebor is a near relative of Blue Stone, but of the two the better grower, and both are fine dwarf kinds. I am, however, by no means sure that both must not succumb to St. Martin's Blue. There are numerous other good varieties, but the above constitute the cream of the many kinds that I have grown.—W.

Wooly Yarrow (Achillea tomentosa.)—This is a most useful plant, growing, as it does, close and compact. It has bright yellow flowers, which are never an annoyance even when faded, although we regularly remove such as are past their best in order to ensure a constant succession of flowers for six or seven months. One must step occasionally on the borders, and we use this and similar plants set at intervals apart as stepping-stones—a gentle kicki n dry weather, or rain in wet, will put all to rights again. A. aurea is beautiful, but not so easily increased as tomentosa; it has long bright foliage, and clear yellow flowers; it grows about 1½ ftr high, and is beyond the stepping-stone line. A. Millefolia rosea is also good, but it is rather straggling in habit for choice borders. We grow many Achilleas; no weateer injures them, and they are useful even when faded. The dwarfest which we have is A. tomentosa; the variegated form of the native A. Millefolia, which has a beautiful leaf, is the tallest; A. ægyptiaca, is 2½ ft. A. Ptarmica fl.-pl., a desirable variety, has double flowers, and is pure white. A Clavennæ, which has hoary foliage, and which is a dwarf grower, we use as an edging alternately with another wild plant named Geum athamanticum. By cutting off the flower-shoots and a portion of its leaves we secure the beautiful feathery foliage of this Umbellifer during the whole season. Naturally after flowering it dies down, and the edging is gone. It is impossible to exhaust the countless hardy plants that grow on one's memory. and possibly our borders—none of which can be cast out; all have much interest and beauty, and the variety is endless—that, perhaps, is the greatest charm of such plants.—F. J. H,

The Autumn Flame-flower (Tritoma grandis).—This takes a prominent rank amongst Tritomas because it keeps so late in flower. I have a plant of it not very large which has flowered ever since September, and even until recently has been in full beauty, being furnished with some ten spikes. The colour is also bright and fine, and the spikes are a little larger than those of T. Uvaria.—M. L.

Eccremocarpus scaber on Wire Arches.—Some seed of this was sown indoors without artificial heat late in the autumn of 1879. In the spring of last year a plant was transferred to the garden, the position selected being against a wall in a sunny situation, though in comparatively poor light soil. It soon started into vigorous growth and having obtained hold on an arch of galvanised wire netting repaid its new-found friend for the support thus afforded by clothing its nakedness in a garb of a most attractive character. The orange-red flowers, which it produced in great abundance, were, it is true rather dull of tint to be striking, but the habit of the plant, its bronzy foliage, and rapid growth made it a general favourite. Of course it looked none the worse for its proximity to a mass of profusely-flowering Sweet Peas, while Clematis Jackmani and Canary Creeper disputed with the intruder the ownership of the spacious arch. I should perhaps add that the garden referred to is situate on the sea-coast of County Down, Ireland.—G. G. P.

Sweet Peas for Garden Decoration.—Amateurs are generally advised to sow these in the open ground, and it is often suggested that they should be sown in November or January, being as hardy as the ordinary culinary Pea. Now, while I do not question the truth of the latter statement, I must advise those who, like myself, are not particularly fond of hazardous experiments in gardening, to act differently. I find that by sowing indoors in pots or boxes about the middle of February, and, when the young plants are 1 in. high, gradually hardening them off, Sweet Peas acquire a sturdiness and toughness which, when they are planted out in good, well-manured soil in April, conduce to rapid growth and immunity from the attacks of birds and slugs, which otherwise feast upon the tender shoots the moment they appear above ground. During the last ten years we have been accustomed to grow Sweet Peas thus with most satisfactory results, while others who sowed too early or in the open ground have met with repeated disappointment. Sweet Peas look remarkably well when grown as hedges or pillars; in either case the ground should be well trenched and plenty of good stable manure worked in, and after the plants have been rather thickly dibbled in, they should have suitably arranged supports of galvanised wire netting placed round them, and then, with a little attention during dry weather, and regular removal of the incipient pods, they will produce wonderful quantities of beautiful and deliciously fragrant flowers all through the summer and autumn.—G. G. P.

Camellias Out-of-doors.—It may be interesting to many to know that, from information gained in this paper, I planted last May in the open ground a few of my worst Camellias as an experiment. One has been in bloom for the past fortnight, and at the present moment looks quite gay. They withstood the last frost without any protection, but I have now placed a little loose manure round their stems.—G. H. A., *Springfield, Chelmsford.*

Primula amœna.—In order to have vigorous plants of this Primula in full bloom in spring it is necessary to divide the old roots every year into small pieces, and pot them in equal parts of turfy loam and leaf-mould, adding plenty of road sand or in lieu of leaf-mould well decayed cow manure may be used with advantage. Good drainage, plenty of water, air, and light are also essential. Thus managed, healthy, vigorous plants, well furnished with Fern-like leaves and a profusion of showy rose-coloured blossoms, may be obtained. A number of plants placed 5 in. or 6 in. apart in deep pans make also effective objects for placing in vases or on pedestals. As a basket plant, too, this Primula may be used with advantage.—C. S.

Common Garden Marigold (Calendula officinalis).—This is one of the best of biennials for autumn and winter flowering. Nothing short of severe frost will prevent it

Common garden Marigold (Calendula officinalis).

yielding abundance of rich orange blossoms. For late blooming seed should be sown in July. Its blossoms are always useful for cutting for vases, &c., and last a long time in water.—V.

Collinsia bicolor.—This is one of the prettiest and showiest of hardy annuals. It may be sown in the open ground in window boxes or pots, in either of which ways it is sure to give satisfaction. The soil should be rich and well drained, and the seed may be sown early in March. When up thin the plants to 5 in. or 6 in. apart each way, and when well established a few small sticks may be needed to support them. A little manure water during dry weather is an advantage, as is also a mulching with rotten manure or Cocoa-nut fibre. For pot culture sow at once in light soil, and place

Collinsia bicolor.

the pots or pans in a frame or window. When well up and fit to handle, prick the plants out into other pots of rich soil, say five plants in a 6-in. pot. Keep them close for a day or two, and when again established, expose them to sun and air. They will flower well in June or July, and may be used for room decoration with good effect. Seeds sown in the open ground in April will give a display of bloom in September. When well grown this Collinsia assumes a pyramidal branching habit, and grows to 12 in. or 18 in. high.

House and Window Gardening.

Table Plants.—In Gardening, Jan. 1, you recommend as a good table plant Casuarina sumatrina. Two kinds grow very freely at Madras and Bangalore, and seeds could be easily procured to put your advice to the test. As they germinate quickly and grow very fast, there would be no difficulty in raising such plants by the autumn of this new-born year. Will you let me recommend also the trial of two other very fast-growing trees for a similar purpose: Poinceana Regia and Grevillia robusta, either of which would make a greater show, particularly the former, with its elegant Fern-like fronds? There is only one objection to it, and that is, that the seeds, with their very hard integument take a long time to make any show, unless they are gently filed and forced, after the method practised by the Bangalore native gardeners. In this way they start in about ten days; the young plants are very showy. I have a few seeds left, but they are four years old and would probably fail if tried, but I expect some in a few days of selected kinds from Bangalore, and will send you a packet for trial; but I have seen them advertised in one or other of the recently-issued seed lists. For the hanging baskets (figured at page 520 of the same number), I would suggest, in addition to the Convolvolus mauritanicus, the trial of several kinds of the dwarf Thunbergia; T. aurantaica, T. alba, T. alata, and T. coccinea, are very effective when well grouped. Ipomœa Quamoclet, red and white, have a charming effect together, and I. ficifolia, or dissecta, I am not sure which, has elegant foliage and a lilac flower. Maurandia Barclayana, blue and white, look well together, and can be trained to any shape with great ease. Eucalyptus globulus, with its glaucous foliage, may be added to the list of table plants; and Acacia robusta, with its very singular foliage, may be tried.—J. P.

Preparing for Spring.—The time is now rapidly approaching when seeds may be sown and offsets and cuttings rooted to take the place of those plants that are lost. Amongst seeds that may be sown now in some of the empty pots are those of Sweet Peas, which will be available for either the inside or the outside of the window. Sow about twenty Peas in a 5-in. pot. They may stand anywhere till the green tops appear above the soil; then they must occupy a position in a light, sunny window, as without plenty of light they will grow too weakly to flower well. If the pots could be suspended in a light window, as I have sometimes seen them, and the Peas encouraged to flow over the top of the pot as they progress, aiding them a little whenever the tendrils seem inclined to disarrange the proper spreading of the shoots, they will have a very pretty effect by-and-bye. They will require plenty of water and a small quantity of some artificial stimulant. Outside the windows they may be planted in boxes, and either be suffered to hang down or be trained up. Anyone having a flower border may fill their empty pots with various plants from that source. Many hardy plants are well worth potting up in autumn and making a special feature of, without any reference to losses or deaths of other plants from severe weather. Hardy Primroses of the commom type in various colours are now in bloom in a cold house; so are Polyanthuses, and Alpine Auriculas are, in some instances, showing their trusses, and such things at this season are more capable of giving pleasure than half dead and withered specimens of Pelargoniums, &c. They should be potted not later than September, and be set on the north side of a wall or fence, and well supplied with water. In November plunge the pots in coal ashes, and if severe frost sets in before they are required for the windows scatter a little dry litter over them, or a few evergreen branches laid over them will suffice. Bulbs of all kinds may be potted up for windows, and if that operation be carefully done they will experience no check. I have lifted clumps when in bloom and potted them without injury, and they may be returned to the border when their flowering season is over.

Cuphea platycentra.—This is a pretty little plant for windows in winter. It strikes freely from cuttings in spring, and if grown in 5-in. pots, and kept pinched back during the summer, it makes bushy little specimens, fur-

Cuphea platycentra.

nished with red, tube-shaped flowers, with white-edged petals. It is sometimes used in the flower garden during summer, but it is not showy enough for that purpose.

FRUIT.

Orchard Notes.—Orchards are commonly cropped year after year until the diminished yield shows that something must be done. The proper way is to give a moderate manuring annually; stable manure put on in the fall and ploughed in, or in small orchards forked in, may be alternated with ashes or lime in other years. Clover to be pastured by sheep or pigs, and after ploughed under, is one of the best fertilisers. Trees of forced growth are more tender than others, and so suffer more from sudden changes of climate. For this reason too high cultivation is as bad as not enough. Wood ashes are the best fertilisers for trees, vines, and bushes. Prune Apple trees so as to give them a low, well-balanced top.

Early Strawberries in Pots.—Having now grown Vicomtesse Héricart de Thury

Strawberry for the earliest forcing sort for several years, I find it by far the best which I have ever tried. The Black Prince will, perhaps, come in a week earlier, but it is subject to mildew, and does not set so freely as the Hericart de Thury, nor is it so finely flavoured. For other two successional early varieties, President and Sir Joseph Paxton do well with me; and last year the Grosse Sucrée, which I can recommend as a good early forcing sort. The early forcing Strawberries are grown here in pits, where the shelves are near the glass. The shelves are of iron and are about 1 in. deep, so that when the sun begins to have some strength in March and April they are filled with weak liquid manure at times. This keeps the roots of the Strawberry in the bottom of the pots well supplied with moisture, and causes the fruit to swell to a better size than when the plants are grown in the usual way.—W. T. W.

Saucers for Strawberries in Pots.—The great evil arising from the use of these is having them too large, whereby they hold so much water that the plants standing in them are drowned, and the roots, therefore, instead of being healthy and active are just the reverse, as must, of necessity, be the case when the soil is always in a wet, sodden condition. Whenever I use them, I always have such as are made for pots a size smaller than those in which we grow Strawberries (6-in.) and then the pots do not quite reach the bottom of the saucer; most of the water in that way which they contain is drawn up by capillary attraction, and is all taken out and made use of during the twenty-four hours. It will be found a good plan where saucers are larger than they should be to nearly fill them with sandy shingle or broken-up horse manure mixed with leaf soil, or anything of that kind that will not get muddy through being so much saturated with water. By managing in this way, plants standing in large saucers are almost if not quite as well circumstanced as those in others of smaller size, as so long as the earthenware of the pot remains in contact with the moist body of matter beneath, it will absorb water from it and give off part of it to the roots.—S. W.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

Feb. 7.—Potting off variegated Pelargoniums struck in boxes; also Verbenas, and putting them into heat, and a batch of Gloxinias; shifting Hollyhocks and Centaureas into larger pots, and placing them in orchard-house; putting in cuttings of Iresine Lindeni, Impatiens Jerdoniæ, Salvia patens, Fuchsias, Coleus, and Gesneras, the latter consisting of leaves; making hills for Cucumbers, in order that they may get warm and ready for planting; dividing Dactylis glomerata var. and Poa trivialis elegans; staking early Peas; strawing up ice-house doors and making safe against sudden change in the weather; fumigating greenhouse for fly and thrips; examining Stephanotis for scale; applying a mixture of lime and soot to Pear trees and Red Currants, as birds are attacking their buds; taking up Artichokes and Parsnips; manuring Rose border ready for digging; stopping the shoots of bedding Calceolarias.

Feb. 8.—Putting in cuttings of Salvia and Mesembryanthemum cordifolium; getting all bulbs out that have been plunged in ashes, and putting them where they can be just protected from frost; dusting Apricots with soot and lime to prevent sparrows from eating their buds; raking up worm-casts on Grass.

Feb. 9.—Preparing a bed under south wall for Radishes; potting off Chrysanthemum Sensation, Veronica variegata, and Gazania; putting in Verbena cuttings; planting Seakale for next season's forcing; regulating creepers in conservatory; top-dressing Lapagerias with good peat and sand.

Feb. 10.—Digging among Currant trees; sowing Melons; putting Zonal Pelargoniums into their flowering pots; potting Lilacs; shifting some potted-off Petunias into 4½-in. pots for early flowering; putting in cuttings of scented Verbena; planting Artichokes.

Feb. 11.—Potting Gladioli in 3-in. pots, and placing them under greenhouse stage to start; planting spare cases with Cauliflower; putting in more Strawberries to force; repotting young tree Mignonette; tying up climbers on verandah; pricking manure into Asparagus beds.

Feb. 12.—Potting off young Fuchsias, Lobelias, Chrysanthemums, and Tuberoses, putting the latter in heat; pricking out earliest Celery in a one-light frame; also Tomatoes, seven to a pot; putting in Mrs. Pollock Pelargonium cuttings; also Pink cuttings in manure-bed, and some Plumbago; shutting up Maréchal Niel Rose-house to induce the plants to bloom; syringing Cherry trees with soapsuds to kill any fly which may be lurking in crevices; finishing the pruning of Gooseberry trees.

Flower Garden.

The protracted frost will have delayed planting generally, but advantage should be taken of the earliest opportunity to recommence and finish it. All kinds of deciduous trees and shrubs should be planted as soon as possible; Roses should also be planted during the present month, as the season for active growth is near, and the later the planting is deferred the greater will be the loss, and growth weakly. Roses delight in a rich, deep loam, well broken, and with an admixture of manure. After planted thus, a top-dressing of manure annually will suffice to keep them in a vigorous condition for several years. They are somewhat impatient of being disturbed at the roots, therefore digging or forking the beds should be done carefully. Dwarf kinds are in every respect much better adapted for beds than standards—in fact, the standard form is little likely to induce persons to grow Roses at all, on account of its unnatural appearance. If a proper Rose garden is impracticable, a well-arranged bed or border entirely devoted to their culture will prove far more enjoyable than double the number of plants indiscriminately dotted about the grounds like inverted mops.

Anemones and Ranuncluses may now be planted in the beds that were manured and deeply dug some time ago. Herbaceous Phloxes are extremely useful and free-flowering plants, and make very effective groups. Irises are again becoming deservedly popular, for besides the gay colours of their blossoms which enliven the open borders, they are very effective and serviceable in a cut state. Other useful plants are the Evening Primroses, the large yellow flowers of which are very showy. Beds wholly of one kind, or edged with a dwarfer-growing kind, are amongst the simplest of the many ways of disposing of the host of really good herbaceous plants that one seldom sees except in mixed borders, where the strong-growing too frequently overrun the weaker kinds, but which, arranging them according to height, would both show to advantage. Any operation in connexion with lawns should be completed forthwith. If sufficient good turf is procurable, that is decidedly the quickest and best way, but on a large scale sowing with lawn Grass seeds is the best substitute. If the land has been trenched and allowed to subside it should be now well raked, and the seed sown evenly over the fine surface, raking it in and rolling frequently afterwards, in order to get a smooth, even surface. If showery weather follow, the seeds will quickly germinate, and as soon as the Grass is sufficiently high it should be cut with a scythe.

In places where there are many trees and shrubs isolated on the lawns, it is impossible to dispense with the scythe, as the mowing machine cannot safely be worked round them without great risk. Mowing machines needing repair should be seen to at once, so as to be ready when required. On mild days the lawn should be swept so as to remove wormcasts, and also a heavy roller passed over, as the smoother and firmer the surface the better for mowing. In some places Daisies, Dandelions, Docks, &c., are very troublesome on lawns, and the best remedy is to draw them out by the root, for, although various remedies are said to be effectual for their removal, none are so efficacious as drawing them out of the soil entire, and then sowing some good lawn Grass seed, covering it with fine mould and a dressing of soot and wood ashes.

Carnations and Picotees.—While the frost continues, not much can be done to these plants. As soon as there is a change of weather it will be necessary to examine the plants carefully and remove any decayed leaves. Though some of the leaves may be decayed at the base of the plants it does not follow that they are in bad health, but if the leaves continue to decay at this season after those that decayed in the autumn were removed, it must be the result of mismanagement. Let the frames be made perfectly close fitting, and fumigate with Tobacco two or three times during the present month, so as to prevent the attacks of green fly rather than a means of destruction.

Auriculas.—Those who have seeds of Auricula should sow them at once, so that good flowering plants may be obtained for next season, whereas, if the sowing is deferred, not so many flowering plants will be obtained. If the seeds are sown now, it is best to use a small shallow pan, well drained, filled nearly to the top with soil, and the surface inch of soil should be fine and sandy. The seeds should be just covered over with fine soil, and a square of glass placed over the surface, so as to leave a space between the soil and the glass. The pans should be plunged in a gentle bottom-heat, but there ought to be but little atmospheric heat.

Dahlias.—In case of there being a large demand for any particular sorts, the roots of these should be potted and placed in a gentle heat, and at the same time should be kept moderately moist. Shoots will soon be produced, and these should be removed when about 3 in. in length. If a successive set of cuttings be expected quickly the first must not be cut too close to the old crowns. The principal collection of roots need not be placed in heat for a month or even more. It will, however, be necessary to examine them, and see that there is no signs of decay, or anything to cause it.

Hardy Cypripediums.—These comprise such an interesting class of plants, and so suitable for cultivating in frames, that they must not be passed over in the present remarks. C. spectabile, C. pubescens, and C. Calceolus grow and increase most freely in a house from which frost is excluded. Repot the plants just before they commence to grow.

Polyanthus.—Seedlings of these are very desirable, and the plants make a fine display in the open borders. Still, the named varieties, when well managed, seldom die off from any cause excepting the attacks of red spider or green fly, which so debilitate the plants that they succumb to a severe winter.

Glasshouses.

Ferns.—Those who have collected spores (seeds) should now sow them on peat. Break the peat into pieces about the size of Peas, and prepare a few well-drained 3-in. pots by filling them to within ½ in. of the rim with peat. Set them on an even surfaoe and give them a thorough watering. The spores should be carefully sown while the surface of the soil is damp. The pots should then be set in a shady part of a warm house or room. The pots should be placed in a pan containing 1 in. of water, which must be replenished as it evaporates. The surface of the soil in pots must not be watered, as the capillary attraction from the water in the pan will be sufficient. Each pan, which should contain about a dozen pots, should then be covered with a bell glass, and kept close until the surface of the soil becomes green, when a little ventilation will be required. Such kinds as the following are best adapted for raising in rooms: Pteris cretica albo-lineata, P. serrulata, P. tremula, P. umbrosa, Polystichum mucronatum, and the various kinds of Lomaria and Lastrea that thrive in a greenhouse temperature.

Camellias that have bloomed should now be placed in a growing atmosphere, and any repotting should now be done. The soil best adapted for the Camellia is a mixture of fibrous peat and loam in equal portions, with a liberal quantity of sand and broken crocks. All the plants should now be examined, and any of the commoner kinds that do not require repotting should be top-dressed, but disturbing the surface-roots of choice hard-wooded plants should be avoided. Calceolarias, Francoas, and all herbaceous plants may receive liberal shifts. The autumn-blooming Heaths should now be breaking freely, and if they need larger pots they should now be repotted. Overcrowding should be avoided now that the plants are commencing to grow, and during mild weather ventilation should be applied freely night and day.

A batch of Pinks from cold frames should now be got forward. The best kinds for forcing are Lady Blanche, Derby Day, Lord Lyons, Anne Boleyn, and Ascot. Myosotis (both white and blue), also the different kinds of early Primulas and Anemone fulgens, should be forwarded gently in heat. Azaleas that are past flowering should be placed in a moist atmosphere, and kept well syringed so as to induce them to break freely. Double Primulas that are past their best should be divided for propagation. A safer method, however, is to place a little very sandy soil about the base of the plants; in this

they will soon form young roots, and the old stools can then be divided without any loss from damping off. These Primulas are so useful and so beautiful, that they amply repay any labour bestowed on them.

Fruit.

Orchard House.—By this time the general stock of trees intended for fruiting in the orchard house will be under glass, and properly supplied with water in sufficient quantity to prevent the blossom buds from falling. This important point having been secured, the flowering should be retarded as much as possible by throwing open all the ventilators when it is not actually freezing, as we may have a repetition of the late spring frosts that have so often injured the crops in unheated houses.

Melons.—In order to secure a few extra early Melons, some of the strongest plants may be selected from the first sowing for special treatment in the hottest and in other respects best adapted compartment at command. Improved Victory of Bath, Eastnor Castle, Read's Scarlet, and Turner's Gem still occupy the front rank when flavour becomes the test of value; moreover, they are good growers, free setters, and mature their fruit early. For this kind of work the grower must have full command of top and bottom heat from pipes, plenty of light, and a good supply of sound Oak leaves or tan. The beds and pots having been prepared as directed in my last, and planted in the compost recommended, train up the trellis, and allow the leaders to grow without stopping them until they begin to throw out side shoots, which will, under generous treatment, show fruit at the first joint. When four female blossoms on each plant can be secured for fertilisation, the leaders may be pinched out, and as soon as a pair of nicely-balanced Melons can be seen swelling away evenly together, everything in the way of lateral growth must be kept constantly pinched and thinned out to prevent overcrowding, care being taken that all the stem leaves are preserved, as a means of securing the rapid flow of the sap and immunity from canker at the joints. When fairly in growth ply the syringe freely, give food in proportion to their strength, and allow the heat to range from 70° to 90° by day from sun and fire-heat combined. Plants intended for pits and frames should be stopped at the third or fourth leaf, and allowed to break again before they are removed from the nursing frame to the hills. Guard against making the hills or ridges large at first, as the soil is liable to scald. Make frequent sowings for succession in pits and houses, always bearing in mind that plants for training up to and over a trellis must be potted on and encouraged to make a vigorous vine; while plants for ordinary beds require stopping as soon as they get well into rough leaf, and that, in either case, sturdy young plants are more valuable than older ones that have become cramped and pot-bound.

The protracted frosts, though they delay the planting and dressing of fruit trees and the borders, will in other respects be advantageous, inasmuch as it will retard the flowering season, and the later this is the greater will be the probability of a fertile setting; but even yet it is well to be prepared for the worst weather, therefore let coverings be in readiness for protecting wall trees. Peaches, Apricots, and Pears all need protection to ensure their safety; next to glass, movable blinds are the best protectors, but where these cannot be had, netting, Yew branches, twiggy Birch sprays, bracken, or finely woven straw screens are good substitutes.

Plums and Cherries are hardier than the kinds above named, and bear a few degrees of frost without injury; but even to these slight protection should be given. As soon as favourable weather sets in, and the state of the soil admits, all planting should be completed, as also should every other operation that necessitates the disturbance of the roots, so that any newly formed roots may become established in the fresh soil before there is any risk of their being checked by drought. With the exception of Figs all other fruit trees may now be pruned, and those against walls, before they are retrained, should be well syringed with soap-suds, the walls also, as a preventive against green and black fly. This application will not kill the scale, and so for this pest the trees require to be painted over with a strong solution of soft soap and sulphur, or with Gishurst at the rate of 6 oz. to each gallon of water.

As soon as all bush fruits are pruned, it is a good plan to splash them all over with a moisture of lime and soot, which is distasteful to small birds, which do much injury at this season; and at the same time it cleanses the trees of Moss and Lichen. Point over all the ground amongst bush fruits, and then apply surface mulching of manure, but it should never be dug in. Grafting Apple and Pear trees may be commenced as soon as milder weather sets in. Stocks on which to operate cannot be too vigorous, neither can the scions be also, provided the wood is well matured.

Vegetables.

The remains of spent crops, such as Cabbages or Brussels Sprouts, should be cleared off, and preparations made for other crops. Make new plantations of Horse-radish, Jerusalem Artichokes, Rhubarb, Garlic, and Shallots. Tansy, Tarragon, and some other herbs should have their crowns divided, and fresh plantations made, if necessary, with the divisions. Some Chives for early use may likewise be protected; also some Parsnips and Jerusalem Artichokes; in fact, the two latter should be lifted altogether, the first to be stored and the room given to other crops, the last to be re-planted. Turn manure heaps at the same time, saving the roughest litter for protecting vegetables and for covering frames.

Cucumbers.—If any of the winter plants are to be kept in bearing through the summer, the surface roots should be encouraged to make their way over the tops of the pots into good friable, turfy loam—somewhat heavier than that used through the winter—placed on tiles to prevent the roots from striking directly into the bed of leaves. Succession compartments now in full bearing will require generous food, constant attention to stopping, and the entire removal of useless spray, from which clean, handsome fruit cannot be expected. If not already done, turn out the first set of spring seedlings before they become pot-bound, and train up sticks to the trellis without stopping. Pinch the points out of others intended for pits and frames, keep them near the glass, and give another shift into larger pots, in preference to planting out, before the manure beds are quite ready for them. Keep sowing a few seeds to make up losses, as well as for succession, as it is always better to have plants to throw away than to feel the want of them. Collect Oak, Beech, or Spanish Chestnut leaves for future use. Just now they are in fine condition for harvesting, and if protected from wet they will keep sound until next autumn.

TOWN GARDENING.

Window Gardening Outside.

This is, as a rule, suitable for the summer season only, as few plants, especially if in pots, will live exposed to the open air in winter in a town. About the only plants we know of that will stand such an ordeal is a good strong Carnation, a pot of Thrift, which is a splendid town plant, and does well in a pot too; Adam's Needles, Yuccas, and Ivy of various kinds. The former we have seen exposed in a small pot on an open windowsill through all seasons, and yet growing, and every autumn producing numbers of beautiful flowers.

Boxes *v.* Pots.—It is a very usual plan to keep pot plants indoors during the winter, and to put them outside on the sill in summer. This is a very good plan in theory, but not in practice. One great objection is, that plants in pots on a dry position like a window sill, exposed to the air all round, so quickly get very dry in summer, that unless you are constantly watering they are in a chronic state of flagginess, and often become withered and stunted. This constant watering, besides being a great labour, is very injurious to the plants. But beyond this where the window faces anything like south, the pots are exposed to the full blaze of the summer sun, and soon get so hot that the tender rootlets coiled round the inside get scorched and destroyed, and so the plant suffers and sometimes dies. And again the pots are very apt to get blown down and broken by wind; so that it is far better in any case, and for south or southerly windows almost absolutely necessary to have the pots protected in some way, and the best means of doing this is to have a suitable box, and sink the pots in this, surrounding them with Moss, tan, Hops, Cocoa-nut fibre refuse, or any open material, both to keep them steady, and retain moisture, or the box may be filled with suitable soil, and the plants set out in this, just as if it were a garden bed, and perhaps on the whole this is the simplest and best plan in most cases, though the other plan has its advantages.

Form of Box.—The box should be as large as possible, *i.e.*, it should be as long as the sill itself, and as wide as this also, or wider for it will be a great advantage, especially if the sill is narrow, to allow it to project a few inches beyond; it can easily be supported by iron or wooden brackets, or held up in some way, so that if you can extend it to 8 in. or 9 in. in width, or even more, it will be far more serviceable than if it were only 5 in. or 6 in. The depth need not be great, certainly not so much so as to look unwieldly or awkward, from 5 in. to 7 in., or 8 in. inside being plenty. A very good size is the length of the sill, say 2 ft. 6 in. or 3 ft. by 6½ in. wide and 5½ in. deep, inside measurement, though make it wider if you can, but this size can be made without any cutting except sawing the lengths off from a piece of flooring board, which can be had for a very low price at any timber yard. The usual price is 1d. per foot, so that supposing your windowsill is 3 ft. long, you want three lengths, one for each side, and one for the bottom, with 1 ft. extra to make the two ends, and the whole will only cost 10d. Nail the two sides on to the edge of the bottom and the ends inside; eight or ten holes should be made with a ¾-in. auger in the bottom, and three or four cross strips, about ½ in. thick, be nailed on the bottom, so as to allow the water to run freely away. The box would be the better of a a coat of paint outside, but leave the inside plain, or it may be thinly coated with a mixture of clay, cow manure, and water; green or a good chocolate we consider the best colour. If you want to ornament it, get some straight stakes, such as stout Beansticks, cut into lengths with the bark on, split them in halves, and either point the tops and nail them on outside, round side out all along the front, or cut them to fit, and fasten them on in diamonds, squares, or any convenient shape; or a few pieces of virgin cork may be tastefully disposed on the front. In any case, varnish over the whole when completed.

Most plants grow more freely, and become more dwarf and compact in habit when planted out in soil in the boxes, but when the pots are plunged you can change one that has gone out of bloom or become unhealthy for a fresh one, or turn the plants round, or re-arrange them afresh. So you must consider your resources, and do which you like best; but if well done and all the plants healthy, the planting out gives the better general effect, especially if you have a neat border of Lobelia or Golden Feather, and then you can put the plants in so much closer, and have more than if they were in pots.

Soil for Window Boxes.—In preparing a box for filling with soil, put a good large flat crock or piece of broken tile over each hole, and then cover the bottom with about 1½ in. of crocks, bricks broken small, or ballast; on this a layer of old spent Hops, or littery half-decayed manure, and fill up with soil. The best for this purpose is that recommended for potting, viz., two parts of good fibrous loam or and decayed turf and one part each of leaf mould well-rotted manure with a little crushed charcoal and sand. But any good garden soil will do if not too fine or rubbishy, mixed with a good proportion of old decayed manure: the leaf soil is not absolutely necessary, but have fresh country soil if you can get it. Make the soil pretty firm, especially at the bottom, and set the plants cut, the smallest in front (outside) and the taller ones behind. Give a good watering to settle the soil and the box is complete. Where the pots are to be plunged, no drainage, except a crock over each hole, is needed, but just set the pots in their places and pack the Cocoa-nut fibre, or what you have, firmly between and among them. Of course in this case the pots must be watered separately as required, but it is well to keep the plunging material moist also.

Arranging the Plants.—A few arrangements of common easily-grown plants are given as under: 1, a scarlet or white Geranium and a stiff-growing Fuchsia alternately for the back row, having a Geranium at each end, and a border of Lobelia or Golden Feather, or these arranged alternately along the front; 2, a tall old white Fuchsia, such as Mrs. Bennett, in the centre, with a good scarlet Geranium on each side of it, and smaller Geraniums, Fuchsias, or yellow Calceolarias again on either side of these with an edge as for the last, or you may break the monotony by having a drooping Fuchsia, such as Mrs. Marshall, to hang over the front in the centre, or one at each end; 3, a Balsam (white) and a scarlet Geranium, or white and scarlet Geraniums alternately along the back (but the white Geraniums do not do so well or flower so freely as the scarlet and white variegated Geraniums, like Flower of Spring, do not grow so well, so that we think the Balsams best), and a row of Petunias or a white Petunia and a Lobelia alternately along the front; 4, same as the last, but have a white Stock alternately with the scarlet Geraniums, or a white and purple Stock alternately with the same bordering or any of those mentioned (Creeping Jenny makes a splendid edging for a box, especially in a shady window, it hangs over the front so beautifully); 5, Stocks in alternate or any variety of colours for the back, and a row of Mignonette sown previously along the front (this will grow and droop over, and you will have a bouquet with these two); 6, a row of Tom Thumb Nasturtium or Tropæolum, scarlet, sown in its place in April, and thinned out as required for the back, and a row of white Petunias or Verbenas along the front. These may be transposed or added to *ad libitum*. It is a great improvement to sow a few seeds of major Convolvulus at each end of the box, and let them run up strings properly arranged, or a couple of long withies or canes bent over and stuck in at each end so as to form an arch. This looks very pretty, and another plan is to get a couple of young roots of Virginian Creeper, just little rooted pieces with two or three shoots just starting, and put them in at the ends and train them over. We have, unfortunately, never tried Thunbergias for this particular purpose, at least not in town, though they do splendidly in the country, but we recommend giving them a trial; they are wondrously pretty, especially the dark-eyed ones, and will stand anything almost, but they have to be raised in heat and planted out early in June.

Godetia Whitneyi (New Spotted).—This is a strain of beautiful blothed and striped varieties, remarkable for the great size and brilliancy of the flowers. The individual blooms are of great size, frequently measuring 4 in. to 4½ in. across, and vary in colour from the most delicate satiny white, stripped with pale rose, to the most beautiful carmine and crimson, all the petals being distinctly marked with bars of a deeper colour. The plants, which grow about 1 ft. high, are of the same robust, compact habit of growth as the old G. Whitneyi, and should consequently not be planted closer than 9 in. or 1 ft. apart. This fine annual, which is perfectly hardy, is now being offered by Messrs. Daniels Brothers, of Norwich, to whose illustrated guide we are also indebted for a very good engraving of Camellia-flowered Balsams given on p. 587.

Protecting Window Plants.—Few people seem to realise the protection there is in common brown paper, or the ordinary paper on which newspapers are printed. In a fairly well constructed dwelling house, if the plants be taken from the windows in the evening, placed in a corner near the fireplace free from draught, with a newspaper thrown over them, they would generally be safe; but only the most patient and thoughtful are capable of following out any such plan to the end. I have known cases in which the greatest pains have been taken to protect the plants for a time, and then perhaps on some particularly sharp night they have been forgotten, the whole previous trouble thus counting for nothing. As soon as it can be clearly seen which plants are really dead and which are not, those that have perished should be thrown out, and the pots washed ready for their next occupants.

GLASSHOUSES AND FRAMES.

GROWING BALSAMS.

As regards colour of flower, Balsams comprise the most delicate tints of scarlet, salmon, maroon, rose, white, purple, &c., and the blooms rival in beauty, substance, and form some of the smaller species of Camellia. Of late years the blossoms of Balsams have deteriorated sadly, so that it becomes necessary in procuring seeds to see that they come from a trustworthy source.

Sowing.—The cultural details, though simple enough, must have attention at the proper time, or the foundation of a specimen plant cannot be laid. To have good specimens early in July the seeds should be sown in March; if for late work, the sowing may be deferred till the middle of April; or if the plants be intended for front rows or small stages, and only intended to occupy 8-in. pots, a safe calculation may be eight weeks from the time of sowing till the plants are in bloom. The culture of large specimens differs little from that of smaller plants, if the latter be well managed, except that a defective foundation will be more obvious in the former than in the

New Spotted Godetia.

latter case. In sowing the seeds it is necessary, in the first place, to make the usual preparation by having the requisite number of clean 3-in. pots crocked, and the soil ready to proceed with the operation of sowing. The different colours will be best kept by themselves and legibly named. The pots should be filled with mould about half-way up, and two seeds should be dropped into the centre of each (if both seeds germinate, one of the plants will, of course, be pulled out) with the name of the colour attached. If the pots be kept together, the seeds can be covered thinly through a fine sieve, and taken to a warm frame and plunged. I prefer beds where the heat is on the decline, as, for instance, one that has been used for propagating purposes till the heat had abated to a gentle warmth, so that something like natural time may be given for germination, and growth may not be unduly hastened.

Potting.—When the young seedlings appear above the rim of the pot they should be earthed up, leaving the usual space for a supply of water. It may be necessary at the same time to raise the plants nearer the glass by a fresh addition of half-spent material to make up for the subsidence that took place during fermentation. At this stage especially it is of the utmost importance to have the young plants as near the glass as is consistent with safety from breakage when giving air or from scorching in case of changeable weather. Water through a moderate-sized rose, and ventilate on all favourable occasions, in order to secure short, stubby growth; better admit a little air, even if it be necessary to do so through a piece of fine canvas, if the weather should be unpropitious, than to give none. In a week or ten days the young plants will be ready for a shift into 5-in. pots, and will have made two shoots at the base of the perpendicular one on either side; those that do not behave in this way should be either potted for packing plants, *i.e.*, filling in between other pots, or thrown away, as they never made handsome specimens. A fine day should be chosen for removing them from the frame to the potting bench, and the material in which they are to be potted should be a rich compost of good soil, cow manure, and rough leaf-mould, well incorporated and warmed to the same temperature as that in which the plants have been growing. The pots should also be warmed before they are crocked. In potting let the two bottom shoots hitherto mentioned be trained horizontally level with the rim of the pot.

Airing, Watering, &c.—When the potting has been completed they should be returned to the frame and plunged, making allowance this time both as regards height and width for the rapid progress which they are sure to make under the conditions adverted to. The bottom-heat at this stage will be about enough to accelerate fresh root action and impart tone and vigour to the plant. The frame should never be quite closed under any circumstances, and the more air that can be safely given at all times the better. Another pair of shoots will soon be produced at the base a little higher up, and these must be pegged down as previously indicated. These four shoots form the foundation of the future specimen, and the upright stem will soon clothe itself with a number of shoots, which must be taken in hand in a similar manner.

At the next shift the ultimate size of the plant must be determined. A 10-in. or 12-in. pot will be quite large enough for all practical purposes, and as the requisite conditions this time are identical with the last, it will be unnecessary to go over the same ground again. Up to the time at which the specimen is fully grown I would recommend a gentle warmth at the root. The plants should also be given plenty of room for a free circulation of air to play among them. When they have become re-established after their final shift they will require almost daily attention to training. A frame-work can be made of sticks painted green, with a piece of tar cord forming the extremity or outer line of the circle, and an inner circle might also be formed in the same way to facilitate the process of training. The leading shoot will, of course, be tied to an upright stake, and as the plant furnishes itself, every shoot should be drawn in a downward direction by means of a piece of matting suspended from the outer extremity of the frame-work to the tip of the shoot. Each shoot pulled down in this way will break out at every point into a number of other shoots, and so on till the specimen attains the desired proportions.

The flowers should be picked off the earlier-formed growths as they make their appearance till the plant has become furnished and well proportioned from top to bottom, after which flowers may be encouraged, and, if necessary, the plants may be taken to any house in which there is plenty of light till such time as they are ready for the embellishment of the show house or conservatory. These plants require careful attention in watering, and will almost live on liquid manure throughout the whole growing season in case a rich compost is not at command. W. H.

Hardy Primroses under Glass.—For several winters I have had coloured varieties of garden Primroses in bloom more or less the whole winter through. Fearing a sharp winter, I have always lifted a number of plants and re-planted them under glass in a temperature of from 40° to 45°, and they have well repaid the trouble by a fine display of broom, while those that were out-of-doors still looked as if spring was in the remote future.—J. G. L.

ANSWERS TO QUERIES.

4090.—**Erecting a Cucumber House.**—Sink the house about 1 ft. in the ground, with about 2 ft. of brickwork above the ground level, on the top of which the wall plates supporting the roof should rest. The roof should be a fixture with a double ridge piece, and a movable cap worked by a lever for ventilation. The roof must not be too steep for Cucumbers, or the atmosphere in the house will become so dry in hot weather the red spider will be troublesome. It will be better to sink the pathway a little more, and be contented with a little less head room inside than to run any risk. I lay some stress upon this point because I know a case where the roof was built to catch every ray of sun, thinking the Cucumbers would like it, and the moment the plants grew up into the roof the red spider was upon them, and nothing availed to alter it till the roof was taken off and the rafters shortened, and then all went well. I should rather have the house stand north and south end on. When building the walls put in a couple of air bricks near the ground line on each side; they can be easily closed in cold weather. I need say nothing about the flue, as any bricklayer knows how to build one that will draw well, and that is the chief requisite. Supposing the house to be 7 ft. wide, the space inside might be divided by three, forming a bed or pit on the east side for Cucumbers, a stage on the west for plants, and a path down the centre. The flue should be taken along under the stage, first to give top-heat, and return under the bed for bottom heat, covering it in with slates or boards.—E. H.

4086.—**Grafting Fruit Trees.**—The stocks may be planted as soon as the weather breaks, but they must not be grafted this spring; let them have time to get established. If they were grafted the young trees would not do much the first year. They might be budded in July, and budding produces good trees. The Paradise stock was so named from its supposed origin in America, where it is thought the Garden of Eden was situated. It is chiefly valuable on inferior soils on account of its surface-rooting habit. The true Paradise stocks are generally raised from layers or cuttings. The free stock is obtained from sowing Apple pips, and are consequently seedlings. The English Paradise stocks are often selected from the weaklings possessing a surface-rooting habit in a bed of seedlings. Where a large quantity of Apple pips are sown some will develop a surface-rooting habit, and these often make excellent dwarfing stocks.—E. H.

4102.—**Transplanting Pear Trees, &c.**—If the land is naturally dry, there will be no draining materials required in the holes, which should be deep enough to permit of the trees being planted about the same depth as before. In making the holes plenty of space should be allowed to lay the roots out straight and something over, so as to surround their extremities with good friable soil for them to fibre into. Fill in the holes with the turfy loam, and mulch with the old hot-bed manure. The question of cutting back the trees can only be decided on the spot. If lifted carefully with plenty of roots don't cut back, but stake or otherwise secure the trees from wind-waving, or all your labour will be in vain.—E. H.

4091.—**Growing Mushrooms.**—There is no reason why your idea if carefully carried out should not succeed; but I should not recommend fowls' manure; it is of too burning a nature. Use stable manure, and either ferment it for ten days or a fortnight before making up the beds, so as to drive off some of its rankness, or else mix a fourth of loamy soil with it, to absorb the gases and reduce the over-heating liability to a safe medium condition. Obtain good spawn and keep in a dry, warm place until it is used.—E. H.

4100.—**Manuring and Planting Fruit Trees.**—Peruvian guano is the best artificial manure for general purposes. Bones in any fresh form or in the form of phosphates are also good. All of the manures mentioned may be applied by scattering them at the rate of 3 cwt. in the case of the former per acre, and 4 cwt. or 5 cwt. in the case of the latter, and lightly forking them in, blending and mixing them well with the soil. They may also be profitably used in rather less quantities as top-dressings during spring and early summer to the growing crops. Either or all of the manures I have named are good for fruit trees. Soot is also excellent for a top-dressing. House slops and liquid manure of all kinds will be beneficial. If very strong they should be diluted. The Chestnut and Oak trees should be removed before the fruit trees are planted. Plant Pears and Plums on the fence.—E. H.

4089.—**Laying Down a Lawn.**—You may safely fill up to the proper level with good mould, only in the places where the good new soil lies deepest some means should be adopted to firm it, or it will settle unequally; treading or rolling may suffice. Sow plenty of good seeds about the end of March or beginning of April. The old Grass if it breaks through will be no disadvantage. The mowing machine and roller during the summer as soon as the new Grasses can bear its weight will put matters right.—E. H.

4087.—**How to Grow Cucumbers.**—Before answering Mr. T. Box's question I should like to ask him one or two, viz.: When does he want to cut Cucumbers? and what heating power has he at his command? Cucumbers in winter and early spring should have a night temperature of 65° with a rise of 10° or more in the daytime. There should also be a little bottom-heat either from hot water or fermenting materials, but when the plants have fairly settled down to their work, I think a bottom-heat of 75° is quite sufficient. I believe in some cases the plants are injured by too much bottom-heat being employed. Provision must be made for moisture in the atmosphere either by having pans on the pipes or by syringing the walls and paths. Turfy loam with a third of old hot-bed manure, leaf-mould, or dried horse droppings will form a good compost to plant in. Unless your correspondent can command the temperatures I have given, he had better not begin too early; April will be time enough to start his plants. Cucumbers are easily grown in a greenhouse in summer with only sun-heat. French Beans may be grown successfully with Cucumbers in any stage, as they require the same temperature and same atmospherical conditions, but they should occupy a light position.—E. H.

Camellia flowered Balsam.

4083.—**Culture of Eranthemum pulchellum.**—The young free shoots of this plant should be taken off in February, dibbled singly into small pots in a compost of sandy peat, and placed under a hand-glass or in a frame in a warm house. As soon as they appear to be well furnished with roots, inure them to the general atmosphere of the structure, and in the course of a week or so shift them into 2½-in. pots, using a sweet compost of peat and leaf-mould in equal proportions, adding enough coarse silver sand to it to ensure its remaining free and open. This plant likes during the summer a moisture-ladened warm atmosphere, but at the same time it enjoys the free admission of light, and should therefore be placed in the lightest position in the house, and not, as too often the case, be placed in the partial shade of other plants. The amount of bloom and its quality entirely depends upon the employment of a suitable compost, congenial atmospheric conditions, and the vigour of wood and foliage engendered by a free admission of light throughout the growing season. The final shift should be given in June into 4½-in. pots, this time adding a little loam to the compost. Towards the latter end of the summer admit air more freely and be careful with the syringe, as the object is at that time rather to arrest growth and solidify the tissues. Old plants from which cuttings have been taken should be allowed to start, and then have the greater portion of the old soil shaken away from them, and be replaced in the same sized pots to be shifted on when required.—J.

4110.—**Propagating Tuberous Begonias.**—Cuttings may be taken of the young wood as soon as the plants have come fairly into growth. It is not, however advisable to take them off too early, or the mother plant suffers a check. When the tubers start into growth, shake them out and pot them in a nice free compost of half leaf-mould and loam, ensuring porosity by throwing into it a good dash of silver sand. Let the pots be only just large enough to contain the fibres; if these latter touch the sides of the pots no matter, as the object is to make the old roots throw out fresh fibres, and this they will do most readily when they are so situated that the soil around them cannot by any means become even slightly overcharged with moisture. In a short time they will need shifting into larger pots, and it is just when they have grasped this fresh body of soil and have commenced to derive benefit from it that the cuttings may be taken, as they will then be free, and the plant will be sufficiently vigorous to withstand the slight check entailed upon it by their removal. Cut the young shoots to some three joints, and insert them in sandy peat, keeping the soil moist and the atmosphere clear until they have formed roots.—J.C.

4073.—**Coal-ashes for Paths.**—Coal-ashes are excellent for paths, as they allow of killing the weeds with the hoe, which cannot well be done where gravel is employed.

4084.—**Azalea mollis and sinensis.**—Both these Azaleas can be forced year after year if the plants are guarded against injury when brought out of the glass structure. When removed from the conservatory they should be placed in a cool, airy house or in a cold frame, so that they may be protected against inclement weather, and by getting plenty of air on all favourable occasions, will be gradually hardened off and be fitted for their residence in the open air. By the latter end of May they should be removed to some sheltered situation in the open air, taking care not to allow them to become dry at the root, and so placing them that they are well screened from cutting easterly or rough westerly winds. The success to be derived depends in a great measure upon the care exercised at this period, for if the foliage gets crippled or the root fibres perish, the plant does not recover in time to furnish itself that year with sufficiently robust and matured wood to form good flower-buds. About the beginning of June, having well prepared a piece of soil in an open, sunny situation, work away as much of the old soil as may be done without

injury to the roots. Plant them out a good distance apart, mulch with some good manure, and water well in hot weather. In this manner the same plants may be made to do duty for several years.—J. B.

4109.—**Begonias for Bedding.**—The advantages to be derived from starting the plants in heat are that they will come sooner into bloom, and, if grown along freely, will form much larger specimens by the time that it is desirable to plant them in the open air. A tuber started say the beginning of March will have the advantage of coming freely into growth by the time those standing in a cool house will be starting, and will make a fine effect early in the season. We would plunge the pots, just as they are, in a hotbed about the first week in March, and when the plants have fairly started into growth we would shake away all the old soil and pot them in fresh, free, light, sandy compost, plunging them again in bottom-heat. By the beginning of May they may be placed in a cool greenhouse, giving abundance of air in fine weather, or they may be stood in a cold frame, as the object is, during that month, not so much to promote rank growth as to bring them into a sturdy, hardy condition, thereby fitting them for a residence in the open air. There is, however, no absolute necessity for starting the tubers in bottom-heat; if left to themselves they will commence to grow when the natural temperature allows of their so doing. In any case it is better to shake away all the old soil and re-pot, but use pots only just large enough to contain the roots, and in the case of the early-started ones shift when the soil becomes full of fibres.—G. C. B.

4081.—**Spiræas Decaying.**—We can only surmise that too much water has been given, with the consequent effect of rotting the roots. The answer to such queries as this would be much facilitated if correspondents would be a little more lavish of details. You do not say, for instance, whether the plants are in heat or at rest in a cool house or in a cold frame. If they have been standing in a low temperature, and were fresh potted up in autumn, they should have been very carefully watered, for although this plant when in full growth is greedy of moisture, and when coming into bloom is greatly helped by having the pot placed in a saucer to be filled up now and then with weak liquid manure, it is extremely impatient in its earlier stages of growth of stagnant moisture at the roots. All that you can do is to cut away with a sharp knife all decayed portions of root, pot the plants in light sandy compost, well draining the pots and giving just enough water to keep the soil moist. As the plants have suffered to a serious extent, we would not place them in heat, but would let them come along gradually with the season. During the summer plunge the pots up to the rims in a sunny part of the garden, and water copiously in hot weather with weak liquid manure.—C. B.

4111.—**Double Geraniums not Flowering.**—Double Geraniums as a rule are more gross of habit and are not so floriferous as the single varieties. They require a very light, airy situation in the open air during the summer, or to be placed near the glass in a well-ventilated, unshaded greenhouse. The latter is by far the best place for them, as they there acquire greater substance of wood and foliage, do not run so much to leaf, and develop and perfect their bloom in a much better manner than when growing in the open air. Unless a window is very light indeed, and free ventilation can be given, the double Geraniums are not likely to do well therein, and we should certainly always reccommend the single kinds in preference to them. All that can be done now is to keep the plants in as cool an atmosphere as possible, and when the brighter and milder weather comes give as much air as possible without exposing to chilling draughts. Then about the beginning of June place the plant in the open air in a sunny situation. If it is in a large pot we would not shift it, as these double Geraniums do not care about too much pot room; they never flower so freely as when the soil is crammed full of roots. In the summer a top-dressing of soot may be given, which will strengthen without stimulating too much.—C.

4105.—**Propagating Mulberry Trees.**—If "An Emigrant" requires Mulberry cuttings off Mulberry trees of the white varieties for rearing silkworms (or seeds, the latter direct from Italy), I can supply him with any number if he will write to me. It is a good distance to carry cuttings to North America, but if cut in mild weather with a little old wood at their bottoms, I doubt not I could pack them so as to go the journey, and they might strike roots in North America laid in the ground in a protected situation to keep them until the first week in April, and then plant them in 1 ft. of common sandy soil on a hotbed, shading from sun when hot until fairly rooted.—Leonard Harman, *Prospect Hill, Old Catton, Norwich.*

4097.—**Worms in Conservatory Border.**—We cannot do better than recommend the general recipe for killing worms, that is, strong lime water. It is invariably advised for the purpose named, and is easily made by putting one gallon of fresh slaked lime into six gallons of water, stirring well, and then allowing to remain for several hours till quite clear. Water the border freely with this mixture several times at intervals, and it is probable that most of the worms will be killed. As worms come out chiefly at night, no doubt if the solution were then applied it would be much more effective.

4099.—**Hyacinths in Glasses.**—It is well in the case of Hyacinths in glasses to remove them from the window during hard weather, as the water may get frozen. Perhaps yours may have suffered from that cause. The best water is that which is soft, and a piece of charcoal about the size of a marble is useful if put into the water, as it serves to purify the water and keep it healthy. Many growers of Hyacinths in glasses do not change their water from the time the bulb is put in till it has done blooming. Perhaps you may have changed the water, and in doing so given some fresh that was far too cold.—A. D.

4069.—**Warming and Ventilating.**—"G. S. C." is right in saying that oil gives a very unpleasant atmosphere and the cost is great. I tried two 1-in. wicks a year ago and found the heat therefrom quite insufficient, and the oil burned was a gallon per week, at 1s. per gallon, for night work only. My lean-to is now very efficiently heated by a flue under the front stage running once down the house; the furnace is about 2 ft. long by 2 ft. high and 1½ ft. broad; there is a sharp rise of 1 ft. from the furnace to flue, which is nearly level to the chimney; the chimney is inside, and passes through a galvanised iron pane in the roof; it rests on a brick base of about 4 ft., and is simply a piece of 6-in. piping with a damper inserted just outside the roof; the flue near the fire is of fire-brick (as the furnace must be); the rest may be common brick. I built the flue five bricks high and wide enough to allow tiles to rest thereon; these form the top of the flue. With this arrangement I can get up a heat of 65° with the thermometer at 16° outside, although the house being wood is anything but air-tight. I burn what is called at the gas-work breese; it is the cinder from coke partly burnt in the furnaces; it costs here 1s. per cartload, not including cartage. A load lasts me three months in mid-winter, but a little coal is necessary to get the fire started; when the heat is up, slake down the fire with the finer breese and ashes and nearly shut off the damper; your fire will then burn 12 hours easily, and need never be let out if you remove the clinkers from the furnace bars.—Pat.

4082.—**How to Propagate Mistletoe.**—Cut with a sharp knife a tongue in the shape of a letter V in the bark, lift it, and place the seed of Mistletoe under it. It is better to make this incision on the lower side of the branch, as the seed will be less exposed to destruction by snow and rain. Beware of the mistake of boring a hole in the wood to contain the seed. This is a common cause of failure in sowing the Mistletoe. On the Continent I have seen Mistletoe growing on Fir trees; it would be curious to try whether a Conifer could be inoculated here. In the spring a twig of Mistletoe can be grafted on a bough with occasional success.—Harold Russell.

—— Any time in the winter choose plump berries, and simply rub them on the bark of an Apple tree; the underside of a branch near the tree is best. The glutinous matter makes them adhere, and in a short time they will throw out little green claws, clinging to the bark. A small piece of wire net to protect them from the birds is the only thing necessary. I have grown it thus successfully.—S. M. M.

4103.—**Plants for Greenhouse.**—A lean-to greenhouse only 16 ft. long is far too high if it is 16 ft. that way also; 10 ft. would have been ample, made the house far more manageable, and better proportioned. You will do well to plant at the back of the house a strong climber like Clematis Jackmani, a Jasminum grandiflorum, or a Maréchal Niel Rose, or even all three should be planted to cover the wall at the back. That such climbers may thrive, they must have a border 15 in. wide, from whence the roots may run all under the floor of the house. Then your notion of having cork work fixed at either end of the house is very good, but some miniature rockwork of flints, pieces of granite, and burnt clinkers would be more enduring, and if in this were well intermixed some peat, earth, and loam, with leaf soil, many hardy Ferns and Mosses would do well. In such a lofty house there should be a stage for plants to lift them as near the light as possible, but if stood in the floor small plants will look very diminutive, and large plants will, perhaps, take up too much room. A small stove will, we fear, prove a poor protection in such weather as we have just experienced. A greenhouse if properly protected with fire-heat ought to be gay with Chinese Primroses, Cyclamens, Scarlet Geraniums, Camellias, a few Heaths, &c., and in it also Cinerarias, Calceolarias, Pelargoniums, Deutzias, Dielytras, and other useful plants to bloom later on. But all these things depend upon the heat given and suitable looking after.—A. D.

4095.—**Early Potatoes for Damp Soils**—We can advise you to plant nothing better or likely to be more profitable than the Early Ashleaf if you specially want to secure a quick crop. The Early Rose would no doubt give twice the bulk, but it is difficult to dispose of at a profitable price. You should get the Potatoes as soon as the hard weather is past and put them out thinly in light and air to sprout ready for planting in April. Soils that lie low and damp are far from being good for Potatoes; really they are the worst as a rule, yet yours may get plenty of sun in the summer and thus promote rapid growth. It is not a good plan to leave such soils lying flat all the winter; heavy rains beat down the surface and air is excluded. We cannot too strongly advise the immediate throwing the soil into sharp ridges 2 ft. in width; then early in April, if it be possible, lay long fresh stable manure along the furrows and fork it in; this will serve to keep the roots fairly dry and prevent the accumulation of moisture around them. After planting the sets in the furrows fork in the ridges lightly and leave till the haulm comes through.—A. D.

4106.—**Paraffin Oil as an Insecticide.**—Paraffin is certainly an efficacious insecticide, and we have been informed that it may be used for the tender growths of Roses at the rate of a glassful to a gallon of water. The greatest care must, however, be taken to keep the oil well mixed with the water when using it. We have never employed Castile soap, but should think that it would have about the same effect as soft soap, which is a cheap and powerful insecticide.—J. C.

4101.—**Amarantus caudatus.**—The plants in question had in all probability passed into a second season of growth, and the climate being favourable to them had attained a high degree of development. Love-lies-bleeding is an annual, but, like many of this tribe of plants, may by cultural care be converted into a biennial or even perennial. It is not probable that such good results would be attained in this country, but it would be worth while to keep a few young plants over in a warm house, and plant them out in rich soil in a sunny situation in June.—J. C.

4092.—**Christmas Roses from Seed.**—Gather the seed as soon as ripe and sow it immediately in the following manner: Well drain some pans or 6-in. pots and fill them to within ½ in. of the rim with well sanded leaf-mould and loam in equal proportions. Press the surface quite firm and water gently, but enough to moisten the whole body of soil. Allow the pots to stand an hour or two and then sow the seed, covering with ¼ in. of fine soil. Make the surface firm and smooth, water gently, and then plunge the pots up to the rims in a cold frame,

covering the soil with Moss, and placing a square of glass over each pot. Be very careful not to let the soil get dry, and do not take away the Moss until the young plants appear above ground.

1047.—**Lilacs in South Africa.**—All you have to do is to pot the plants in suitable soil when they are at rest, and keep them well watered. We see no reason why they should die after flowering if well attended to in the matter of watering; at the same time the Lilac requires good soil in which to make good flowering wood, and if you keep the plants in pots they must be well fed with liquid manure when growing.

4093.—**Covering Hot-water Pipes.**—In Yorkshire manufacturies it is customary to cover boilers and steam pipes passing from one building to another with a mixture of clay, horse manure, and shoddy or woollen waste, ground together to the proper consistency in a mortar mill. For a small quantity of piping, clay and fresh Cocoa-fibre will do equally well, and can be mixed together with a spade; as much fibre as possible must be used. When put on and sufficiently dry a coating of tar may be given, when it will last for years.—ALPHA.

4088.—**Culture of Humea elegans.**—Seeds of this plant should be sown in April or May, in a close frame. Keep the soil moist and the atmosphere cool, shading from sun until the young plants appear above ground, when they must be inured to a circulation of air. When large enough to handle, prick them out into pans of fine well sanded compost, consisting of two-thirds leaf-mould and one-third loam. Keep the soil moist, but avoid heavy waterings, and promote free growth by shutting up the frame early in the afternoon, sprinkling the plants overhead when so doing. I may here mention that the great point in the culture of this plant is to induce a free growth and maintain the same until it comes into flower. The Humea is naturally of free growth, delighting in a free rich soil and an atmosphere at all times considerably charged with moisture. The soil should never be allowed to become very dry, but heavy doses of water may not be given, or, as a result, we shall get brown and rusty instead of green healthy foliage, and although the graceful disposition of the flowers is a much admired feature in this plant, it certainly loses half its beauty when the leaves are in any way disfigured or have been checked in their development. Before the young plants can crowd each other, let them be potted off into small pots, still using a fine, free, and well sanded compost. Still keep them under glass, shading a little from hot sun, but admitting at all times plenty of air and drawing off the light altogether when the atmosphere is soft and balmy. As soon as the roots touch the sides of the pots, shift into 6-in. pots, this time using one-fourth of well-decayed manure in the soil. It is of great importance that the roots should not at any time become matted in the pot, as a root-bound plant comes into a stunted condition, from which it is at all times hard to move it again. The last shift will be into 8-in. pots, and by that time the plants will no more need the shelter of a glass roof, but may be placed in some sheltered situation in the open air, sprinkling them well twice a day in hot parching weather. By the middle of September they should be placed under cover, the best place for them being a light structure where the temperature does not fall much below 50° at night. A cool greenhouse will, however, do for them, but care must be taken to keep them free from chilling draughts and overcrowding. The following April shift them into 12-in. pots, give plenty of air during the spring months, and the beginning of June they may be placed in appropriate positions in the open air, or they may be employed to embellish the conservatory. During the summer they must be well fed with liquid manure or top-dressed.—J. C. B.

4109.—**Begonias for Bedding.**—I would say that unless the tubers are very small, such as would be obtained from cuttings of the previous year, they are better without artificial heat of any kind, which has always a tendency more or less to cause the tubers to decay. If carefully potted early in March and placed on the front shelf of a cool, lightsome house, they will soon start naturally into growth, and make stouter, hardier plants than those forced unnaturally into growth. Indeed, some bulbs, if they have gone to rest early, start again in February or even earlier in the following year.—W. E. G.

4110.—**Propagating Begonias.**—Tubers of Begonias may be safely cut into several pieces like a Potato, care being of course taken to have an eye or incipient shoot in each portion, and dusting the cut parts before planting with either lime or powdered charcoal, and letting them dry a little before putting into the earth. Cuttings should be taken off as early as possible in the season, if possible in May or June, as those put in later have hardly time to form tubers of any size for the following year's growth. I find the best method of striking them to be in pots of pure silver sand and water, packed as tight as possible.—W. E. G.

4129.—**Planting Potatoes.**—As regards the quantity of seed Potatoes to crop half an acre, it depends entirely on the sort you would like to grow. Last season I grew from 14 lb. of seed of Magnum Bonum 7 cwt. 29 lb. of Potatoes, with not a bad one in the whole lot. If you grow the same sort you will only require about 1½ cwt., as they require at least 3 ft. each way. You would not require much manure this season. I am informed that about one bushel of lime per rod or less is an excellent thing for the Potato.—C. B.

4131.—**Nicotiana longiflora.**—Sow the seed thinly, like other annuals, in a hot-bed. When growing freely transplant carefully into small pots, and eventually bring into the greenhouse to blossom. Keep moist, and do not expose to very hot sunshine. Soil light, with some peat. If kept over the winter, the plant flowers early next summer. It has but little fragrance, but it is well worth growing for its pure white flowers, and the treatment described has for many years proved successful.—M. W. MOLIM, *Stoke Newington.*

4098.—**Botanical Books for Children.**—I am glad to be able to recommend to "Miss V." a very simple book on gardening, viz., "Town and Window Gardening," by Catherine M. Buckton. It is published by Longmans, Green & Co.—CAROLUS F.

—— There is no better book than Youman's "First Book of Botany" (Kegan Paul), price 2s. 6d.; and for children from ten years old and upwards I should recommend Kitchenner's "Year of Botany," published by Rivington.—R. H.

4092.—**Christmas Roses from Seed.**—I sowed some seed in pots in the autumn, kept them in the house, and after two years they came up, and I think they were five years old before I planted them out. It is far better to divide a plant. Every little joint will grow and flower in quarter the time that seedlings will.—J. K.

4085.—**Onion Plant not Flowering.**—This plant does not flower well until the soil in the pots becomes thoroughly packed with roots. Do not shift your specimens, but expose them to all the sun and air possible during the summer months. The plant being of a succulent nature, it requires a large amount of heat, light, and air to mature the tissues.—C.

4149.—**Thinning Annuals.**—It is recommended to thin annuals. Why should they not be sown thinly? Does thick sowing induce the seeds to come up?—M. A. P. [Thin sowing is uncertain, inasmuch as some of the seeds may fail to germinate, or the young plants may be eaten by slugs. Whilst by sowing fairly thick a good crop of plants may generally be depended upon, and, moreover, the seed of most annuals is so cheap, and the process of thinning such little trouble, that there is no excuse for any one failing to be successful.

4150.—**Sooting Gooseberry Trees.**—*Clydeside.*—Sprinkling dry soot over Gooseberry trees is effectual to keeping birds from eating the buds.

4151.—**Frozen Plants.**—I have got a spare unheated greenhouse, and I was recommended to build a paper covering all over my plants, and did so. Yet the frost has sadly treated them. Still there is life in such as Petunias, Lobelias, &c. Shall I put them into a mild hotbed? or how could I save them?—J. M. [If you cut them back and place them in a hotbed they will doubtless throw plenty of cuttings, which will easily strike in a hot bed.]

4152.—**Index to Gardening.**—*Funnidos.*—You can have an index to Vol. I. of GARDENING post free for 1½d. from our office. The index to Vol. II. will be ready early in March.

4153.—**Window Plants for Children.**—*Orangman.*—The best three for exhibition would probably be Geranium, Fuchsia, and Musk, or you might give them seeds of Balsams, Mignonette, Lobelias, or some of the beautiful hardy annuals which are very cheap. Suppose you gave each child half a dozen small packets of seed, an equal number of pots and some soil.

4154.—**Binding Covers for "Gardening."**—Do you publish a cover for binding the yearly volume of GARDENING, and also the price?—ARTHUR. [Yes, price 1s. 6d. Order of your newsagent.

QUERIES

4155.—**Substitute for Pea Sticks.**—I have read the account of "Eboracensis's" substitute for pea sticks, but it is not quite plain to me, and as I think of trying it this summer, I write for further explanation. What are pegs and straining cords, and how are they fixed and used? What is tarred band? I used last summer some tarred string for my Peas which reached above the sticks, and it all slackened with the rain. "Eboracensis" says that this tarred band shrinks with the wet; is it so? as that would be a great benefit. Does "Eboracensis" mean that the standards are placed 7 ft. or 8 ft. apart? he says "the supports," and I am not quite certain whether he means by supports the same as the end standards of which an engraving is given. What size standards should I require for the very tallest growth of Peas?—F. C.

4156.—**Vegetables in Shaded Places.**—What vegetables can be successfully grown under Apple trees where little or no sun comes? The sun is over the trees nearly all the day, but not much direct. What varieties will succeed best? and any hints as to their cultivation would be welcome.—F. C.

4157.—**Potatoes for Clayey Soil.**—What Potatoes are the best for a wet, clayey, heavy, cold soil? I wish to grow a few for eating new as they are dug as early in the summer as possible, and one or two good keeping varieties for autumn and winter. What is the advantage of allowing the seed Potato to sprout well before planting? and should all the sprouts but three be broken off before planting? and what is the object of so doing?—F. C.

4158.—**Potatoes.**—Last year I grew a very heavy crop of Early Rose, as many as seventy Potatoes having formed on one root, of which twenty were very good size, some very large; but the blight having appeared in one or two roots it was thought advisable to dig the lot, and so not half of the yield that would otherwise have been was realised, because they were dug before they were properly matured. It was found in digging them that the blighted tubers were generally the largest and those deepest down, so that my gardener remarked, This has taught me a lesson; do not in future plant your seed so deep. These had been planted about 6 in. deep. Do you think it advisable not to plant so deep this time? Is there any truth in the gardener's remark? Again, I have noticed in many market gardens that the germs of Potatoes are very short and sparse? Is this owing to any mode of cultivation? I grew two sorts of Potato last year, which produced exceedingly tall haulms; one, Victoria, produced fine tubers, but the other sort, Champion, though the haulm was exceedingly high, 4 ft. or so, had hardly any produce. Is there any disadvantage in such heavy greens, or is there any mode of keeping them close down?—F. C.

4159.—**Turnip Beet.**—Is this variety of Beetroot as good for eating as the ordinary Beetroot? My ground is very stony, and so this shaped root would grow more favourably than the deep-rooting kinds. What is the best mode of culture and time to plant?—F. C.

4160.—**Lettuce.**—Nearly all my Lettuces last year ran to seed, although I kept them well watered? What is the cause and the remedy for this?—F. C.

4161.—**Onions.**—I sowed a bed of Onions very thickly to insure a good supply coming up, and hardly any came up. I think perhaps I may have planted them too deeply; would this be likely? and how should they be sown? I want a variety that will produce bulbs as near like the Spanish Onion as possible?—F. C.

4162.—**Hotbed for Raising Seeds.**—I want to know how to prepare a gentle hotbed for raising half-hardy annuals. I can procure manure from where a horse and pig are kept. How much will I require for a frame 6 ft. 6 in. square? Would the oldest manure or that which is fresh be the best? I want to have it ready by the end of February.—V. W.

4163.—**Celery for Stewing and Soups.**—I shall be glad if any reader would inform me of the name of the best Celery to grow for flavouring soups, and also of that best for stewing.—E. H.

4164.—**Aquatics in Tubs.**—I should be glad to know if in ordinary tubs kept in a warm greenhouse I should have any chance of successfully growing and blooming the red Water Lily (Nymphæa devoniana) and blue Water Lily (N. scutifolia). If full directions for growing these were given it would greatly oblige.—ERIN.

4165.—**Hardy Annuals.**—Will any reader kindly name twelve kinds of hardy annuals seeds of which could be sown in a cold frame, and give time of sowing?—W. E. B.

4166.—**Guano Water.**—What proportion of guano to water should be used for bedding plants and seeds?—W. E. B.

4167.—**Economical Greenhouse Heating.**—I am thinking of having a lean-to greenhouse built, 24 ft. long by 10 ft. wide, and propose for heating purposes to have a furnace with a flue running through the back of the house, a saddle boiler over the fire, to which is connected a 4-in. flow and return pipe running in front of the house. My reasons for this plan is as follows: By having a flue at the back of the house I get all the heat engendered by the fire, the boiler being the crown of the fire. I get hot water heat in front. By having the ordinary furnace instead of an iron stove &c., I can utilise all the fire refuse of the dwelling house, and not require much added fuel, such as coke, &c. The iron stove boilers will not burn this refuse. Can any one see any objections to my plan?—G. J. WILLIAMS.

4168.—**Water Plants.**—I have a bell-shaped aquarium, 21 in. in diameter, and 18 in. deep, in which I grow Vallisneria and keep minnows and gold fish. I sank a pot with a Palm in it last summer, which did well for a time, but now the leaves and stems have turned brown. Will it thrive in the spring? I tried an Arum Lily, but as the aquarium stands 2 yards from the window, it grew straggling and did not flower. I should be glad to know where I could procure the water plants mentioned in an article in GARDENING, Jan. 22? Also I have a tank in garden 4 yards square and 5 ft. deep, but round the sides is a stone ledge only 1 ft. under water. Would any of

the plants mentioned do well and flower if sunk in pots on the stone ledge?—S. M. M. [You can get the water plants mentioned in the article you allude to at any of the large London nurseries. Palms are not fit subjects for aquariums in winter; we would advise you to take your plant out; it may revive in spring. Hardy water plants would do well on the stone ledge of the tank you mentioned.]

4169.—**Wood-ashes and Manure for Lawns.**—I read in GARDENING that a mixture of wood-ashes and soot is a good manure for lawns. Will any one tell me where in London I can get wood-ashes? Is there any artificial manure without much smell, which would serve as an effective manure for lawns?—T. G. W.

4170.—**Watertight Boots.**—Can any of your readers give me a receipt of a preparation which will keep the water out of boots and shoes?—M. A. P.

4171.—**Plant Stands for Rooms.**—I shall be glad if any reader will suggest the best form of stand for plants in a sitting-room window. I may say I have always had a dislike to wire plant stands. My own idea is a narrow table corresponding in length to the width of the window, but with sides and ends to the top, forming a sort of box, the box to be lined with zinc. In this plant pots could be plunged, and surrounded with damp Cocoa fibre, with a covering of green Moss to give a more pleasing appearance. To my mind this would obviate many of the difficulties experienced in window gardening, as the pots would not then be exposed to such rapidly drying influences. As I have never seen or heard of a stand of this character, I should be glad to hear on the subject from any one who can give information, and also whether anything of the kind is made for sale.—ALPHA.

4172.—**Close *v.* Open Glazing Greenhouses.**—Has any one ever tried the difference between close laps in glazing greenhouse roofs and the plan of raising the upper pane so as not to lie close on the under one? This I was advised to do by a nurseryman; its chief benefit is allowing condensed moisture, &c., to escape, so that I have no drip, but I fear I lose much heat in winter, as I observe Tobacco smoke used in fumigating comes out at every pane. I suspect close laps would give me 10° more heat if necessary.—PAT.

4173.—**Polyanthus Narcissus Failing.**—I purchased some bulbs at an auction sale in November, 1878, of the above kind. I planted them immediately, and in April following they flowered well, carrying from five to seven flowers on a stem. When the foliage decayed I took them up and preserved them carefully in paper bags until November following, when I again planted them in the same border, which consists of a dark or Buttercup growing loam with a little leaf-mould added, expecting to see them flourish and flower as before, but to my disappointment they refused to grow. After waiting until the time they flowered the year before I took them up, and found the bulbs quite firm and good, having made roots downwards. I planted one of them in a small pot, and placed it in a window, which is now growing nicely, having filled the pot with roots, and the foliage is 3 in. high. The remainder I planted as before, but a little sooner, and upon examining one of them a short time since I found was near coming up. Will any one inform me if it is common for the bulbs to miss flowering? and also their proper treatment as regards position, time and depth of planting, suitable soil, &c.?—HOPEFUL ONE.

4174.—**The White Squill** (Scilla alba).—I want about 100 bulbs of this. I have enquired for it from several large nurseries without success. Unfortunately, many of our old-fashioned common flowers are now so neglected. I wish to plant it round a font for Easter decoration; also I wish to ask if any one can recommend any other flower tor the purpose?—LOVER OF FLOWERS.

4175.—**Moss on Garden Vases.**—Does it injure vases if Moss is allowed to grow on them? if so, how can it be removed?—OUNDLE.

4176.—**Snails on Ferns.**—We have some fine Maidenhairs, but nearly all the plants are infested with tiny snails in shells. What is the best way of destroying them?—E. S. S.

4177.—**Repairing Boiler.**—Will some reader tell me the best way of repairing a coil boiler made of 1-in. piping which has burst, leaving a small opening about ½ in. by ¼ in. where it is exposed to the fire?—LANCASHIRE.

4178.—**Hyacinths and Tulips for Exhibition.**—Will any one tell me when to place Hyacinths and Tulips in a temperature of about 55° for exhibition late in March? They were potted early in November.—J. B.

4179.—**Propagating Tree Carnations.**—When young plants struck this season have grown 9 in. or 10 in. high can the tops be taken off for cutting again without injury to the plant.—CANTAB.

4180.—**Worm Casts on Bowling Greens.**—Some firms in the north of England advertise what they term "their specially prepared ground charcoal" as an infallible remedy for clearing bowling greens of worms. Will any reader inform me what effect charcoal has upon the worms? and whether it is animal or vegetable charcoal that it used?—HOPE'S FRIEND.

4181.—**Plants for Windows in Summer.**—I have a window facing the east in Regent's Park which I wish to have some flowers in. I have two boxes to fit window ledge, one filled with Crocuses and Snowdrops, and the other with Hyacinths and Tulips. Will some one tell me what to grow after, so as to get the best show with moderate expense?—FUNNIDOS.

4182.—**Cleaning a Paraffin Cask.**—Will some one kindly say how a cask which was recently filled with paraffin can be speedily and thoroughly cleansed, so that the rain-water which it is intended to contain may be safely used for household purposes?—G. G. P.

4183.—**Liquid Manure.**—Will the liquor drained from a pig-sty when diluted do as manure water for greenhouse plants?—AMATEUR.

4184.—**Potatoes for Seed.**—Last spring I planted some Potatoes on heavy, damp ground, just dug and manured as they were planted. They are not fit to be eaten, as they taste strong of manure, and are watery Will they do for seed? I have had the ground manured and ridged.—J. S.

4185.—**Grafting Camellias.**—I am about to graft a few Camellias. Will any one tell me what would be the best stocks, and how long they have to be potted before grafting, and a few hints as to bring them on afterwards?—C. SAUNDERS.

4186.—**Earwigs.**—Will any reader kindly tell me how I can get rid of earwigs in my garden and house? The house has only been built six years, and has but a few small creepers on it. Still, during last summer, every room was infested by these insects, and every flower, and especially every Rose I gathered, was certain to contain two or three earwigs.—E. E. N.

4187.—**Petroleum Cask for Liquid Manure.**—I have an empty forty-gallon petroleum cask which I purpose using this season to hold liquid manure for a newly planted bed of Liliums. Will some one tell me if the lamp oil which must have soaked into the wood will have any injurious effects on the Lilies, some of which are rare and valuable kinds?—SAXON.

Small Vases for Flowers.—Charming arrangements of flowers can be made at this season with but few blooms, and those not of expensive varieties. A few days since I arranged two little vases, or rather specimen glasses, with the following: In each I placed a sihgle bloom of a double variety of white Azalea, some sprays of Deutzia gracilis, and three white Cyclamens, the whole being backed by a frond of Pteris tremula; two smaller fronds of this Fern were also placed in front, and bent down so as to group gracefully. These little vases were arranged to match, and were for placing on a side table in the drawing-room. Many pretty floral groups can be effected with but few flowers if a little time and taste be employed in their arrangement. The Dielytra is a flower now coming into the market, and is well adopted for the decoration of both large and small vases, as sprays can be obtained and cut off this plant of almost any size. This flower hos the advantage, too, of being equally effective by either day or artificial light. As a hardy plant the Pyracantha is very useful for cut purposes; a spray of it when placed amongst white oowers, such as Lily of the Valloy, Deutzias, &c., with the additien of a little Fern, being extremely effective.—A. H.

BEES.

Keeping Bees.—Many of the readers of GARDENING ILLUSTRATED will have heard or read of the poor clergyman that could not make both ends meet who applied to his bishop for assistance, who, after hearing his case, advised him to go home and keep bees. Whether he did so we know not; it is very certain he might have had worse advice. We hope that none of our readers are in this condition; but, be this as it may, we will, for other reasons than that of making both ends meet, advise all that can do so to take the good bishop's advice and keep bees. It will be a benefit to the nation and our neighbours, and pleasure and profit to ourselves. Bees, in addition to the honey they gather, greatly assist us in fertilising all kinds of fruit by going among the blossoms for honey and bee bread; therefore, more bees, more honey and more fruit of all kinds. What we as a nation pay for imported fruit may not be known, but it is known that we pay to other nations over £40,000 yearly for honey alone. A great part of this large sum might be kept at home by keeping more bees to bring in the ungathered honey from the fruit trees and flowers of the garden and field. People that dwell in the country or on the outskirts of the towns are in the best positions for the employment. A garden, yard, or field is needful to place them in. Some not having the one or the other hire for a small sum a garden or yard of those that will let them for the purpose. We are writing not for those who keep bees, but for those that do not, that they may be induced to do so, for if they care either for profit or pleasure, they will not find anything that will give it at so small a cost. In another paper I propose to advise how to commence bee keeping.—H. P.

Bees in Windy Weather.—The fanciful idea that bees carry little stones on their legs in windy weather doubtless arose from Virgil noticing the little yellowish lumps of pollen on the hind legs of the workers as they return to the hive. This pollen is the dust collected from the anthers of flowers and packed on the hind legs, which in worker bees are hollowed to receive it, and is the flesh-forming food of bees, while honey is the heat-giving.—A BERKSHIRE BEE-KEEPER.

POULTRY.

Care of Poultry.—The American *Poultry Yard* says:—We must now keep closed the doors and windows of our fowl houses to guard the occupants against the sharp air by day, and the chillier atmosphere at night. But let us be sufficiently careful to perform this operation sensibly, and not to stifle the birds that the emanations from their bodies will infect the internal atmosphere of the premises, and thus poison or sicken the stock. Ventilate the premises thoroughly every day and every night in the year. No matter how hot, how cold, how dry, the fresh air of heaven must be afforded your fowls, either by allowing them freedom out-of-doors altogether, or by supplying their quarters with this necessity to their comfort and thrift.

Pullets Losing the Use of their Legs.—I have recently found some of my pullets lying on their breasts and sides, and although they eat as usual, and appear otherwise healthy, yet they are unable to stand upon their legs; they are attacked in this manner in one night. I feed them regularly twice a day, and they have abundance of green leaves, &c., but have not much run, only about 12 ft. by 3 ft. Can any reader tell me the cause of these attacks, and what I can do to cure the bird? One of my best is now quit unable to stand.—TEACHABLE.

Fowls with Swollen Eyes.—I cured all my fowls of this disease the last twelve months with iodine. Apply carefully by jirking the bottle on the cork, and paint the swelling all over with the cork, so that none runs into the eye. Perhaps if applied with a camel's-hair pencil it might do so. Give the hen a Plummer's pill, and put her in a hamper all night, and the next day in the kitchen to keep her warm. Iodine the swelling four or five days, and then every alternate day until well, but do not let the eyes get sore, or the other hens would peck them. Before I tried this method all my fowls died, as the disease goes to the brain.—AMELIA SMITH.

Brahma Fowls in Small Spaces.—Will some reader be good enough to tell me how many Brahma fowls I can keep healthfully in the under-mentioned space: Hen-house, 5 ft. by 3 ft., and 3 ft. high; grass run 30 ft. by 6 ft. Also, is dry sawdust a good thing for fowls to have in hen-houses?—LEHO.

Scales on Fowls' Legs.—Can any reader inform me of the cause of a number of my hens having scales on their legs? also the cure, if any? and whether it is infectious?—POULTRYMAN.

Best Fowls to Keep.—I am thinking of keeping fowls; what are the best sort to keep? I want them good layers, and at the same time their appearance satisfactory. What do you think of Black Spanish and Brahmas?—F. C. W. K. [You do not say whether you want them for a confined space, or whether you have a grass run for them.]

Poultry Breeding for Profit.—As I am about starting poultry breeding as a means of profit, and by incubation, I should be very thankful for information as to class of birds for crossing to produce, size, quality, hardiness, and layers of a plentiful supply of large eggs, and if now would be a suitable time for commencing?—A CONSTANT SUBSCRIBER.

THE HOUSEHOLD.

How to Cook Haricot Beans.—If "Ferndale" will substitute the following for hi recipe on p. 542, I think it will be found to be a great improvement, and give to this dish an increased value amongst those who like a change from our ordinary vegetables. Well wash the beans, soak them twelve hours, put them in a stewpan, cover with cold water, and put them on the fire; when they boil up, put in a lump of salt and draw them to the side of the fire, where they must simmer (only) until the skins crack; strain off the water immediately, and cover up closely; have ready one or two onions (according to taste) finely shredded and fried in oil, butter, or good dripping to a nice straw colour; take off the lid of the stewpan, put in the fried onions with a little more butter, shake until mixed well, put into a dish and serve hot, previously sprinkling over a little fine-chopped Parsley.—EDMONTONIENSIS.

Tomatoes (Stewed).—Get a tin of American Tomatoes (cost 7d. or 8d.), cut off the top of the tin, put in a sufficient quantity of bread crumbs to absorb all the juice, and stand the tin in a saucepan of boiling water over the fire until the whole of the fruit is heated through; stir in 2 oz. of butter and serve. (N. B.—Mind the water does not boil over into the tin, and keep the lid of the saucepan off; condensed steam does not then drop into the fruit.—M.

Tomatoes *(au gratin).*—When the Tomatoes have been prepared according to the last recipe and are ready for dishing up, turn them out into any convenient dish, sift them over with bread crumbs, put into a Dutch oven before the fire until nicely browned, then serve.—EMONTONIENSIS

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BOUVARDIAS.

FEW plants are more easily grown, or more amply reward the care of the cultivator by the production of abundance of flowers than the Bouvardias, yet it is only with a limited number of growers that they are brought to perfection; and while those who are fortunate in this respect can bring them into flower during any month in the year, or have them in succession all the year round, the majority of those who attempt their culture fail not because they cannot grow them, but generally because they take too much pains with them in the wrong direction, such as keeping them in pots throughout the summer, and nursing them up under glass, whereby they are induced to make weak wiry wood and hard dry leaves, generally infested with insects. The chief point in the culture of Bouvardias, or, indeed, in that of any other class of plants, is to induce them to make strong, clean growth, and flowers will follow as a matter of course. Bouvardias should be treated according to the time at which they are required to flower, but they are most useful when in bloom in winter, a season when market growers contrive to have a large quantity of them in bloom. Bouvardias are popular plants in our flower markets, either the plants themselves or their blooms being offered for sale during the greater part of the year. For bouquet making the white-flowered kinds are especially useful; indeed, seldom is a bouquet made which does not contain some Bouvardia blossoms. The old B. jasminiflora still remains one of the best kinds for market purposes. Its dwarf, compact habit of growth, and its floriferous qualities, together with its easy culture, render it a favourite with everyone. One grower alone near London yearly disposes of from 20,000 to 30,000 plants of it; others grow it more for its blooms, and in that case it is grown in larger pots. The only scarlet-flowered kind grown to any extent is B. Hogarthi, which in habit resembles B. jasminiflora; it produces abundance of bright blossoms which are very effective amongst white flowers. For spring-flowering, a large white-flowered kind named B. jasminiflora corymbiflora (the large flower at the top of the above illustration) is grown to some extent. Its flowers are deliciously fragrant and much larger than those of any other kind in cultivation. Its chief value, however, is its blossoms in a cut state, for the plant is too rampant a grower ever to become a good market plant; only bushy little plants in 6-in. pots laden with blooms find favour in Covent Garden. Messrs. Beckwith & Sons, of Tottenham, however, have lately shown us some wonderful examples of this Bouvardia in 5-in. pots; they were indeed such as any cultivator might feel proud of. The difference in the plants of Bouvardias as seen in Covent Garden and those met with in private gardens is very marked. Country growers, as a rule, use the knife too sparingly in the case of Bouvardias, and, therefore, instead of dwarf bushy specimens clothed with healthy green foliage down to the rims of the pots, as seen in the market, we find long, spindly plants with miserable-looking, shrivelled-up leaves, and a few solitary sprays of flowers. We do not mean to say that all grow such miserable plants, but, as a rule, few good ones can be found in private gardens. The largest cultivators of Bouvardias in pots grow them as follows: In autumn old plants which have done flowering are cut down, nearly close to the pot, and placed in a moderately cool, dry temperature. After Christmas a little more heat is given them, and they are frequently syringed overhead; this has the effect of starting into growth a number of shoots from the bases of the plants. These, when sufficiently

GROUP OF BOUVARDIAS.

firm, are taken off, made into cuttings, inserted singly in 3-in. pots, and plunged in Cocoa-nut fibre on a gentle bottom-heat. These cuttings, under favourable circumstances, soon strike root, when they are potted in 5-in. and 6-in. pots in good fibrous loam and leaf-mould or rotten manure. As they advance in growth they are subjected to a cooler and more airy temperature than that in which they were struck, and when well established all the light, air, and sunshine possible are admitted to them, and they receive copious supplies of water at their roots. From these plants cuttings are taken with which to form a successional batch of plants; they are taken off when the plants have made three or four leaves, the two lower joints only being left on the plants. From these joints strong shoots are soon emitted; these when 4 in. or 5 in. long are also stopped, and this operation is carried on in the same manner for four or five times, each set of cuttings being treated in the same way. Those struck first in the year make excellent bushy flowering plants by the following autumn, and the last taken off, which is in August and September, make good plants to bloom in the succeeding spring. The old plants, from which the cuttings were first taken, are also shaken out and potted, and they make bushy, well-flowered plants early in the summer. In order to make large specimens, which, however, is seldom done in market gardens (except for supplying cut blooms), old plants are cut back year after year and shaken out and re-potted. During summer Bouvardias are grown in cool houses or pits, and sometimes in temporary frames, but in autumn, winter, and spring a moist, airy temperature of from 50° to 55° is maintained, excepting in severe weather, when a little lower temperature does not injure them. During late years some growers plant out their Bouvardias in the open air in summer, a plan by which good plants may be obtained with less labour and expense than in the case of those grown in pots. It, however, becomes a question whether they are so valuable to the buyer as well-established pot plants, but that, with growers for market, stands for nothing. For planting out cuttings are inserted early in February, stopped in the same way as before mentioned, and, after being duly hardened off, are planted out about 2 ft. apart in well-prepared ground the first week in June. During summer they are kept well supplied with manure water, the surface soil is kept well stirred with the hoe, and sometimes a mulching of manure is applied. In the first week of September, when the shoots show bloom, the plants are carefully lifted and potted, and, after being well watered overhead and at the roots, are placed in cold frames, and kept close and shaded until re-established; after that they are again exposed to air and sunshine, and when the weather gets cold they are placed in houses or warm pits near the glass. By this means strong, bushy, well-flowered specimens are obtained during the winter months which need no staking or support in any way. Indeed, under no circumstances do market growers stake Bouvardias, beyond placing a neat deal stick in the centre of each plant, so as to support the branches in a manner to form neat, but by no means formal, conical or pyramidal-shaped plants.

If Bouvardias are required for blooming in summer, a portion of the plants potted in the winter should be shifted into a size larger pot in the spring and kept growing. Although Bouvardias may be grown to perfection in an intermediate house, some of them, such as B. longiflora, B. jasminiflora, and B. Humboldti corymbiflora, will even stand stove temperature and flower beautifully; but where much heat is given care should be taken to ventilate freely. To Messrs. E. G. Henderson & Son, from whose establishment were obtained the flowering sprays from which our engraving was prepared, belongs the honour of having raised or introduced the greater part of the best Bouvardias in cultivation, and from these has been made the following selection, viz., B. Vreelandi or Davisoni, white; B. Hogarth, scarlet; B. elegans, bright scarlet; and B. Maidens' Blush, pale rose. These four belong to the same section, and are the very best for outdoor summer culture. B. Queen of Roses, rosy-pink; B. longiflora flammea, pale vermilion; and B. candidissima, snow-white, belong to an intermediate section, and form beautiful compact plants for winter blooming when grown in the open garden in summer. To these may be added B. Humboldti corymbiflora, white; B. jasminoides, white; B. umbellata carnea, white changing to blush; and B. flavescens, pale yellow. Occasional sprinklings with weak Tobacco water in the evening are the best means of keeping Bouvardias free from insects.

Arrangement for Flower-stands in Spring.—It is surprising how pretty we may have our windows and flower-stands in the early spring time, when there is such a scarcity of everything except bulbous plants; still, with even these they may look as gay as in the widst of summer by a little judicious management and arrangement of colour. Presuming we have a small stock of evergreens, such as Palms, hardy Ferns, miniature shrubs, Mosses, &c., to intersperse amongst the flowers, we can form a very pretty window or stand in tiers of different bulbs, putting the largest shrubs and Palms with the tall growing plants in the bottom, and the second tier might be composed of coloured Tulips in variety, and the two upper ones would look well filled with smaller Ferns and Mosses, with several pots of purple, yellow, and white Crocuses in between. Of course, I am omitting the more tender plants from the above arrangement, as the Chinese Primulas, Cyclamens, Cytisus, and many others; these may be substituted for the others, and the stands made even prettier and lighter looking, but these flowers do not bear the dust and close atmosphere of rooms as well as the hardy bulbs.—W. A. G.

Preserving Blooms of Chinese Primulas.—I think I have found out a secret for keeping cut blooms of Chinese Primulas in a good state of preservation in water. Having always proved that these flowers faded and drooped at once when cut, I gathered some blooms of the red and pink varieties, and placed them in fresh water in a room without a fire. This was about three weeks ago, and only yesterday (January 12) did I empty my vase of flowers. During that time they kept beautifully fresh, and looked as gay and bright as possible. Some of your readers will, I am sure, like to know this fact, and as the Primula is a flower well worth cutting for house decoration, we need not be afraid of seeing our blooms drop off in a few hours (as they most assuredly will do if placed in a warm, close temperature) by trying this simple plan, which is not as new to others as it is to me.—W. A. G.

Acacia lophantha.—This is a plant of singularly graceful habit and outline, and one that is particularly well adapted for windows, as there it shows off its elegant foliage to the greatest advantage. Not only is it good for either of these purposes, but it forms an admirable relief to the flatness and general uniformity of others on a stage when set so as to show clear above them; and half-a-dozen used in this way do much to give a finished look to any house in which they may be used. By sowing annually in spring, plants of this Acacia may be had with straight, single stems furnished with leaves down to the pot, and when in this condition they are exceedingly ornamental. The seeds, being somewhat hard, are rather slow in germinating, but in this they may be hastened by soaking them for twelve hours or so in warm water, after which they should be sown in sandy soil and placed in a Cucumber frame or warm greenhouse. A rich, light loam suits them best to grow in, and 6-in. pots are quite large enough for the first season, but if extra-sized plants are required they may be had by liberal shifts and feeding them well with manure water.

Camellias and Orchids.—These are well cultivated in the same house in a garden we lately visited near London. The Camellias occupy a back border of a narrow lean-to house, and are tied and pruned in, so as to form a sloping bank of glossy leaves and blossoms from the floor to the roof. The Orchids, which consist of Odontoglossums, Oncidiums, Cypripediums, Lycastes, &c., are grown in pots arranged on a narrow, gravel-covered stage along the front of the house next the glass, whilst from the roof are suspended noble plants of the snowy white-flowered Cœlogyne cristata growing in large, raft-like teak-wood baskets. Of Odontoglossum Alexandræ and O. Pescatorei and Lycaste Skinneri there is also a good display.

VEGETABLES.

HOW TO GROW PARSNIPS.

Parsnips do best in a deep, loose, not over rich, or at least not recently manured, soil. If manure be used at all, it should either be buried deeply, or be of such a nature that it will easily blend and mix with the soil. I have never found any disadvantage to arise from the moderate use of artificial manures, or soot, lime, salt, or any other substance of a similar nature whose tendency it is to become quickly absorbed and distributed in the land; always, of course, supposing the land required such aids, and that is a question which must be left to individual judgment. Parsnips in garden culture are a good successional crop to autumn Cauliflowers or Broccoli, or, indeed, any crop that can be cleared off before Christmas to give time for the thorough preparation of the land. This is a matter of the greatest importance for root crops.

A soil that has been deeply worked and freely exposed to the fertilising and enriching influence of the atmosphere is immeasurably superior for all root crops to ground that has lain dormant and sealed up through the winter, but it should not be worked when the surface is wet, as land, especially if of an adhesive nature, if trampled when wet takes a long time to recover its natural tone, such as the roots of plants delight to spread in. From the middle of February to the middle of March—according to season and locality—is the most suitable time to sow Parsnips, selecting a time when the soil is in good working order, for to put seeds of this kind into the land in wet weather is usually the prelude to an indifferent crop. Sow in drills 1 in. deep and 15 in. apart, and thin out the young plants to from 6 in. to 9 in. apart in the rows. The more space the plants are given, the larger the roots will grow; but large roots, except for some special purpose, are not always the best for the table; nor will they in all cases give the best result in bulk of crop according to the area of land occupied. The most useful crop is composed of regular, medium-sized roots, and these are more likely to be secured by thinning moderately. As soon as the young plants appear, run the Dutch hoe through the spaces between the rows to break up the crust; and in a few days draw a small-bladed hoe through the drills, leaving the plants in small patches 6 in. or so apart. In another week or ten days they may be singled, drawing out all weak plants.

This is a better plan than singling out at the same time the hoeing is done, as removing at one operation all the shelter which near association with each other has given them sometimes checks and retards those that remain, especially if the weather be cold. Frequent stirrings of the surface soil until it is covered with the growth of the plants will be exceedingly beneficial, and cannot be overdone. The frost in our climate is not severe enough to injure Parsnips, and it is a common practice to leave them in the ground till after Christmas; but they keep equally well if taken up in November and pitted as Carrots, Beets, &c., commonly are, and it gives an opportunity for getting the land prepared for the next crop in good time. I do not know how it is, but Parsnips have never received the attention they deserve, either as a garden or field crop. They are very nutritious—more so, I think, than either Carrots or Turnips; they certainly occupy the land rather longer than the latter, but that is scarcely a disadvantage, and could easily be managed in arranging the rotations. I certainly think they would pay the small occupier who kept cows, for stock of all kinds (including poultry) eat them readily; and they do not, when given to milch cows, impart that disagreeable taste to the butter that Turnips do. They are much less subject to insects or diseases than most other crops, and seldom or never fail in producing a good crop on well-prepared land. Four pounds of seed will be sufficient for an acre, and, if labour were scarce and dear, by having the drills a few inches further apart, most of the surface stirring and cleaning of the land could be done with the horse hoe; and in field culture they come in well in place of Potatoes or Carrots for a change. H.

Indian Corn.—I observe in Gardening Illustrated a remark about Indian Corn grown in the garden. I have seen it grown, and grown it myself for the last forty years. To do so, successfully, however, it is necessary to get the right sort. For many years I had lost this, and by mere accident saw an advertisement in a newspaper stating where the true seed was to be found, and recovered it—"Cobbetts's Indian Corn." It is of very short growth, and I suppose it is thoroughly acclimatised, as with this seed I never fail, and now take care to keep plenty in reserve. Having been brought up by old Indians, I learned to delight in the fresh corn "cobs." The seed should be sown in the beginning of May, in the open ground, on highly manured ridges. A quantity should also be sown in a box under glass, so that there may be a supply from which to prick out plants to fill up vacancies in the rows. The plants, when they begin to grow vigorously, should be slightly earthed up, and when coming into flower should be in some way supported by strings or stakes. As soon as the female trusses appear to be fecundated, and turn slightly brown, I cut off the flower. I never trust anyone to gather the "cobs," as there is a critical moment when they are fit for the cook, and a day or two too soon or too late is fatal. To send them up to table, boil them in milk for an hour; then "broil" them, basting with cold butter and lots of pepper. Be regardless of appearances, kneading them between the fingers, and a more delicious dish is never put upon the breakfast table. —Frederic Fane.

Vegetables in Succession.—In keeping up a regular supply of vegetables there are two matters especially important; the first is to sow or plant the right kinds at the proper seasons for succession, and the second is to sow or plant just the right quantities. For instance, in the case of Cauliflowers, Lettuce, or any other crop that is apt to bolt prematurely, or, at any rate, is much influenced by the seasons, sowing little and often should be the rule, at the same time taking advantage of the various aspects of the garden to suit the different crops to the varying seasons. There is no doubt that the majority of kitchen gardens are too much shaded and sheltered by fruit trees. The best vegetables are invariably produced in the large open spaces where the air can freely circulate amongst them. A warm sunny spot under a south wall is a very desirable place for early crops, but the wants in this way are small in comparison with the requirements of the whole year. In a maggot-fested garden there should be no main crop of Carrots, but, instead, a regular succession of sowing monthly from the forced crops under glass in January till the last sowing of Early Nantes to stand the winter in the border in the first week in August, and which can be sheltered in very severe weather with a sprinkling of dry, loose litter. Good sweet young Carrots can be had all the year round in this way without taking up more land or costing more than if the main-crop sowing had been relied on for a good part of the year's supply; and even where a clean crop free from maggots can be grown, the old roots lose flavour before the young forced crop comes in, and the plan of sowing small successional crops will be found more satisfactory. In a less degree the same remarks apply to Onions. Where the maggots are troublesome the autumn-sown crops generally escape their attacks, and this fact should lead us, if we have any doubt of our soil, to sow at least a good half of the year's supply at that season. A rough plan of the kitchen garden is a great advantage in working out the season's work; it should be drawn to scale, and the crops now occupying the ground marked on it. The more a subject is thought over the easier and simpler it becomes, and if a thing is often present in the mind fresh lights are constantly breaking in upon us, and I suppose no one is so perfect in anything as to escape the necessity for wishing or trying to improve.—H. R.

Savoys.—Where bulk rather than quality is the object sought, sow Drumhead early in March, and plant out in June in drills, 2 ft. apart and 20 in. in the rows. But for garden culture, where delicacy of flavour is appreciated, plant the smaller kinds, such as the Dwarf Ulm, Marcellan, and King Koffee. The latter is a delicious vegetable, very tender, and less coarse in texture than the larger kinds; although small, it may be planted so much closer together, that after all it will be found to be a profitable crop. Sow in March, April, or May, according to the time the crop may be required; and it is a really good plan to sow a few seeds in each month, and put out a few plants at intervals in any convenient spot from May to August. Planted in rows 1 ft. apart and 9 in. in the rows will be ample space between.

Winter Salad Plants.—Witloof is highly appreciated with me for salad. We took the roots up in October, and they were treated the same as Carrots. When put into the Mushroom house the tops soon blanch, and when mixed with Endive make a good salad; nor are they to be despised when cooked like Seakale and used as a vegetable. The Improved Round-leaved Endive has proved the best with us; blanched out-of-doors under small Seakale pots, or placed in boxes in the Mushroom house for a few days, a good salad may in this way be had by all, even where glass is limited.—J. A.

PASSION-FLOWERS.

These, on account of their singular beauty and the associations connected with them, are popular plants with most people. Passiflora cœrulea, the hardiest and best known, is a pretty variety which grows and flowers freely on open walls, and in favourable situations ripens its fruit. It does well between the gables of two lean-to glass houses, for example, or on the sheltered end of a cottage with a fire behind it. It likes a moderately light, rich, loamy soil, and if the roots be enclosed on all sides with slates or flags, and not allowed to get down too deeply, they will be much more favourably situated as regards temperature, watering, and general culture than

Spray of the Hardy Passion Flower (Passiflora cœrulea)

they otherwise would be. How to train it is a consideration, and the simplest plan is the best. It is a mistake to nail the shoots up or across the wall, as is usually done. If the wall be not very high, lead the main limb up to the top direct at the beginning, and then along the top just under the coping. Most likely it will throw out side shoots as it grows; but if not in sufficient number, occasional pinching will make it break more freely. The shoots should simply be allowed to hang down on the face of the wall without tying of any kind, and a very graceful drapery they will make, either with or without flowers, but flowers are sure to be produced in quantity. The extension system of training is the best in the case of Passion-flowers. We have seen a lofty-fronted glass structure, 70 ft. long, draped from end to end with them in the manner just described, the shoots being allowed to fall 9 in. apart. Two plants furnished the whole, one being planted out at each end.

The culture of greenhouse varieties is pretty much the same as for the hardier kinds. In all cases it is well to confine the roots in a stone box, from 2 ft. to 4 ft. wide, according to the area which the plant has to cover. If practicable, train also in the same way. Take the shoots along the roof in a methodical manner, but let their extremities hang down here and there in order to bring their flowers within reach, and to give the plant a natural aspect. If the roots be well drained, water freely and

otten, as they soon fill a large box, and get as matted as in a flower pot. Top-dress, too, annually or periodically with rich soil, and additional root-room will never be required. I once had a plant of P. edulis which bore a heavy crop annually for many years, the roots all the while being confined to a box 20 in. square. During the growing season the knife must be used freely in order to remove entirely the shoots where they are too crowded; and when the plant ceases to grow and flower as winter approaches, it should be pruned well back to the old wood.

Stove varieties, such as P. Buonapartia and quadrangularis, may be treated the same as the greenhouse sorts when grown for the sake of their flowers, but if fruit be the object, more careful and slightly altered treatment is necessary. P. quadrangularis and P. edulis are the two kinds that are most esteemed for their fruit. The first is the large and now pretty well-known Granadilla, and the second has fruit about the size of a pigeon's egg, purplish coloured and the more ornamental of the two, but both form an agreeable addition to the dessert. I have had fifty or more half-pound fruits on a plant of the Granadilla which was struck from a cutting the previous autumn. Cuttings of the young points should be struck in summer or autumn, and early in February they should be planted out in a 20-in. pot or tub, in a good compost of loam, leaf-mould, and manure, and plunged permanently in a bottom-heat of 85° or 90°. As the shoots grow rapidly, they must be prevented from becoming entangled, and be trained within 1 ft. of the glass, and never stopped on any account. If they get

Spray of the Water Lemon (Passiflora laurifolia.)

crowded, remove some of the shoots entirely, but allow those left to grow on uninterruptedly. About midsummer flowers will be produced towards the extremities of the shoots, and they will continue to appear afterwards at almost every joint; as they expand daily, they must be fertilised with a camel's-hair brush, or they will not set. Maintain a moist and high temperature throughout the growing season; 75° by night and 90° with sun-heat will suit them well. When the fruit begins to change colour, diminish the moisture a little, but at all times keep all the supply at the root, for the abundant foliage makes a great demand upon the roots, and if water be not supplied in abundance the fruit will drop, especially in the early stages of its development. About November, when it is all gathered, prune the shoots hard back, and keep the plants still, but moist at the root, all the winter.

Almost all the varieties are subject to red spider and mealy bug; but generous culture and a vigorous application of the syringe will generally keep both these pests in subjection. The best stove kinds are P. amabilis, Beloti, kermesina, edulis, princeps, quadrangularis, and Buonapartia; the greenhouse sorts consist of Innesi, Impératrice Eugénie, racemosa, cœrulea, and Campbelli. P. laurifolia, which we now figure, bears sweet-scented red and violet flowers. The fruit, which is yellow, is lemon-shaped, and about the size of a hen's egg. It is sometimes called the Water Lemon. S.

Early Forget-me-not (Myosotis dissitiflora) **for Pot Culture.**—The value of this charming little Forget-me-not is much enhanced when it is brought into bloom some weeks earlier than it flowers naturally in the open air. Our springs are not always kind to this little plant, for just at the time when it is coming to cheer us with its profusion of bright blue flowers, its progress is rudely stopped by frost, biting winds, or ungenial weather of some kind. It may be had, though, and early in the year in all its charming freshness of leafage and beauty of bloom with but a slight amount of labour to the grower. All that it needs is just sufficient protection during the winter to ward off extremes of weather. What injures this Forget-me-not is alternations of freezing and thawing, snow filling up the crown, partially melting, and then congealing into a solid mass of ice. The comparatively tender tissues of the flowering stems give way under such a severe trial, and blanks and discoloured leafage occur where verdure and floral beauty should reign. There is no more lovely little plant than this for the embellishment of the conservatory in early spring; it equals, or even surpasses, the Lobelia in effect, for the blue of the flowers is lovely in the extreme, and is never seen to so great advantage as when in intimate association with other shades of colour. Sow early in the summer, grow along freely, pot up in autumn, and protect against severe weather, and you will have in early spring floral gems of the first water and such as will not be misplaced wherever and whenever employed.—J. CORNHILL.

Eupatorium odoratissimum.—This is a very useful plant for winter blooming. It is invaluable for the cool conservatory, and is especially suitable where means are limited. We have a number of large bushes of it standing in a house where the frost has only just been kept out quite white with large panicles of flowers, and they have been in this condition for the last six weeks, and will continue so for a long time yet, and after the first bloom is over, if the ends of the shoots are cut off, a new crop of flowers will be produced. The plants to which I am referring were old ones cut hard back last June, planted out in an open sunny border, lifted and potted in September, placed on the north side of a fence to get established a little, and housed before sharp frost was expected. Cuttings struck in spring and planted out will make good-sized bushes in one season, but do not, of course, make such dense, well-furnished specimens as older plants that have been well pruned in and planted out about June.—E. R.

Heliotropes in Winter.—When the stock of Heliotropes is propagated for bedding in spring, a few dozen of the most vigorous plants should be selected, and grown on specially for winter flowering. They should not be allowed to starve in small pots, but should be shifted into larger pots before they receive any check, and as soon as all danger from frost is over they should be plunged in a bed of cold ashes up to the rims of the pots in the open air. All shoots should be pinched back, to induce a bushy habit, and by so doing flowers will not be permitted to form. The bed should occupy an open situation, and the plants must stand far enough apart individually to permit of a free circulation of air, and so insure robust, short-jointed growth. Such plants when placed on a shelf in a warm intermediate or forcing house in winter will produce a large number of flowers for cutting from October to February or March. Good little bushes may be had in 5-in. pots, but the strongest will require a size larger. Plunging the pots in summer will save watering, and prevent the hot sun acting so forcibly on the roots at the sides of the pots, from which cause plants that are standing far apart with their pots unprotected sometimes lose their leaves. A few of the most vigorous may, if desired, be trained as standards, with stems 12 in. or so long. By attention to pinching good bushy plants may be had in one season. The dark purple-flowered varieties are the best for winter blooming, as the pale-coloured flowers become still paler in brisk heat, but the dark varieties still retain a delightful tint of purple. Heliotrope flowers may also be had in abundance in winter from old plants planted out and trained against a wall in a warm, light house—indeed, that is the best plan to adopt if the flowers are wanted in quantity The plants should be pruned well back about the end of August, or a little earlier or later, according to the time the flowers are required. The syringe should be used freely, to induce a free and vigorous break; but when once the shoots have fairly broken into growth less syringing will be required, as this, as autumn approaches, only tends to promote weak growth. After a good break has been secured, the size and number or the trusses of flowers will be in proportion to the direct light that reaches the plants, accompanied, as it should be, by a corresponding amount of heat.—R. A.

Highclere Pink.—This is one of the best rich crimson-scarlet Pinks we have for borders. It keeps long in bloom, and it is equally good for forcing as for outdoor decoration. Some plants of it struck last spring are just now coming into bloom, and promise to produce flowers in abundance.—J. C. F.

Ficus radicans.—This makes an excellent plant for baskets, or, when grown in pots, it is very useful and effective for draping the path walls of plant-houses. It grows rapidly, and will withstand a great amount of rough usage, and is therefore well adapted for room decoration. It is a plant not very commonly met with, but it is largely grown by a few nurserymen near London, who carry out indoor decoration on an extensive scale.

Double-flowered Plum (Prunus sinensis fl.-pl.).—Amongst winter-flowering conservatory plants one of the prettiest at present is this double white Prunus, and it is a plant that requires but little heat to bring it into flower. Every shoot of last season's growth is now laden with most beautiful pearly white double flowers, and they remain in good condition for a considerable time in a cool conservatory temperature. I find this, Deutzia gracilis, and Spiræa japonica to be most useful for mixing with brightly-coloured Azaleas and Dutch bulbs now coming freely into bloom.—J. G. L.

How I Grow Tuberoses.—The fragrance of the flowers of these is not surpassed even by that of the Gardenia; indeed, it is much more agreeable, as Tuberoses have not that sickly odour about them which the Gardenia gives off when one comes too near it. Besides, the flowers are quite as beautiful, last longer, and can be used for similar purposes, and last, but not least, the plants are easily grown, and are not troubled with insects. The imported roots are the best, and should be potted as soon as possible, at least for early work. A noteworthy authority on the subject recommends the plants to be plunged in strong bottom heat as soon as potted, and afterwards grown on in cooler quarters, but they do quite as well if started gently and pushed on leisurely. One lot was potted last year in February, rather late in the month, and started in an intermediate house, but the pots were not plunged. The plants started into growth sooner than was expected, and to prevent the leaves and stems from becoming soft and lanky they were moved into another house, where they got plenty of light and air and a place for themselves, and throughout the summer and part of the autumn no artificial heat given, but the house was kept warmer than a greenhouse. They made robust growth, but very tall stems, and did not flower till August, and they continued to produce flowers for about three months. Later in the autumn a little heat was given to assist the development of the flowers. As it was just the season we need such flowers, most single flowers were cut every day, and a number of the plants were placed in the conservatory to give fragrance to the house. The Tuberose is best grown in single plants to a pot, and 6-in. pots are a suitable size. A compost consisting of three parts loam, one part peat and sand, and a little well-rotted manure will suit well. Good drainage, but not too much of it, should be afforded, and during growth plenty of water should be given.—W.

SHOW AND FANCY PELARGONIUMS.

The varieties of Pelargonium best adapted for the requirements of the grower for profit and decorative purposes, whose principal object is to have plants that will produce large quantities of bloom, and that will be as much as possible continually in that condition—in fact, kinds that may be had in flower at almost any period of the year, are very different from the kinds grown expressly for exhibition. They must be robust, and have flowers of brilliant and striking colours and large in the trusses, with individual flowers of good substance. The form of the blossom is not so much considered as it is in the case of florists' kinds strictly so called, but many of these are truly beautiful, and almost equal in form to that of the so-called florists' kinds. In many private gardens there is to be found a greenhouse that could be devoted with the greatest advantage to the culture of these truly useful and really beautiful plants, and I would recommend intending growers of them to visit Covent Garden in the spring in order to make a selection of the best and most striking kinds. This is the best way by far of forming a collection, as one sees what one is buying in its true character, and thus mistakes are less likely to be made, and time, which often is wasted in cultivating an indifferent selection, is saved. The little additional money expended in purchasing the best kinds to be obtained in the first instance is in the end the truest economy. When the plants are bought, the grower will furnish the names of the sorts, which can be cheaply packed in common Orange boxes. The latter are easily procured in the market, and very largely they are used for such a purpose. Place the pots closely and tightly together, and they will travel any distance in safety; they do not require any covering, provided, of course, it is not frosty. Almost all the pot plants that go from Covent Garden to the large northern towns of England are despatched in this simple and expeditious manner. As soon as the plants have reached their future home, cut them down and begin propagating them at once, as these kinds—unlike the sorts grown for purposes of exhibition—are best struck as soon as possible in the season, and in a soft, green state; thus treated, they will always be vigorous and clothed with healthy foliage to the pots. This matter of early propagation is indeed absolutely essential, because the plants are required to be perfect little specimens the following spring. It will therefore be obvious that there is no time to be lost. When the cuttings are made in the usual manner, about four or five may be inserted in some good sandy soil round the edges of a large 3-in. pot. I have found this plan better than larger pots filled with cuttings, as when crowded, at the time of potting off the majority of the roots get broken and the young plants receive a severe check; whereas in the smaller pot and round the outside the roots can be easily preserved, and the young stock receives no check. Use pots that are perfectly clean, otherwise when you wish to repot your plants you cannot do so without injuring the roots, which adhere to the sides of the dirty pot. Place the cuttings when inserted in a house near the glass, sprinkle them with water, and shade them if the weather is bright, as green cuttings should not be allowed to flag. Look sharply for green fly, remove decaying foliage, and the cuttings will soon strike root, and be ready to be placed singly in small 2-in. pots.

Show and French Spotted Pelargoniums.

Treatment after Potting.—As soon as the newly-potted plants have taken hold of the fresh soil they must receive their final pinching in, and be encouraged to grow in every way, treating later stock in a precisely similar manner. Be sure not to overcrowd. The temperature should be about 50° minimum, with ventilation night and day. During the dull winter months avoid as much as possible wetting the foliage when watering, and only give water when the plants are dry, and then a thorough soaking should be administered. Nothing can be worse for plants of all kinds than homœopathic doses of water thus given. The surface of the soil often appears moist when in reality the roots beneath are suffering from drought. Be careful, therefore, that this important operation is at all times properly performed. By January the earliest plants will be fast pushing up their flower-buds, and will require tying out to a few neat stakes, of which, however, as few should be used as possible, consistent with a due regard to the form of the plant and prevention from breakage. Use liquid manure freely. Let the temperature increase 5° or 10°, according to the state of the weather, taking every possible advantage of sun-heat; thoroughly cleanse the foliage (of which at all times the greatest care must be taken) by the free use of the syringe and plenty of clear rain-water, and also fumigate frequently with Tobacco, in order to kill that bitterest insect foe with which Pelargoniums have to contend against, viz., green fly. As the plants approach the blooming stage, provision should be made for shading them when necessary, and, of course, for the exclusion of bees. When the month of March has set in, the grower, if all has gone well, will be in possession of a house full of about as useful and beautiful plants as can well be imagined.

The Fancy Pelargonium requires in all its management treatment similar to that of the large-flowered kinds, with this exception, that, being naturally more feeble in constitution, it requires a rather lighter soil to grow in and more warmth. They require also special care in watering; if once this is overdone death is the inevitable result. The fancy Pelargonium thrives remarkably well when grafted on strong-growing stocks of the large-flowered varieties.

Best Description of House.—The best structure for their growth is a low, well-ventilated, well-heated, span-roofed greenhouse, with a path down the centre, and stages or beds of a convenient width on either side. Do not have the shelves too wide; nothing is gained by that, as, of course, the easier the plants can be reached in order to clear them of dead foliage, or to tie and water them, the better and more expeditiously can these operations be performed. Keep them a little close for a few days after potting, and see that they are thoroughly soaked with water at first. When established, give them all the air and light available, and of course as the summer weather sets in no artificial heat will be needed. Pinch out the points of the shoots to induce a dwarf bushy habit, and shift into a size larger pot as soon as convenient. Some place their stock of young Pelargoniums out-of-doors in summer, but with this plan I do not agree, as the foliage becomes rusty, and in a great many cases the foundation of a bad attack of spot is laid. Therefore, keep them under glass, and allow them all the ventilation possible, and no shading. A good plan by which the excessive use of the watering-pot may be avoided in very hot weather is to cover the stages with old mats, and place on them about 2 in. in thickness of coal ashes or Cocoa-nut refuse. Upon this set the pots, and the plants will be greatly benefited thereby. By the end of August, the plants for blooming in the month of March should be in their flowering pots, 5-in. or 6-in. ones—not larger. Use rather heavy loam for them, and not much decayed manure and sand. When such small pots are employed the soil cannot well have too much substance in it, and it must not be pressed down too firmly Pieces of soft red bricks—a material to which the roots are very partial—make good drainage, and as brick is a naturally cool substance and retains moisture, it is very beneficial to the plant at a time when they most want such assistance. Therefore use for drainage broken bricks in preference to the ordinary potsherds. The remaining portion of the stock may be repotted, say in September for blooming in April, in October for May, and immediately after Christmas for flowering late in June and July. In this way a good fresh supply of plants will always be available for decorative purposes.

H. B.

LAW RELATING TO GREENHOUSES.

I see this subject is again to the fore. Previous communications have escaped me but I observe that "P. G. C." argues for green houses being included in the "buildings' of the Metropolitan Building Act. As you may remember, this question came before the courts some time ago in the case in which I was defendant—Turner *v.* Norris—and I thought that the position of greenhouses had been definitely set at rest, in the contrary sense to that for which your correspondent "P. G. C." argues. This, however, does not seem to be the case, and by your permission I will recapitulate the salient features of my case, which may again perhaps altogether settle this debateable subject.

I built my greenhouse the width of my garden 17 ft. and 4 ft. deep by 17 ft. high. It was built so as to be a tenant's fixture—*i.e.*, without being fixed to the wall, although fitting thereto closely; the front of the house was of plain panels about 3 ft. high, and from that height and above the walls, 3½ ft. high, all round and at top was glass work. I had a stove in the house into an iron pipe flue. I had intended to board over the walls within the greenhouse, but at the time of the action this had not been done; hence the descriptions of the surveyor to be after-mentioned. The district surveyor came down upon me first on one and then on a second act, with the command to re-build the house with 9-in. brick walls, certain foundations and several other injunctions (I quote from memory), but in particular a slate roof (!!). Having had 40 years' experience of house property, I gave this man's instructions that attention which they deserved.

After certain delay the surveyor summoned me before the Clerkenwell Police Court, in the summons describing my greenhouse as having, beside wood and glass, &c., certain brick panels (alluding to the walls of the garden which I had not yet covered in). There were also references to the stove and parts in the Act relating to all were indicated. I employed an able solicitor, Mr. Ricketts, who successfully carried the case through, grounding his case on the clause relating to exempted buildings, among which "greenhouses, party walls," &c., &c., are mentioned. The judge having been satisfied that the house was solely for the keeping and rearing of plants, decided that it was

exempt. The surveyor strove for the "flue and chimney clause," but the judge decided that only had reference to dwelling houses. We gained the day completely. The judge described the prescription of a "slate roof" for a greenhouse as absurd. The injunction about 9-in. walls, &c., the judge said related only to dwelling houses. The brick panels of which the surveyor sought to make a "damning clause" were covered by the surveyor's own confession that they were party walls; and moreover "party walls" also were exemptions of the Act. We won the victory for the exemption of greenhouses at the cost of 30s., our own costs only—just 30s. fine for the incompetency of a public servant.

Mr. Ricketts declared my case was the first of its kind and would form the precedent for future cases. Therefore it will be of importance for anyone in future troubled with any of these functionaries to communicate or refer their legal adviser to this gentlemen as to the case. One or two remarks may be made on the foregoing: 1st, greenhouses are exempt; 2nd, greenhouse stoves and heating apparatus, flues, &c., are also exempt. Then remains the question of nearness to other buildings qualifying the above. The limits of distance are mentioned in the Act — 1st, a greenhouse flue leaning against a dwelling house might be objectionable (see limits of distance); 2nd, a greenhouse of an abnormal size might fail under some section as to safe building. (See limits of size). It being always understood that these Acts are enacted to safeguard life and limb from fire or insecure structures, not to afford sport for certain officials, and the limits and bounds of these can be readily judged by any ordinary individual. F. Norris.

THE COMING WEEK'S WORK

Extracts from a Garden Diary.

February 14.—Digging land for Cabbages and Cauliflowers. Sowing Sweet Peas. Sowing Fulmer's French Beans in pots in heat. Sowing Radishes out-of-doors. Sowing Radishes in frames planted with sprouted Potatoes. Sowing Onions and Leeks. Potting off plants of Oxalis; also Chrysanthemums, and placing them in cold pits. Shifting a few Ten-week Stocks into 6-in. pots. Pricking off Viola cornuta; also spring-sown Cauliflowers in frame. Putting in cuttings of Bouvardias, Fuchsias, scented Pelargoniums, Verbenas, and Dracænas. Getting baskets for conservatory planted with Nemophila, Saponaria, Musk, and Creeping Jenny. Planting Globe Artichokes for autumn bearing. Putting up wall tree protections. Manuring Rose garden beds; also Globe Artichokes. Pruning espalier Apple trees. Cleaning Violet and Asparagus beds.

Feb. 15.—Potting bulbs of Lilium auratum and plunging them in sand outside; also autumn-struck Verbenas and Dielytras for next year's forcing. Pricking off Capsicums. Putting in cuttings of Mangles and Christine Pelargoniums; also some scented Verbenas and Heliotropes. Planting Potatoes under the protection of a south wall. Putting Artemisias out-of-doors. Boxing Ageratums and putting them into Vinery. Putting young Mignonette on sunny side of pits. Examining Rose-tree ties and re-staking them where necessary.

Feb. 16.—Digging in manure amongst Gooseberry trees. Manuring Strawberries. Top-dressing Calceolarias with a good layer of cow manure; also Peach trees, Apricots, Pears, and autumn Raspberries. Putting soil consisting of four parts loam and two leaf-soil into Cucumber pit. Hoeing among young crops.

Feb 17.—Cleaning walks. Slightly increasing atmospheric moisture in Orchid houses. Sowing Parsnips; also Radishes under the protection of a wall and netting them. Potting off Petunias and placing them in Peach house; also Lobelias, Adiantums after division, Gazanias, and Achimenes. Pricking out more Lobelias, Celery, and Cauliflowers, the latter in a two-light box.

Feb 18.—Sowing London White Cos and Malta Drumhead Lettuces; also Champion of England and Veitch's Perfection Peas, Broad Windsor Beans, Spinach, Dutch Forcing and Early Horn Carrots on south border, and Early Dutch Turnips. Shifting Golden Chain Pelargoniums into 6-in. and 8-in. pots, putting three or four plants into a pot, in order to make large plants, and placing them in heat on Vinery shelves. Potting Heliotropes. Filling all spare cases with Cauliflower plants. Planting Jerusalem Artichokes. Preparing a pit for first Melons. Making ready cradles for the protection of tender bedding plants. Starting third Peach house at 55° by night.

Feb. 19.—Potting last autumn-struck Fuchsias into 3-in. pots for early flowering. Potting spare Cucumber plants in case of accident. Shaking out old scarlet Pelargoniums and re-potting them. Manuring orchard. Clipping Ivy on walls.

Glasshouses.

Orchids.—The potting of these should now be pushed forward. As a rule the best time to disturb them is when they are commencing to make new growth; and any plants of Cattleya, Odontoglossum, Miltonia, &c., that are in this state should receive a shift at once. The soil most suitable for the greater number of species is two parts sound fibrous peat and one part Sphagnum Moss, with a liberal addition of charcoal. A soil of this description, in which peat forms the principal part, will be found much more lasting than one composed chiefly of Sphagnum, which quickly decays, except on the surface, and it does not contain sufficient nourishment to produce fine spikes of bloom. In potting Odontoglossums, keep the plants well elevated above the rim of the pot. The advantage of this will be found when the plants require repotting, as the greater part of the roots will be in the cone of soil above the rim, and can be washed clear of the old material without doing them much damage. These generally require repotting oftener than most Orchids, as in every stage of growth a plentiful supply of moisture at the root must be given, which has a tendency to produce speedy decay in the material about their roots. Cattleyas should be potted level with the rim of the pots, and they should have about 2 in. of compost placed under them. When potted in this way the rhizomes are kept from getting twisted in the way they do when the plants are potted on a convex surface, and they can be moved into pots a size larger without disturbing the roots when potted level; by knocking off the rim of the old pot and boring a few holes in the side they can be transferred to a new pot without the slightest check. The shadings should now be put in order, and any not likely to last through the season should be replaced by new material.

Stove Plants.—Where the different soils have been properly aërated, the potting should now be commenced in earnest. Epiphyllums done flowering should receive a slight pruning, which will induce them to break freely. Any plants of Eucharis that have recently bloomed, and which have overstocked their pots with bulbs, should now be shaken out and the bulbs separated. These should be repotted into good-sized pots, placing eight or ten bulbs in each pot, and the pots should be plunged in a moderate bottom-heat, which will materially assist in giving them a good start. Gloxinias, Achimenes, Caladiums, and Gesneras should now be started. As soon as the Gesneras begin to develop their foliage they should be removed to a shelf or pit, where they can be kept free from being syringed overhead, as this quickly disfigures their foliage. One of the most useful spring-flowering stove plants is Glonera jasminiflora. This is now showing its trusses of bloom, and will be assisted with a little clear soot water.

Ferns.—The stronger-growing kinds should now be taken in hand for repotting and propagation if more stock is required. Varieties having creeping rhizomes can now be parted with safety, and a large stock may quickly be worked up. The Gleichenias will require the greatest care in parting them, as it is useless to cut them up in small pieces and expect to establish them. In propagating these the best plan is to place a few pots round an established plant, and on these the rhizomes can be pegged till established. Seedlings make the best plants, but spores are not so free in germinating as those of most kinds of Ferns. Those who desire to raise Gleichenias from spores should sow them on nodules of clay, and not submit the seed-pan to more than an intermediate temperature. I have seen many seedlings of G. Speluncæ, G. hecistophylla, and G. dicarpa raised in this way. The old fronds will now begin to discolour, and must be gradually removed as young ones develop. The temperarure of Ferneries may now be slightly raised, and more moisture maintained in the atmosphere.

Greenhouse Plants.—Autumn-blooming kinds of greenhouse plants, such as Cassia, Witsenia, Habrothamnus, Ophiopogon, &c., should be got into free growth as early in the season as possible. These should now receive liberal shifts, and be placed in the warmest positions in the house. Cytisuses, Coronillas, and Correas going out of flower should now be trimmed into shape, and should receive a thorough cleansing with the syringe. The different varieties of Agave, Yucca, Dracæna, and other fine-foliaged plants should be placed in favourable positions for their development. Aspidistra lurida variegata should now be divided; it is one of the most useful room plants grown, as it stands dust and dry atmosphere better than most plants. Another sowing of Mignonette and other annuals may now be made, including among the lattter Centaurea Cyanus minor, which will yield a large quantity of flowers early in the summer.

Flower Garden.

Pansies and Violas make beautiful beds either in distinct colours or mixed, and in the latter case if seeds are sown at once they will produce good plants for a late display. Both Pansies and Violas delight in a moist, rich deep soil, cow or sheep manure being especially suitable for them, and when liberally supplied with proper food, few plants make a display for so lengthened a period as they do. Carnations, Picotees, Cloves, and Pinks also make beautiful bed or border plants, and Pinks, when well established, make excellent edging plants even without bloom, as their leaves are of a pleasing tint when seen in a mass.

Delphiniums, such as D. formosum, make striking beds and backgrounds for mixed borders, and the Columbines, such as Aquilegia cœrulea, are likewise extremely attractive as well as useful for furnishing cut flowers. The mixed or herbaceous border is a useful addition to any flower garden, providing as it does a home for plants that do not conform to training, and if judiciously planted always contains something that is interesting. Such borders should now be re-arranged, dividing the plants that are getting too large, and filling up vacancies with new varieties. Plant Lilies and Gladioli in any vacant spaces between Rhododendrons, Kalmias, or Azaleas, for, as these shrubs flower early in the season, they are comparatively bare and uninteresting in autumn, unless provision is made to supply floral beauty by means of the bulbs just named. Lilium auratum and similar varieties, and Gladioli of various kinds are quite at home in such positions; in fact, the shelter afforded them in their early stages of growth more than compensates for any overcrowding at the root to which they may be subjected, as they both flourish under similar conditions, and the bulbs will yield a fine display of flowers in autumn, which, when backed by the deep green foliage of the Rhododendrons, well repay the small amount of labour necessary to carry this useful branch of gardening into effect.

Auriculas.—Now that the weather has changed, the surface dressing of these plants should be seen to without delay. It will be necessary to see that the glass is kept clean; mats or other coverings become dirty, and so does the glass. When air is admitted, tilt the lights on the side opposite that from which the wind is blowing; after the plants start into growth they are injuired by cold winds blowing directly upon them. See that all plants that have become dry at the roots during the winter have a thorough soaking of water, and after this they must not be allowed to become very dry. In every collection there will be a number of small plants; these must be repotted when the larger specimens are surface dressed. They ought not to have a large shift; it is much easier to err on the side of over than under potting. The offsets ought also to be removed when the plants are surface dressed. Pot choice sorts singly in very small pots, and the more common varieties six or eight offsets in a 6-in. pot. If the pots are plunged in Cocoa-nut fibre refuse under a close hand-glass, they require but little attention, seldom needing any water.

Carnations and Picotees.—As soon as the weather permits, plants of these not yet in the open ground should be planted. It is a good plan to place 2 in. or 3 in. of good clayey loam over the surface, and when the planting is completed to surface dress with rotten stable manure. Beds that were planted in the autumn should be looked over, and any plants that are loose should be made firm by pressing them into the ground with the fingers.

Gladioli.—As any of the bulbs of choice varieties start into growth, pot each bulb in a 4-in. pot. In our anxiety to obtain the beautiful varieties of G. gandavensis, many of the fine species and varieties that flower in May, June, and July are allowed to fall into comparative neglect. The best plan is to plant out a few

roots of such sorts as G. Colvillei and its varieties, G. cardinalis, &c., in clumps in the herbaceous borders or in the Rhododendron beds along with Lilies, &c., where they can remain permanently, merely protected with leaves or Cocoa-nut fibre refuse in winter. Here they will continue to increase in strength and to throw up a larger number of spikes year after year. Pot the roots now, and plant out about the end of March or in April.

Hollyhocks.—Continue to propagate as previously recommended, until stock enough has been obtained. Plants that have been obtained from cuttings last season should now be potted into larger pots, and this ought to be done before the roots have been too much confined. Look over the old stools in cold frames, and remove dead leaves, give air freely, removing the lights entirely on fine days.

Pansies in Pots.—If the plants that have been wintered in 3-in. pots have not been repotted, see to them at once. The stems are generally very long, and in that case they should be pegged down to the surface of the soil in the pots. We have wintered our entire collection in pots and boxes this year, and when the weather is favourable the plants will be put out into beds in rich well-worked soil.

Polyanthuses.—Surface-dress those in pots in the same way as has been already recommended in the case of Auriculas; those in beds should also have a surface dressing consisting of equal parts cow manure and good loam free from wireworm. Cover the stems up to the point where young roots are being emitted.

Ranunculuses.—If the weather should continue favourable let these be planted out in the beds previously prepared for them. The surface should be level and a trifle higher than the alleys between. In the soil, which should be loose, make a drill exactly 2 in. deep, and plant each small tuber so that the crown is 1½ in. below the surface when the ground is made level. The rows should be 6 in. apart, and the tubers 4 in. or 5 in. asunder in the rows.

Vegetables.

The bare appearance of kitchen gardens and the prospective scarcity of vegetables will be apt to induce some to set about getting in crops before the ground is in a suitable condition to receive them; by doing this, however, nothing will be gained, but probably much lost. Early sowing of general crops should therefore only be attempted under the most favourable conditions as to soil and climate, but meanwhile let every bit of vacant ground be dug, and when dry, point, or roughly rake it over preparatory to drawing drills for seed sowing. With the exception of a few second early Peas, Broad Beans, Carrots, Lettuces, and Radishes, the sowing of all else—no matter how favourable the weather may become—would be best deferred another fortnight; but to relieve the pressure of work at seed sowing time, all transplanting operations may be proceeded with now as opportunity offers and weather permits.

The following are some of the operations which it will be desirable to get off hand forthwith: Remove the mulching from Globe Artichokes, and make good blanks with offsets from the larger stools, after which deeply dig and manure the ground. If new plantations are to be made, deep tilth is indispensable, and the plants should be from 4 ft. to 6 ft. apart, according to the nature of the soil. Jerusalem Artichokes are amenable to much the same treatment, and the sooner they are planted the better. A deep sandy soil gives produce of the highest quality, and to soils of an opposite character coal ashes can scarcely be used too liberally in order to ensure clean tubers of good quality.

Dig and manure ground for Rhubarb, and make good blanks; new plantations should be made by planting single crowns only, and though the produce by the autumn will be usable, none should be pulled the first season, as such a check hinders its full development the following year. The roots that have been lifted for forcing this season, if planted early, make good plantations for open-air produce next year, subject of course to the conditions before named. Make fresh plantations of Seakale, as cuttings can be had from the plants that have been forced, or from seedling plants that were sown last year. For light soils, abundance of farmyard manure is essential to the production of fine crowns, and for soils inclining to clay fresh stable litter is best. The cuttings should be in straight pieces of about 4 in. in length, and of a thickness of not less than 2 in. in circumference, and they should be planted with a dibber rather deep in lines 2 ft. apart and 1 ft. asunder in the row. All the summer culture they will require to obtain forcing crowns for next season will be the removal of any flower-stems that may appear and an occasional deep stirring of the soil. Prepare cuttings of Horseradish, and plant them exactly as directed for Seakale; if extra fine produce be desired, as soon as the crowns are visible mulch the ground all over with farmyard manure, and give plenty of water in dry weather.

Lift all Asparagus roots intended to be forced this season; the remaining plantations should then be very lightly pointed over, in order to break down the winter's mulching, and incorporate it with the soil. A good dressing of salt at this season would prove very beneficial, except where the soil is of a tenacious character; and if applied to all such soils, it should be in dry weather only. Where new plantations are in contemplation, if the ground has not already been prepared, it should be done at once by trenching as deeply as the nature of the soil admits of, and working in an abundant supply of manure in layers between each layer of soil.

Planting should not be done till the plants have pushed through the soil, which, at the earliest, will probably not be till April. When planting, the ground should be formed into shallow ridges, and the lines for the plants should be formed in the hollow, 3 ft. apart and 2 ft. plant from plant; they should be covered to a depth of 4 in., and as growth progresses the ridges should be gradually levelled over the roots. The space between the plants may to some seem unreasonably great, but with the culture here recommended such will not be found to be the case in the second year of growth, and though the practice is not to be commended, the space between the rows may the first season be utilised for a crop of Lettuces or Radishes. In order that the ground may be prepared for other crops, Parsnips should now be dug up and layered in sand in a cool shed. Celery may also be dug up and heeled in thickly at the foot of a north wall, and the ground may be trenched for the main crop of Peas or Potatoes. Plant out August-sown Onions, and fill up gaps in the autumn-planted Cabbage plots. In the forcing department see that supplies are kept up by methodically introducing fresh relays of forcing roots. Sow successional lots of Radishes, and Lettuces, Celery, Cauliflower, Coleworts, and Brussels Sprouts, if not yet sown, should have immediate attention, and any of these ready to prick out should be done before the roots get matted together. Cauliflower plants in pits and hand-lights should have full exposure in mild weather, and forcing pits containing Potatoes, Asparagus, Carrots, Radishes, &c., should be afforded abundance of air whenever the weather is favourable.

TROPÆOLUM SPECIOSUM.

In one of your late numbers someone asked about the Tropæolum speciosum. It is a great wonder that this gem has not been more widely distributed. Several English friends who saw it with me last summer (in Ireland) lamented that it would not do in England, which of course is all rubbish, but I find that many persons have the delusion in their head that it will only flourish in Scotland.

I know of no introduction of recent years which is so valuable. Not only is its flower lovely, but so are also its leaves and its habit of growth. The way in which it throws its lovely graceful garlands over every thing that comes near it endears it to every one who sees it, and I think quite excuses a little gossipping writing about itself and its habits. A lady friend of mine introduced it from Scotland into this neighbourhood about four years ago. Fearing that our damp climate (on which even the slightest frost acts with deadly severity) might prove too much for it, she gave it a large cone of turf mould over the roots, and covered the stems with sacking for the first two winters. Now, however, she considers that it is perfectly hardy. I received two plants early last spring, and although everybody told me they would not do on a south wall, I put both my plants on that aspect, and I am sure I was right. One plant ran up on wire, quite close to the wall, grew about 14 ft. high, bloomed abundantly, and has after the last desperate fortnight (with about 29° of frost) only lost about 4 ft. of its top. It has had coal ashes at its roots and a few sprigs of Bracken woven into the wire round the stem. The other plant was allowed to ramble through a Gloire de Dijon Rose, which Rose threw out long branches more than 3 ft. from the wall, all through which the Tropæolum rambled in the most enchanting way, but it did not bloom at all as freely as the plant clinging to the wall, and it was killed to the ground in a slight frost in November, so that I am convinced a hot south wall is the right place for it, except in a very favourable climate. My neighbour (before referred to) tells me that now with her it grows and increases like a perfect weed, throwing up heaps of young plants all round the stools. She has a plant against the front wall of a greenhouse, and its "runners" have spread all through a Laurel hedge which runs from the greenhouse, draping it all like the wild Convolvulus would do. I intended to try it next year both on an east wall and a north one. I saw it in the north of Ireland, in County Londonderry, on a north wall, and it was doing very well, but that was near the sea and much milder than it is here. It is a good plan to take up and pot in the autumn a lot of the young plants it throws up, keep them through the winter in a cold frame, start them in gentle heat in February, and then put them out where they are to live permanently in April, when they will be about 1 ft. high. My plants seeded freely; the seeds are most beautiful, exactly like lapis lazuli beads, but I hear that they take an immense time (more than a year) to germinate, so it is hardly worth while sowing them, as the plant is propagated so freely by offsets. I wish those readers who have tried them out-doors would tell us their experience of Tropæolum pentaphyllum and tricolorum. I read some time ago an article in *The Garden* in which it was said these two if protected in the winter with a slight covering were sure to do, and flourish and bloom during the summer when so treated with a luxuriance which would surprise those who had only seen them as pot plants. I have got a bulb of pentaphyllum, but my seedsman advised me not to try tricolorum, as he said it would be only throwing money away. Should pentaphyllum be put into gentle heat to start it?

Q. Q.

Double Daisies are among the most popular spring flowers, and in order to grow them successfully they should be treated as follows: In the month of May take the old stock roots up and divide into single crowns, which immediately plant with a dibber, about 6 in. or 8 in. apart, on light, well dug, and manured land, and if the weather is dry one or two good soakings of water may be given them. They soon strike root, when they should be kept well hoed and

Double Daisy (Bellis perennis flore-pleno).

clear of weeds, all straggling blossoms that may appear being pinched off. In September they should be lifted and planted out when they are in flower; if in a sunny situation all the better. In this position during February, March, and April, they will be in perfection, with as much earth as possible adhering to their roots. There is a pretty variegated kind called by some the Aucuba-leaved Daisy, which makes a good edging for a border, and is well worth growing.

Soil for Lilies.—In an answer in GARDENING as to the proper soil for Japan Lilies, *i.e.*, speciosum, auratum, and longiflorum, it is stated that peat or peat and loam are the best. Now, although I quite agree with this for border cultivation, and have after some years of experiments, found it essential that each bulb should be well surrounded with peat and sand, though the soil under that may be richer if the drainage is good, I have not found peat and loam or loam and sand give nearly such good results with potted Lilies as the following: My garden is but a small one and without convenience for rubbish heap, &c., so for the sake of neatness I had a corner about 8 ft. each way walled and fenced off; into this go all sorts — occasional barrows of manure that may be over, sweepings, grass, prunings, &c. I have frequent burnings to prevent too large an accumulation. Each spring all is piled up to one side, and Vegetable Marrows sown on the top, which do well, whilst the other side is taking the accumulating rubbish. In the autumn and winter for potting my Lilies I use the old heap which is then upwards of a year old, passing it through a coarse sieve. There is a good deal of charcoal and charred stuff in it, which keeps it very light and open. Some of my neighbours grow Lilies rather largely, and in peat and loam, but the difference is considerable. My Lilies are altogether finer; both foliage and flowers are larger and brighter. Last year my best pot auratum had on one stem, 7 ft. high, 28 flowers, a grand pyramid; but my largest bulb, a monster given to me as a curiosity by a large firm of Lilium auratum importers, produced only two flowers, but they were Lilies indeed, 15 in. in diameter, of the bright crimson striped variety. This year the bulb is a fine healthy one, but hardly half its original size; this I find is frequently the case with the very large imported bulbs of auratum, whilst the medium and smaller frequently increase in size, as do almost always the imported speciosum and longiflorum, in the soil I use for potting.—W. A., *Broxbourne*.

Nemophilas.—As a plant for the decoration of window boxes or for growing in baskets or pots for greenhouses, or windows, or for culture in the open air, the Nemophila has few equals. A box 6 in. in width will afford a delightful display of bloom. Good-sized pots filled with plants of Nemophila are worthy of a place in the conservatory or verandah; indeed, the uses to which this beautiful hardy annual may be put are so numerous that it would be difficult to say where it would be out of place. The periods of the year at which Nemophila seed should be sown are early in August for spring flowering, and April for summer blooming. If it be possible to sow the seed where the plants are to flower the results will be most satisfactory, but if transplanting be necessary it should be done with great care.

We find in seedsmen's lists about twenty varieties of Nemophila. Although it is probable that between many of these the difference is slight, a selection of seven or eight kinds might, however, be made with advantage. To the insignis class has been added an improved kind known as insignis grandiflora, the flowers of which are large and of a clear bright blue, and a good companion plant to this is found in grandiflora alba, the flowers of which are pure white. In this section two new and distinct hues of colour have been added in the forms called lilacina, the flowers of which are of a pleasing shade of lilac; and purpurea rubra, which has puce-purple flowers, although a new hue in this family of plants. In other sections some striking kinds have been also added, among which may be mentioned auriculata, a kind of crimson brown in colour with a white eye, and vittata, a velvety black margined with white. Another strong-growing section is that of which the type is maculata, a form well known for its large-veined and spotted flowers. The best representatives of it are maculata albida, which has white flowers blotched with purple, and m. grandiflora, white-veined and blotched with purple. There is also a variety in which the foliage is variegated. Among the forms of Nemophila atomaria are some very attractive dwarf compact-growing kinds that are well adapted for small beds or edgings; these are atomaria cœlestis oculata, clear blue blotched with black, and atomaria elegans, the flowers of which are pure white with a dark chocolate centre.

Nemophila maculata albida.

THE COST OF FLOWER GARDENING.

SOME time ago we pointed out the weakness of Mr. David Thomson's argument against the expense of hardy flowers, owing to the cost of the stakes, and instanced many important families in which stakes were not required. The resorts to which he or his aids in his magazine are driven to defend their position may be judged by the following extract referring to our remarks:—

> Any species or varieties, however beautiful their flowers may be, if they require support in the way of stakes, are reluctantly admitted into the hardy collections, and, as a consequence, the greater number of the most beautiful, showy, and useful of our hardy herbaceous plants are not admissible in the ideal flower garden of those who advocate the abandonment of the bedding-out system. Fancy the result of excluding from the herbaceous garden the stately Delphiniums, the beautiful Aster-like flowered Pyrethrums, several species of the Lily family, Carnations, all the taller kinds of Phloxes, and a host of representative members of other families that in this windy island of ours it is absolutely necessary to stake in some way or other, if we would see them in all their beauty, and not as bedraggled, bespattered, betattered objects—highly illustrative of their fitness for admission into the ragged brigade!

The reasoning power or fairness possessed by anyone who invents an untrue and ridiculous statement for the sake of controverting it in his own fashion are not of a high order. Such words are invented for us who have always fought for a place for every beautiful thing (when there was nought but sneers, as well as now, when there is ample promise). But if fair rejoinder will not help them, inventions of the above type will not answer better. They are too late in the field to stop improvement, and will no doubt cheerfully acquiesce in progress as soon as their surprise and indignation are past. This is already clear from statements that each system has its place—the very thing we have always contended for, it being too notorious that many places, and very large ones, had only one phase of garden decoration, and that crude, limited, and geometrical. It is also untrue that we advocated the total abolition of bedding, inasmuch as we have always stated that within due limits and tastefully done it has its place and its charms as well as other plans, but we have never spared the gross blunder of trusting to it only for our main garden decoration.

Hollyhocks from Seed.—For decorative purposes, seedling Hollyhocks from a good collection are almost equal to named kinds, and there is, as a rule, more vigour about seedling plants than about established ones, and they are less liable to fall a prey to that terrible fungoid disease that has done so much injury to Hollyhocks in some districts. If the seeds be sown immediately in a warm house or a hotbed, and the young plants potted off and well attended to afterwards, most of them will flower this year. Hollyhocks are biennials under cultivation in the open air; but by sowing early in the year, and growing them on liberally with heat and plenty of moisture till the end of March, and hardening them off and planting them out in April, they will be converted into annuals. Some of them will probably be later in flowering, and it is possible that one or two may miss flowering, but nearly the whole will flower well, and continue blooming till quite late in the season, most likely till cut off by frost. In order to have fine spikes, the soil should be deep and rich, and should have been well loosened up and manured some time previous to planting. Unless this has been well done, make large holes where each is to be planted, and put in each hole half a bushel of rotten turf and manure in equal parts and plant in it. This will be a good plan to adopt when planting among shrubs, or in any position where it is not convenient to trench the ground.

HOTBEDS AND THEIR USES.

THE heat generated by the fermentation of leaves, stable manure, and other waste vegetable and animal substances is, when under proper control, so genial and stimulating and, withal, so cheap, costing little in most country places beyond the labour of collecting and working up, that it forms the most economical mode of forcing all crops that require only a few weeks or months for their production; and when exhausted, the materials are still available for manure, and when a proper place is assigned for

them there need be no litter or untidiness. February and March are months during which hotbed making begins in earnest, and if a large heap of fermenting materials be ready for use during the spring the production of many crops besides Cucumbers, Melons, and Potatoes may be made more certain and simple. Leaves alone, when in sufficient bulk, will force all kinds of vegetables, but it is always best to mix a proportion of stable manure with them; about half of each is a good proportion. When all the materials are collected together, the manure and leaves should be well shaken up and mixed. If there are dry spots in the heap, these should be watered, as there must be a certain amount of moisture present to insure fermentation. When the heap has lain ten days or a fortnight it should be turned over and well shaken together again, throwing the outsides of the heap into the middle and watering any further dry spots, so that a regular even state of moisture exists throughout. Early Cucumbers or Melons, if grown in hotbeds, will require the most attention and the greatest nicety in the preparation of the materials and the proper bulk of the beds.

Cucumbers started in February should have the beds at least 3 ft. longer and wider than the frames—*i.e.*, they should project beyond the frame 18 in. on all sides. The bed should be 5½ ft. high at the back, and 4 ft. high at the front; this will give it a good pitch to the sun. It should be put together carefully, and of the same substance and firmness throughout, so that the heat may be regular and steady. If made too solid the heat will be slugglish, and if left too open the heat will, perhaps, be too great. There must be a certain amount of air mixed with the material to insure steady fermentation, and if that amount be exceeded or curtailed, the result will not be so good, and it is here that a little practical knowledge becomes useful, as something depends upon the condition of the materials as to the amount of pressure that ought to be applied. Very often a bed may be put up, and will answer admirably without any treading at all, simply beating it down with a fork as it is built up. In other cases this will not make it firm enough, and it has to be trodden moderately firm. In many cases some shelter should be applied to hotbeds. A row of bundles of Pea sticks set up endways on the windward side has a wonderful effect in keeping the heat steady during boisterous weather. Shutters reared up against the bed on the windy side will also answer the same purpose; anything, in short, that will furnish shelter.

Hotbeds for forcing Potatoes, Carrots, French Beans, and other vegetables, will not require so much preparation, and need not be so large as those for Cucumbers, and, if placed in front of and close to the Cucumber and Melon beds, leaving plenty of space between the rows of frames to get between them, they will answer the purpose of linings to the latter, and it will be, in fact, altogether an economical arrangement. I have tried this plan often, and found it very advantageous, as the space between the rows of frames could be filled up almost as high as the top in cold weather. I have occasionally, when I had much forcing to do, had as many as three and four rows of frames all ranged closely together in parallel lines, and the heat in such a bulk of material is always regular and steady, and not nearly so much labour is required. The frames in the centre row would be occupied with Cucumbers and Melons, and the outside rows with Potatoes, Beans, Carrots, &c.

As the season advances, a good deal of forcing can be done with only a limited quantity of material. Digging a hole in a sheltered corner 2 ft. deep, and filling it full of hot litter and leaves, returning 6 in. or 8 in. of the mellowest, driest soil, will make a capital bed for early Radishes, Early Horn Carrots, White Dutch Turnips, or raising young Onions, Leeks, or other plantt for transplanting which may be desired early. Take the case of early Long-pod Beans; if planted thickly on such a bed in a sheltered place, when the weather becomes more settled they can be moved to a more open situation, and nothing transplants better. Any plant that transplants easily—and almost all will do so, if pains be taken with them—may gain a week in point of time by being started on one of these open-air hotbeds without any glass at all. Mats or netting, or even evergreen branches, or a little straw may be used to cover and protect the beds in cold weather.

Cabbages, Lettuces, Cauliflowers, and Brussels Sprouts may be sown early in February on such a bed in small quantities, in order to have a few plants to put out early, or to fill up vacancies caused by the severe winter. In some places there will be a scarcity of green vegetables, and an effort should be made to push forward crops to fill up blanks as early as possible.

Later in the season hotbeds of a temporary character are exceedingly valuable for purposes of propagation, such as the rooting of cuttings or raising seeds. Lobelias, Alternantheras, Iresines, Coleuses, and similar plants may be raised on slight hotbeds in April, dibbled into a thin stratum of light sandy soil on the top of the fermenting materials. An ordinary frame placed on a bed of fermenting materials 3 ft. deep at back and 2 ft. deep at front, say in the middle of April, will hold hundreds of small cuttings. The warmth from such a bed will be just sufficient to root the cuttings and then decline. Healthy cuttings of most plants in such a genial bed will strike in a week, and at that season, if more stock be required, the tops may soon be taken off and dibbled into another bed of similar size, and as soon as the cuttings are fairly rooted, abundance of air can be given, until finally the lights can be removed altogether. Although I have mentioned the middle of April, yet of course everything depends upon the work to be done and the conveniences for doing it; yet I may say that the best and most lasting beds of Lobelias which we had last year were from cuttings inserted in a very slight hotbed the last week in April. To be able to grow these plants in frames in spring without a single pot relieves the houses, and also the labour, a very great deal, and there is no loss as regards efficiency; on the contrary, in that respect there is an improvement.

H.

SPRING FLOWERING BULBS.

Flowering bulbs associate well with all kinds of plants; for room decoration nothing excels them, as they harmonise beautifully with Ferns and other fine-foliaged plants; and a few Hyacinths and Narcissi in the conservatory impart a spring-like appearance thereto, such as is scarcely to be obtained by the use of any other flowering plants. In the arrangement of bouquets the bells of the Hyacinth are invaluable, the shades of blue being very effective. Tulips are not so highly valued as in former times, and by many are stigmatised as gaudy, but the scarlet Van Thol is very acceptable early in the year, being bright and distinct, and I certainly must confess to a large share of admiration for those grand varieties, the yellow Tournesol and Rex Rubrorum. They need the companionship of light, feathery foliage, and never appear to so much advantage as when associated with Maidenhair and other Ferns. They should, indeed, never be so placed that the eye rests upon them in their entirety, as the foliage is not in proportion to the size of the flowers, which renders them somewhat glaring and obtrusive. In Covent Garden Market they are often seen planted with small Ferns and Mosses, and this arrangement is probably the most tasteful that can be adopted. In the open air they have a more natural and pleasing appearance when growing near shrubs; they do not look well massed in beds in open situations—indeed, to my mind, this is not the place for any kind of bulb, their organisation plainly indicating that they need the fostering care of a more robust vegetation. I am not now writing from the florist's point of view, as I am aware that where a choice collection of Tulips is maintained, the grower so manages that his beds are in some way sheltered. I am merely alluding to the planting of the more common kinds with a view to their successful growth, without any special care being needed at blooming time; and this desideratum is best realised by choosing sites naturally congenial to them. As an instance, let us take the Daffodil. Where does it really appear most at home, and flower in the best manner? Not growing out of the bare earth in exposed situations, but springing from the fresh, bright turf, and where the heavy rains and furious winds are broken from them. I know a wood where the Daffodil and Primrose grow in the wildest profusion. Luxuriant masses of foliage spring up through the Grass and Mossy turf, and are covered with thousands of blooms. At flowering time it is indeed a scene of picturesque floral beauty, and is a point of pilgrimage for flower lovers, who carry off cartloads of them. It is very certain that more might be accomplished in this way than has generally been attempted, not on a large scale, perhaps, but there are few places where some portion of the garden could not be dedicated to this purpose. It is not so much the extent as the arrangement which charms, and in this matter we must, as far as possible, follow Nature's teachings. The modest little Snowdrop and the wild Hyacinth are always found peeping out from the midst of Grassy verdure; there would be something incongruous in their appearance if seen growing in the bare earth. Their home is where they are in constant association with other forms of vegetable life, and their near relatives will, I imagine, be found to thrive best when similarly situated.

B. C.

Noble Maiden-hair Fern (Adiantum farleyense).

Adiantum farleyense.—Few plants have attained a more deserved or wider popularity than this beautiful variety of Maiden-hair Fern. Like most other plants, it had to pass through the trying ordeal that most new or rare plants do, viz., being overdone with kindness when first introduced by being grown generally in too high a temperature and in too light a

soil, which, by the way, is a common error in the case of many other Ferns; but since a compost of nearly all turfy loam and sand has been substituted for one formed principally of peat, and the night temperature reduced to that of a warm greenhouse, or to a minimum of 55° in winter and 65° in summer, much finer plants are grown in one year than we used to get in two seasons' growth. At present we have some fair sized specimens of it in 8-in. and 10-in. pots that were only taken off in the form of single crowns with one leaf attached to them last spring, for when robustly grown they form such large fronds that it does not take many to form a large plant. When fully grown they need support, as the weight of the leaf is too great for the leaf-stalk, and for this reason large plants of A. farleyense will never be so generally useful as the smaller-leaved section of the Adiantums; but as specimen plants for exhibition, or for indoor decoration, when large single vase plants are required, there are very few plants that can surpass well-grown specimens of this noble Fern. It is readily increased by division, and being a free and continous grower, large specimens of it may be secured in a limited time. It delights in abundance of moisture at the root, good drainage, and a moderately moist, but not over-exciting atmosphere. Its highest beauty is attained when a large crown of young fronds is thrown well above the older ones just as they have assumed that rich sunny tint so peculiar to the transition state, to the deep green of the fully-matured leaves. A. farleyense is well worthy of a foremost place wherever Ferns are grown or leaf beauty appreciated. We lately saw a quantity of healthy young plants of this Fern in the Fern house in Mr. B. S. Williams' nursery at Upper Holloway.

ANSWERS TO QUERIES.

4137.—**Renovating Camellias.**—It is not one of the easiest matters to bring Camellias that have got into a bad state of health into good condition, and only time and patience can do so. In the first place procure some clean flower-pots of the same dimensions as those containing the plants, some broken crocks for drainage, and some fine peat mould, mixing with it quite one fourth of coarse river sand. Then turn a plant carefully out of the pot, and with a pointed stick work away as much of the old soil as possible. When the roots appear to be at all decayed, cut away the diseased part with a sharp knife, but be careful not to injure in any way such fibres as may appear healthy. It is probable that a considerable amount of the old mould will come away, as it often happens that when unsuitable composts are employed, or if the pots are too large, or watering is carelessly practised, that the roots never enter the fresh mould when the plant is shifted, and the compost, instead of imparting fresh life and substance to the plant proves a source of disease and decay, so that unless removed the roots cannot regain their normal activity. Having proceeded thus far, the next thing to do is to replace the plant in a pot; choose one that will just contain the roots, and, taking care that it is well drained, place first a few pieces of rough mould on the drainage, and fill in round the old ball with the fine soil, tapping the pot down smartly on the bench, but not ramming the compost either with the fingers or with a stick, but pressing the surface quite firm. Before repotting, however, well sponge each leaf, for the health of a Camellia much depends upon the foliage being maintained in a clean state. The middle of March is a good time to perform the work, and the soil should be moist, but not too wet, as it may then be worked away more easily. Be careful also to use the fresh compost in a moist condition, so as to avoid heavy waterings after potting. Place the plants altogether in one part of the house, water gently, shade from hot sun, syringe them in warm weather twice a day, and keep them rather close, but giving air in mild weather. They should not be pruned the first year, as every leaf is of importance. The first season they will not make a strong growth, but they will make good roots, and will go away freely the following spring. We would not repot again next year, but would allow them to get thoroughly established before shifting them on into larger pots.—C. B.

4126.—**Improving a Grass Plot.**—The Grass plot has evidently been neglected. It should be mown as soon as the weather breaks, and well rolled or beaten with a wooden beater. Dress with wood ashes or soot, or a mixture of both. A few Grass seeds may be sown on the bare places, although, if the present turf be encouraged it will no doubt succeed. Guano—3 lb. to the square rod—will be a beneficial application where the turf is thin and poor.—E. H.

4146.—**Plum Tree, how to Manage.**—Have the Plum sucker grafted about the end of March, or as soon as the tree is in the right condition; secure the scions some weeks previously, and lay in moist earth till required. I expect allowing such a strong bantling to grow beside the old tree was the cause of its death.—E. H.

4074.—**Garden on the Clay.**—Coal ashes are a very valuable article in improving stiff, clayey soils, opening the texture and breaking the adhesiveness. They also possess some manurial properties, and the calcareous matter they contain imparts the warming and sweetening quality common to substances that have undergone combustion. Lime rubbish, acting mechanically as an alterative, will also assist in rendering the clay more friable. Mix the substances together, as you suggest, and give a liberal dressing, breaking up the clay as finely as possible, as the more intimately the substances are mixed the greater will be the effects of the application. Should the clay, however, be of a very strong and tenacious character, a much better plan would be to trench your garden (if it is well drained) in autumn, bringing with the underspit a few inches of clay to the surface and leaving it in narrow ridges through the winter to undergo the pulverising effects of frost. When dried by March winds the ridges will level down in a finely comminuted state, and be in the best possible condition to receive the compost, when the whole should be well mixed and incorporated by the fork. If this be now dug in deeply a further mixture will be effected with the bottom spit, a portion of which will be brought again to the surface. Of course you must be guided by your supply of ashes as to the quantity of clay you bring up to be operated on. The quality of the clay would also require consideration, for, if any part of it be of a barren, stony character, it had better remain where Nature has placed it. Coal ashes are said to produce scab on the tubers of Potatoes, but I may say that this assertion is quite at variance with my own experience. It is certain, however, that Rhododendrons exhibit a strong dislike to coal ashes, and other peat-loving plants may possibly possess a similar antipathy. I should consequently consider coal ashes a dangerous ingredient in a compost for general potting purposes. If you cannot procure loam use some of the best of your garden soil with a liberal admixture of drift or river sand, and a little leaf-soil or very rotten manure; and to succulent plants, as the Cactus, Kalosanthes, Mesembryanthemums, &c., an addition of lime rubbish would be an advantage.—J. Martin.

4133.—**Covering Greenhouse Walls.**—If there is a border and pathway between the stage and the wall, and a good depth of turfy peat and loam can be secured, Camellias might do; they would not mind the shade so much if they had justice done them in other respects. The following plants will also thrive: Abutilon Thompsoni, A. Boule de Neige, Fuchsias, Myrtles, Habrothamnus elegans, and Magnolia fuscata. The green fly, of course, must be destroyed by Tobacco fumigation.—E. H.

4139.—**Plants for Shady Garden.**—The best town creeper for balcony or wall is the Virginian Creeper, but of course it is naked in winter. If there was room for the Clematis Jackmani, Cotoneaster, and Virginian Creeper to grow and blend together, the combination would be very pretty, because there would be always something attractive. I should plant the Wistaria and the Evergreen Thorn on the fowls' house. I never heard that Sweet Brier had such a destructive effect upon plants growing near it; but if two plants are growing where there is only room for one, the strong will eventually overgrow the weak.—E. H.

4121.—**Cool House Orchids.**—The following are all excellent kinds and may be grown either on blocks or in baskets: Barkeria Skinneri, Cœlogyne barbata, Oncidium bifolium, Dendrobium chrysotosum, Lælia anceps and autumnalis, Acineta Humboldti, Angræcum falcatum, Sophronitis grandiflora militaris, Cattleya citrina, and Dendrobium formosum gigan-teum. There are, however, many fine species which cannot well be grown on blocks, but which are of easy culture in baskets, and I should certainly recommend the beginner in Orchid culture to adopt this method, as being more easy and more likely to conduce to good results. It may be as well to state that the baskets here referred to are made of deal, are of various sizes, and may be purchased complete and ready for use. Many Orchids commonly grown in pots would succeed much better in baskets especially in the hands of those not well up in the culture of this tribe of plants. The compost should consist of Sphagnum and lumps of fibrous peat in equal proportions, adding to it some crushed charcoal. Some beautiful kinds which may be grown in this manner, and which should be found in every Orchid house, are Odontoglossum Alexandræ, Lycaste Skinneri, Masdevallia coccinea, ignea, and Harryana, Cypripedium caudatum and insigne Cymbidium eburneum, and Epidendrum vitellinum. For all these a minimum temperature of from 40° to 45° will suffice. The great point in the culture of cool Orchids is to maintain at all times around them a moist, equable atmosphere, for they never thrive with any degree of vigour when the air in the structure is inclined to the side of aridity. Thus, in the winter, when, as is often the case in severe weather, brisk fires have to be maintained, the paths should be well damped down, and where the plants come anywhere near the pipes it is well to stand some pans of water, the gradual evaporation from which will tend to neutralise the parching influence of the heating medium. During the summer time every means must be taken to preserve a genial growing temperature, shading in hot weather and creating as much atmospheric moisture as possible. Good Orchid growers like to top dress their plants with living Sphagnum Moss, and by creating atmospheric conditions favourable to it, so that it remains in a green growing state, they know that they are best promoting the welfare of their plants. The atmosphere of a cool Orchid house should indeed be that most favourable to the growth of Ferns and Mosses, and where one class of plants will flourish the other will thrive. Be, however, at all times careful with the syringe, which in the hands of some is really an instrument of torture, A slight dewing in the height of summer may be beneficial, but atmospheric humidity must be created by the means already alluded to.—J. C. B.

4143.—**Covering Back Wall of Greenhouse.**—A Vine or Fig tree might be grown on the back wall of greenhouses; so also might Camellias, if the border was well made, and that must be an essential condition for the former-named plants. There are many things besides Geraniums and Fuchsias that might be grown next summer. A good deal might be done with such annuals as Balsams and Celosias. Harrison's Musk makes a beautiful greenhouse plant for either pot or basket. The tuberous Begonias are very easily managed, and so are Petunias, double and single.—E. H.

4131.—**Nicotiana longiflora.**—Last autumn I bought a 7d. packet of seed of Nicotiana longiflora from Gibbs and Co., and planted same in a box of good garden mould, a little silver sand and peat well mixed together, and kept in a temperature of 60°, the result being 25 nice little plants. When about 3 inches in height I placed them in 2-in. pots, and as they grew, have given two more changes into larger sizes. They are all now in bud and ready to open. I have not lost a single leaf from any, and they now look perfect. My greenhouse is one put up by myself, 25 ft. long, 14 feet wide, pointing north and south, enabling me to have both sun and shade, and able during our severe winters here to maintain a temperature of 50° to 55° at night. It is heated by a double brick flue; fireplace outside, and coals burnt. Winter generally costs about £2 10s. for fire, and I find I have always a flower to show a friend when he calls. Camellias I find hard to flower; all the buds drop off, which is annoying, but I hope by reading Gardening to do better.—W. T. Kilgour.

—— According to our experience of this plant, it is best grown on from seed every year. The seed should be sown either in warmth in March, or in a cold frame in April in light sandy soil. When the plants are large enough to handle, prick them out into 6-in. pots in a free compost, keeping them tolerably moist, shading a little from hot sun, and maintaining the necessary atmospherical conditions by sprinkling overhead in hot weather. The great point is to get the young plants into free growth early in the year, and keep them moving along briskly without check until they come into bloom. When large enough pot them off into small pots and treat as before, shifting the next time into 4½-in. pots, using a compost of two-thirds loam and one-third leaf mould, with a little white sand to keep the soil free and open. During the summer months a cool, well ventilated greenhouse is the best place for them, and if well attended to in the way of watering, they will grow into robust specimens and will flower freely. We have never grown this plant the second year, but those having specimens may do so. In April the old soil should be mostly shaken away and the plant repotted, cramming the roots into a pot just large enough to hold them, and treating the same as recommended for young plants.—J. B.

4132.—**Mice and Crocuses.**—Any kind of mouse trap, especially the well-known figure 4 trap, should be set near the Crocus bulbs. Killing the vermin if possible is the best protection. Some good may be done by dressing the soil about them thickly with soot or with a thick layer of coal ashes, as it is difficu t for the mice to burrow in loose material. Then chopped furze full of prickles may prove deterring, as also may straw chaff. A little paraffin sprinkled into the holes will help to deter them from entering. The best plan, however, is to endeavour to catch them, for having once tasted the Crocuses they are difficult to keep in check.

4140.—**Frozen Potatoes.**—Any Potato that has been hard frozen so that it is softened is absolutely useless for planting and will soon rot altogether. If any seem not absolutely frosted allow them to remain for a week or so and then their value for planting will soon be seen. Planters must be suspicious of all tubers that at planting time have blind eyes. As to your Onions rotting, it is most probable that they were imperfectly ripened last autumn, and are now keeping badly; the complaint is somewhat common. A hot summer is the best to secure good keeping Onions.

4141.—**Frozen Plants.**—We fear there is little hope for your greenhouse plants after the severe freezing to which they have been subjected. The evidence of mischief shown is pretty conclusive that hope is out of the question. A greenhouse imperfectly heated is a treacherous friend, fair enough when times are smooth, but failing at the moment of trial. You may presently cut back what of the plants seem to have life and in a few weeks it will be seen whether they are alive or not. The Fuschias may not be injured, as their wood is harder; you can simply cut all back and wait the result. —A. D.

4119.—**Quick-growing Ivy.**—The broad plain-leaved Irish Ivy is one of the fastest growing and best kinds for your purpose. It will, when well established, make shoots from 3 ft. to 4 ft. in length, and has fine dark green leafage. Plants in pots may be had for about 1s. 6d. each. A good strong-growing Clematis is Jackmani, one of the best of the strong kinds. It should have plenty of root-room. The variegated Japanese Honeysuckle would intermix well with the Ivy, and present in the leafage a striking and pleasing contrast.

4123.—**Slugs and Ferns.**—No doubt not merely one but several dressings of soot would presently get rid of the slug amongst Ferns. A frequent search by candle-light would also be productive of much good, as a great number might then be caught. The soot should be fresh, and be sprinkled after dark, as it would then both deter and kill. Lime would be more objectionable, but when fresh slaked is very destructive to the vermin.

4124.—**Lapageria rosea.**—The Lapageria rosea will if in warmth make growth nearly all the year through, but the spring and summer is its proper growing season. There can be no better time for transplanting than in the spring—say towards the end of April—when the increasing warmth will soon induce fresh roots.

4120.—**Cobæa scandens.**—This plant flowers during the summer, and the blooms are effective. It is best to allow free development, although if a wall has to be covered with it, the points of the young shoots may be nipped out.—C.

4130.—**Liming Garden Walls.**—The lime will not injure the fruit trees by the wall; on the contrary, if they are mossy it will benefit them. The work must be done with care.—E. H.

4136.—**Liming Cropped Ground.**—Do not apply the lime till the crops are off. Then it can be dug in and mixed with the soil at once.—E. H.

4187.—**Worms in Pots.**—I have a Fuchsia in a large pot in which there is a lot of small worms. Will soot thrown around it damage it? and will it have any permanent effect in killing the worms?—W. P. H. [Soot water will do the plant no harm and help to kill the worms, but a good handful of lime put into a gallon of water and well stirred and afterwards allowed to get clear, will if applied to the soil be most beneficial.]

4188.—**Buying Chrysanthemums.**—Is the present a good time to purchase Chrysanthemums for pot culture? and if so, are established plants in pots better than cuttings for flowering next winter?—OSMAN. [The present is a good time to buy either plants or cuttings; plants would give the least trouble, but we do not know that they would give better results than cuttings.]

4189.—**Ridge Cucumbers.**—*A. B. C.*—Sow in pots in a frame in May to have strong plants to put out in the end of June, or sow in the open air in the beginning of June, giving the plants some protection.

4190.—**Bignonia radicans.**—Is the Bignonia radicans really hardy? that is, will it do on a sheltered south wall with slight protection in the winter in rather a cold damp climate.—L. L. L. [Yes].

4191.—**Potting Geraniums and Fuchsias.**—When ought I to shift Geraniums and Fuchsias, and what sized pots should I use?—SUBSCRIBER. [Turn them out of their pots in March, and shake off most of the soil from the roots. Prune back long straggling roots, and repot in clean well drained pots of the same size as those you took them out of, or even smaller ones if the roots will go in them conveniently. Pot into larger pots about the end of May if you ened large specimens.]

4192.—**Sowing Primula Seed.**—*T. W. G.*—Sow in March for early flowering, and in April and May for succession.

4193.—**Book on Orchids.**—The "Orchid Growers' Manual" (B. S. Williams), Burbidge's "Cool Orchids," "Orchids for Amateurs," by Britten & Gower, are good books, and may be had from our office.

4194.—**Vegetable Seeds.**—I have some vegetable seeds the surplus of my last years sowing which have been put away in sealed packets, can they be used with certainty this year?—CONSTANT READER. [Yes; sow rather thickly in case they should not germinate freely.]

QUERIES

4195.—**Sowing Acacia Seeds.**—I have some Acacia seeds. Will some one tell me how I can sow and grow them?—BUTTERFLY.

4196.—**Bird Lime.**—Will some reader of GARDENING give me practical instructions how to make bird-lime? —G. P.

4197.—**Climbers.**—Will some one give me the names of a few handsome greenhouse creepers such as would run over roof (inside) and make a good shade.—W. G. P.

4198.—**Plants not Flowering.**—I have a small forcing pit with the temperature usually between 60° and 70°, which is not very successful; Spiræas, Salvias, Cyclamans, Gesnerias, &c., never flower and any buds which form turn brown; they are well watered at the root. Is it that the atmosphere is too dry? —E. C.

4199.—**Plants for Windows.**—I wish to fit up my windows like the one illustrated in GARDENING, Jan. 29. Will some one kindly inform me what hardy, quick-growing creepers will be suitable for windows with northern and western aspects?—CHUMLA.

4200.—**Water Plants in Greenhouses.**—In GARDENING for Jan. 22nd, an article on "Water Plants in Greenhouses" was given. I should be greatly obliged if anyone could give me a little more information on the subject, especially as the cost of such a tank as described, say 4ft. square and about 18 in. deep. Is it absolutely necessary for the tank to be of slate? Would galvanized zinc or iron do as well, or be injurious to plants? My greenhouse is a lean-to and as it is used for general purposes stove-heat is not attempted, but during the late severe weather we have maintained abont 40° or 42° on the coldest nights. Facing the south-west in a very open situation it has plenty of light and with the exception of pathway is filled with staging. This being the case I had thought of placing a tank under the stage facing the light and should be glad to know what aquatic or semi-aquatic plants would be most likely to thrive under such conditions of temperature and situation. Any suggestions from those having had experience would be most acceptable.—M. W., *Reading*.

4201.—**Growing Tomatoes.**—Will any reader give me full instructions how to grow Tomatoes? My garden is late and cold, and as I have a very sunny greenhouse, I thought it would be better to grow them in it in pots; what sized pots? Also, the kind of soil, manure, &c., do they require? The seed I have is of the Conqueror.—R. G. M.

4202.—**Scale on Peach Trees.**—Will any reader inform me what course to take with Peach trees infested with brown scale in a cold lean-to house? — F. LIONEL

4203.—**Cutting Down Laurels.**—After this severe weather should Laurels, &c., be cut down at once? or not before March or April, the upper part being apparently killed?—CONSTANT READER.

4204.—**Manure for Azaleas and Camellias.**—Is manure requisite for Camellias and Azaleas? if so, what kind? and how much? Also, when will it be best to repot them? They are most of them young plants.— J. B.

4205.—**Stocks for Exhibition.**—What kind of Stocks are the best for supplying cut blooms for show? and how should they be treated to be ready in August? —J. B.

4206.—**Utilising Frames.**—Will any one suggest the best means of utilising wood frames (seven), with lights, and a good boiler attached? I want to keep plants during winter, and grow Melons, Cucumbers, and other things during the summer. I want especially to know the best arrangement for the flue and pipes? Also, where to build the divisions under the frames, so as to use manure for bottom-heat? I have the use of hot water when the manure heat goes off.—Q.

4207.—**Propagating Clematis.**—I have a few plants of spring and autumn-blooming Clematis, but have hitherto failed to propagate young plants from the same. A neighbouring gardener informs me they require budding the same as Roses upon the wild stock. Can any one inform me where to procure wild stocks and how to work them?—T. H.

4208.—**Making and Planting Window Boxes?** —I shall be glad if some reader will give me a hint on making a window box for outside window-sill. What kind of wood is best? Also, what plants will be best to grow in it, especially dwarf climbers? The window, which is a bay, has a south aspect.—G. J. W.

4209.—**Hedychium acuminatum.**—I have a plant of this, and shall be glad to know when it should be repotted, and also what soil and temperature it would thrive in best.—Mrs. T. W.

4210.—**India-rubber Plant in Windows.**—I shall be glad if some reader will give me some hints on the culture of the India-rubber plant (Ficus elastica) in rooms, and also the reason why blotches appear on the leaves, thus causing them to decay.—TOWNSMAN.

4211.—**Heating Greenhouse.**—Owing to the formation of my conservatory I am obliged to have the boiler (a saddle-back) inside, and of course the plants get very dusty, in fact, spoilt. Would it be injurious to the plants if I heated the water by means of gas-jets placed inside the fire box?—ANCHORIA.

4212.—**Whitewashing Garden Walls.**—I have seen brick walls whitewashed so that they had a nice glazed-like appearance. I was told it was done with quick-lime and oil. Will anyone kindly tell me how to proceed.—NORTH SHIELDS.

4213.—**Border for Pansies.**—My garden is surrounded by a wall 11 ft. high, the border at the foot of the wall is 6 ft. in width; would the border with a due north aspect be too shady for show and fancy Pansies? or would an east aspect (with the shade afforded by tall shrubs on the south side of the plot) suit them better? —OSMAN.

4214.—**Frozen Cacti.**—Will anyone tell me how to treat two Cactuses that have been frost-bitten? they are very soft.—A. B. C.

4215.—**Roses in Pots.**—Some time ago I asked advice about Roses in pots; it was kindly answered. I repotted and pruned them and put in a temperature of from 45° to 50° and they soon began to grow. Marechal Niel soon showed bloom-buds from every point. After the bloom-buds had formed I moved it into a temperature of from 55° to 60°, and it seemed to be doing well, until lately I observe the leaves hanging down as if flagging, and now find they are rapidly falling off. What is the cause? It has had plenty of water, and I have given it weak guano-water (a teaspoonful to 2 gals. of water twice only. On one of the late cold nights the fire did not do well and the temperature fell to nearly 40°.— A. B. T.

4216.—**Leaves of Plants Turning Brown.**—I have a small greenhouse heated by pipes and a star independent boiler with good draught, and in which I burn coke. Can any one tell me the reason why the leaves of my plants turn brown and curl up as if burnt with a temperature not exceeding 55°? and what is the remedy?—E. L. L.

4217.—**Pruning Clematis.**—I have three Clematis, Henryi, lanuginosa, and Gipsy Queen; when should they be pruned and how?—A. B.

4218.—**Making a Propagating Frame.**—Will some reader instruct me how to make a propagating frame in my plant stove? The furnace is built in the house of fire bricks well secured, and I propose making the frame over it some 5 ft. square. I can get any amount of heat, but do not know the best means for regulating it for striking cuttings. I thought of building a brick frame of the dimensions above, and filling in with brick rubble, then sand; would this answer?— AMATEUR.

4219.—**Sparmannia africana.**—How is this grown? —SUBSCRIBER.

4220.—**Gloxinias for Winter.**—I am about to buy some bulbs of Gloxinia. Ought I to keep them out of the ground for some months to come? And when ought I to plant them in order to have them in bloom in November next?—H. S. C.

4221.—**Shrubs for Shelter.**—What evergreen shrubs are best suited to form a hedge to cut off the north wind from my flower garden? The soil is clay and fully exposed to the north. I would like the shrubs to be quick growing, so as to form a protection as quickly as possible.—W. G. K.

4222.—**Newly Made Kitchen Garden.**—My kitchen garden was last autumn made out of a lawn, and was bastard trenched, the turf being buried; stable manure was then dug in, and in December it was, with the exception of a small portion on which some cuttings were planted, thrown up into ridges and ashes and dust scattered over; will it require more manure before the sowing season in March? or how should it be treated?— R. J. S.

4223.—**Spiræa not Flowering.**—I have a Spiræa which flowered well two summers ago, but did not flower at all last summer (after being repotted), and now it has put up one flower-stalk without a single leaf. What is the cause of this? and will the crowns break properly and flower in spring?—T. W. Y.

4224.—**Tacsonia Van Volxemi.**—Will six degrees of frost in a cold greenhouse kill the above climber?— C. R.

4225.—**Strawberry Plantations.**—In the autumn British Queen Strawberry plants were planted on a bank facing the east (the soil sandy loam with some clay and stable manure well dug in). Will they require any further treatment before they flower?—R. J. S.

4226.—**Plants for Winter.**—Could any one give me a list of plants which would supply flowers for house decoration in winter, and also plants which might stand in rooms with gas and ordinary heat without injury? We have a stove house, and ditto with drier heat for flowering plants, large Vinery with centre house for plants (not forcing heat in Vinery), cold greenhouse and a conservatory heated by a stove, yet we are absolutely without flowers for the house. I should say we are just getting up our stock of flowers, as the houses have been neglected.—SUBSCRIBER.

4227.—**Hyacinths in Glasses.**—Do the various colours of the glasses exert any influence on the growth of the plant? What are the best colours? BOSTON.

4228.—**Buds Falling off Geraniums.**—What is the cause of buds of Geraniums turning yellow instead of opening?—SUBSCRIBER.

4229.—**Branching Larkspurs.**—I want to sow two beds now containing Tulips with branching Larkspur. I want the Tulips to remain in the ground, the Larkspur to cover over them when they go out of bloom. My soil is rather a cold damp one, but the beds have been made sandy and light for the Tulips. Will the beginning of March be too early to sow the Larkspur? I want if possible to have it up and the plants fairly strong before the Tulip leaves cover the ground too much.—L. L. L.

4230.—**Climbers for Walls.**—At the back of my house are two walls, each facing nearly due south, but one is sunnier than the other (one being shaded by a wall on the west side). I wish to plant a permanent climber against each, but am uncertain what to select. I should much like if I could have say a Tea Rose and Passiflora cœrulea, but know nothing of their treatment, and therefore cannot decide. Would they be likely to flourish? and if so, what Rose would do best? A few suggestions as to planting and treatment will be welcome? also which should be on the sunniest wall, the Rose or the Passion-flower?—G. H. R.

4231.—**Poultry Manure.**—For what crops is this manure best suited? Is it best used fresh or otherwise? Would it be advisable to mix it in with stable manure for a hotbed? Would Cabbage stalks be an advantage in a hotbed?—CONSTANT READER.

4232.—**How to Destroy Worms in Lawns.**—I have read somewhere that paraffin oil mixed with water will kill worms on lawns. Can any reader tell me the quantity of oil to be used to a gallon of water?—W. P. J.

4233.—**Painting Fern Cases.**—I am making a large Fern case, the pan of which will be of well tinned iron. I shall paint the outside two or three coats. Can I paint the inside without injuring the Ferns? or can I coat the tin with something else to prevent corosion, which will not injure the plants?—SUBSCRIBER.

4234.—**Planting Flower Beds.**—I have a large flower bed in the form of a Maltese cross, the most prominent one in my garden. I want to make it effective for the summer. Will some reader give me a few suggestions as to design, &c.? Would German Stocks (various) and Phlox (various) be good taste for the four ends with scarlet Geraniums for the centre?—MAY.

4235.—**Hoya bella.**—Can any one tell me how and when to propagate Hoya bella? and what compost should be used?—Mrs. T. W.

4236.—**Heating Greenhouses.**—We who are in search of the best and most economical apparatus for heating a small greenhouse should feel grateful to "P.," January 1, to kindly tell us if his stove has or has not a chimney, if 4-in. pipes are the best size, if they extend along two sides and one end of the house, how many rows of pipes, and the distance the rows are apart. We should likewise be glad to know if during the recent severe frost the heat in his greenhouse has not fallen below 45°. Slow combustion stoves without chimneys are strongly recommended by their makers, and if a chimney could be dispensed with, it would be desirable. Will any reader who has given this kind of stove a fair trial favour us with his experience in the matter?—NOVICE.

4237.—**Roman Hyacinths.**—What ought to be done with these after blooming?—ENQUIRER.

4238.—**Glazing Without Putty or Paint.**—Will any reader who has tried this system say whether it answers. Is there not a greater amount of heat required to maintain the same temperature than when the glass is fixed in putty?—E. P.

4239.—**Propagating Diosmas.**—I have tried to propagate the scented Diosma from cuttings and failed. Will some one give me the necessary directions?—Mrs. T. W.

4240.—**Floriferous Nasturtiums.**—Which are the most floriferous Nasturtiums which will do well on a north wall?—L. L. L.

4241.—**Dianthus Heddewigi.**—Which is the most desirable variety of this Dianthus or its like for making bright durable beds; and when should it be sown for succeeding Pansies, which will be removed from the beds about the middle of July?—L. L. L.

Planting Potatoes.—The quantity of seed Potatoes needed to plant ½ an acre of ground must depend upon the size of the seed and the width between the rows. From 15 to 18 bushels however will usually plant such an extent well. As to the advisability of planting grass land with potatoes, knowing well the tendency of pasture to breed wireworm, we should prefer some other crop for the first year; but if potatoes are planted, the turf should either be taken off first and be burned before ploughing, or it should be buried deeply. The better plan would be to half trench the ground, turning in the turf 3 in. deep, then upon that 12 in. of soil, and ploughing afterwards for the planting. No doubt some manure, quite a moderate dressing, would improve the crop, as also would some good patent Potato manure or guano.—A. D.

Primulas Failing.—The tendency shown by your Chinese Primulas to damp off at the base of the plants is too often a common feature, especially with plants that are not fully grown when the winter comes. It is most difficult to check, and, once existent, almost impossible to cure. It most probably arises from the employment of soil that is too tight or stiff, whilst the Primula thrives best and roots most freely in a light, sandy, porous soil, through which the water given can percolate freely. The plants that are not yet affected should have all possible air given them and be kept in the full daylight. The surface of the soil may be gently loosened with advantage, and any dead leaves kept gathered off with the affected plants. Gently scrape the stems of any rotten appearances, and remove the soil slightly round the pot, that moisture may not lie close to the stem. As a rule, the Chinese Primula is one of the easiest to cultivate of all our winter greenhouse plants.

GARDENING
ILLUSTRATED.

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REGISTERED FOR TRANSMISSION ABROAD.

SPOTTED PETUNIAS.

SINGLE-FLOWERED Petunias are among the most gay of summer-flowering plants, and their easy culture and freedom from insects, together with their diversity of brilliant blossoms, render them general favourites with those who have ever once grown them well. A bed of mixed seedling Petunias is very attractive when in full bloom, presenting such a number of varying hues of colour. Seedlings are almost certain to make vigorous growth, hence the necessity of planting them in rather poor soil. They are often employed to form dense masses of colour, and beds of particular varieties are employed, the plants being raised from cuttings. In some cases of using Petunias in the flower garden it is well to raise the plants from cuttings; they do not grow so strongly, nor do they seed freely, and thus the energies of the plants are directed to producing flowers instead of foliage. Selected and named varieties, indeed, should always be propagated by cuttings. Seedlings are very easily raised, and it is not worth while to bother with cuttings. If the plants are required to be large and vigorous when planted out, so as to yield flowers at once, sow the seed in pans in August, and put these on a shelf in the cool shady side of a greenhouse covering them with pieces of glass and shading from hot sun. The soil must be kept moderately moist. As soon as the plants are large enough to handle with safety, let them be potted singly into 2½-in. pots, and kept close and shaded in a warm house till they make root, and then shift them into 3-in. pots to winter there. If they are placed on a shelf near the glass in a greenhouse, and kept moderately dry, they will bear a little frost without injury. It is only those, however, who have but little convenience for raising seeds in early spring in warmth that need trouble to raise Petunias at the end of the previous summer and preserve them through the winter. Those who have a warm house or frame at command should sow the seed at the end of February, and pot off when ready, and grow on into nice strong bushy plants. Single Petunias are excellent plants for the decoration of the greenhouse when grown in pots or baskets. If some plants are grown on into 5-in. and 6-in. pots, and pinched back for a time, to form nice pyramid-shaped plants, they soon become covered with flowers, and remain in bloom for a long period. They should be kept well watered, for they speedily suffer if allowed to be become dry at the roots.

SPOTTED PETUNIAS.

Petunias are also well adapted for growing in stone or rustic vases, as they hang down over the sides, and have a charming effect. The soil used for pot-culture should be light and rich, very free, with quite one-third of silver sand added to it. If the soil is at all sour or of a tenacious character the roots will not move, and the plants will become hard and stunted, and if this once takes place it is extremely difficult to bring them into free growth again; in fact, the great secret of success in Petunia culture is to keep the wood growing rapidly without check, either through getting pot-bound, lacking atmospheric moisture, or becoming too dry at the root. The plants must be kept well stopped, as if neglected in this respect, especially during the earlier stages of growth, they will run up lanky, and become eventually naked at bottom; the flowers-buds, too, must be removed as soon as they appear. The object should be to secure a good base of healthy foliage, and therefore stopping the young shoots should form one of the most important points in their culture during the early part of their growth. It is better to repot often than to give large shifts. As soon as there is enough root to hold the soil together when carefully knocked out of the pot, the plant should be at once put into one a size larger. When the pots are well filled with roots, a little manure water may be given occasionally, which will keep the foliage healthy and help the development of the flowers. For window boxes Petunias are well suited, provided they can get a little sun. If put in a shady place they grow, but do not flower. When grown in pots as window plants, it

plants, it is a good plan to cut them back when they are on the wane, and if a little liquid manure be given them they will grow and flower again profusely. The strain of Petunias we now illustrate is that of Messrs. Webb & Sons, of Stourbridge; a very good one, but the tendency to vary is so characteristic of these plants as now intercrossed in gardens that it gives rise to good strains whenever any one takes the trouble to grow them.

ROSES.

ROSES ON LAWNS.

Growers of standard Rose trees often complain that they cannot get them to live. Many reasons can be given why standard Roses die off prematurely, but the main one is that suitable varieties are not got from the nursery. An order is sent to the grower that certain varieties are wanted in the form of tall standards. It is thought that every Rose will grow on a Brier. Why not? Why should not all Roses grow alike? It is not imagined that the Brier, being of a robust nature, requires a robust-growing Rose to be budded upon it. Weak-growing Roses require a dwarf stock. Vigorous ones will grow on a 4-ft. stock, and will live a good many years. In order to get standard Roses to live and flourish, it is necessary, in the first instance, to go to a nursery and pick out one's trees. There may probably be a trifle extra to pay, but plants should be chosen that have grown two seasons after being budded; they should have compact and moderate-sized heads, and care should be taken that the growth has been vigorous and healthy. Look well at the roots, and see that there is plenty of fibres and no large knobs. Reject all having a large knob or clump at the roots; it denotes old age and a plentiful supply of suckers in an incipient state. Examine the stem of the Brier to see that it is clean and free from bruises, which are often caused by the bites of rabbits and sheep during severe weather whilst growing in the hedge rows.

The next point is to know the habit of the Rose budded upon the Brier. Should the variety happen to be a weak grower, no head of any size can ever be formed on it, and its life will be a short one. On the contrary, should its habit be vigorous, with a free-blooming tendency, that Rose tree may live for many years. If tall standards be desired, the only safe plan to prolong their existence for a considerable time is as follows: Dig out a good-sized hole in the lawn (say 3 ft. square and 2 ft. deep), remove all the bad soil and rubbish, and fill up with a rich compost consisting of decayed turf, rotten manure, and ½-in. bones. Let the holes be already prepared; then plant the standards, tread the roots firmly in, and secure the stems to stout stakes with Cocoa-nut bands. Roses of a robust-growing habit will live a great number of years if planted in the way just stated. When a standard Rose tree dies, the cause in most cases arises from a weak Rose having been budded on a tall Brier, and sometimes from its having insufficient nourishment. How is it possible for a weak-growing Brier Rose to live upon a lawn formed of poor soil, on which a few spadefuls of mould have been thrown, and perhaps only one spadeful of manure added? And yet there are many who adopt this style of planting. Rose trees so planted, however, soon begin to show signs of sickness, and small blooms are the result; if they should manage to survive one summer they die the following.

Roses, in order to flourish, especially standards, must have a good soil enriched with manure in order to make them grow and assume a healthy condition. The soil that the Rose prefers is rarely found on a lawn, and it is for this reason that a large pit or hole must be made as before mentioned. Syringing the foliage during the summer evenings, mulching the roots with manure in winter, picking off caterpillars in spring, the application of liquid manure, and other general routine, must be attended to if fine Roses be desired; spring and summer pruning must also be attended to. If the above instructions be followed, Rosarians, however inexperienced, will be successful.

Subjoined is a list of varieties suitable for growing on a lawn; it embraces none of the weak kinds so liable to disease and death; all of them form large-sized heads, and most of them belong to the finest and best of our exhibition varieties, viz.: *Hybrid Perpetuals*—Abel Grand, Baron Hausmann, Baroness Rothschild, Beauty of Waltham, Centifolia rosea, Charles Rouillard, Charles Lawson, Cheshunt Hybrid, Dr. Andry, Duc de Rohan, Duke of Edinburgh, Dupuy Jamain, Edouard Morren, François Michelon, Fisher Holmes, General Jacqueminot, John Hopper, La France, Lord Clyde, Madame Charles Wood, Madame Rivers, Madame Therese Levet, Marie Rady, Marquise de Castellane, Maurice Bernardin, Nardy Frères, Jules Margottin, Paul Neron, Pierre Notting, Princess Louise (Laxton's), Prince Camille de Rohan, Reynolds Hole, Vicomte Vigier, Victor Verdier. *Moss*—Baronne de Wassenaer, Madame Moreau. *Tea*—Madame Falcot, Madame Levet, Madame Berard, Gloire de Dijon, Belle Lyonnaise. *Noisette*—Bouquet d'Or.

H. Taylor.

Pillars in Rose Houses.—We have just been building a large Rose house, and think that it would be improved by having some pillars in the centre for climbing Roses, but we are rather at a loss to know what kind of pillar would look best, and shall be glad of a few hints on the subject. In the house there is a bed running all round the outer part, in which are planted small standards and bushy plants of Roses, while at the back there are climbers to train over the roof. The large bed in the centre of the house is raised, sloping towards the sides, and filled with Roses rather larger than those at the side, and it is in the centre bed that we think some pillars would be an improvement.—E. M. A. S.

THE SHRUBBERY.

Hydrangeas Planted Out.—I would strongly recommend any one who has Hydrangeas too large for pot culture to plant them out after all danger of severe frost is over in rich, deeply cultivated soil. Here the soil is generally stiff and clayey, resting on broken soft stone, and the Hydrangea with us forms a beautiful flowering shrub, which is very effective during the late summer and autumn months. I may remark that many of the plants produce blue flowers, about which much controversy has been held, but which to me appears to be entirely owing to the character of the soil in which they are planted. As the Hydrangeas submit to lifting and replanting as freely as a Dahlia root, I see no reason why any one resident even in the coldest districts might not have a Hydrangea bed by storing the plants in a cellar during winter, and replanting them in April. They would repay that attention equally as well as many of our ordinary bedding plants.—J. G.

Propagating Willows.—I have found the following plan to be most satisfactory in reference to the growth of Willows in rough ground: Cut out a clean notch on the surface with a spade in lock-spit form; then put in the spade in a slanting form about 3 in. and raise the ground a little more than the thickness of the cutting; slip in the cutting on the flat, not on end, and press down the surface raised with the foot, which is all that is required. The selections of Willows for planting in coppices is a matter of some importance. I have found that Willow cuttings from ½ in. to 1 in. thick and about 1 ft. long are the best.—C. M'D.

Planting Holly Hedges.—Hollies succeed best when moved in April or May, and dull weather, if possible, should be chosen for the operation. August and September are also favourable months for transplanting Hollies. The ground intended for the line of hedge should be trenched from 18 in. to 24 in. deep, and from 3 ft. to 4 ft. wide, turning out bad subsoil and stones and replacing them with rich soil or fibry turf well chopped up and intermixed with the original soil in the line of fence. The plants should be from 12 in. to 18 in. high, bushy and well rooted, and planted just clear of one another. Of course smaller plants will succeed equally well and cost less money, but a longer time must elapse before the hedge will be a sufficient fence against cattle, &c. If the weather and soil be dry when planting wash the soil in amongst the fibres with a liberal soaking of water; finish off the planting by adding a thick layer of litter, bracken, or any rough herbage over the roots; this will prove a sure safeguard should a dry summer follow after planting. All the attention that is necessary for two or three years is to keep down weed-growth about the necks of the plants. When the latter have become fairly established, and have made vigorous growth, their sides may be slightly trimmed, encouraging a broad base and narrow, wedge-like top. Holly hedges should not be topped until they have attained the desired height necessary to form a sufficient fence.

VEGETABLES.

CULTURE OF PARSLEY.

There are several varieties, or rather selections, of Parsley in cultivation, each grower having his own Double or Treble Curled to recommend, and doubtless great improvements have been made in its quality and appearance; but of really distinct kinds there are but few. The principal kind now in cultivation is the Dwarf Curled, a handsome variety, which grows close to the ground, and does not readily run to seed. A variety called Fern-leaved is a very handsome kind, and much used for garnishing, and a kind called Giant Curled is very handsome, but for general purposes the Dwarf Curled is perhaps on the whole the best. There are, moreover, the Napoleon or Celery-leaved Parsley and the Hamburgh Parsley. The former is cultivated for its leaf-stalks, which are blanched and used in the same way as Celery, and the latter is grown for the sake of its roots, which are eaten like Parsnips. Neither of these two varieties are, however, of much value, and therefore they are seldom found in gardens. Though the culture of Parsley is very simple, yet to have an abundant supply of it all the year round is often attended with some difficulty, where spare lights are not available for this purpose, and especially in low-lying moist situations. On cold, stiff, retentive soils it frequently dies off. It can be grown successfully in any light, rich ground that has a dry, porous subsoil. To meet a constant demand, three or four successive sowings should be made from February to May. The seed should be sown in very shallow drills, and be very lightly covered. When the young plants are up and large enough to handle they should be thinned to 6 in. distance in the rows. The first sowing or two will furnish leaves through the summer and autumn, and with care and a little management through the winter, but sowings made in May for a supply in winter is preferable. A dry border should be chosen for it, and where there is a south wall a little sown at the foot of it will always be useful in spring. Before severe frosts set in ample provision should be made for thoroughly protecting a portion sufficiently large to furnish a supply of leaves during several weeks' frost. The coverings should only be put on in frosty weather, and in mild open weather the plants should be exposed. The difficulty of having a supply during winter is experienced where there are no spare lights available for protection, and where the soil is of a heavy, retentive nature. Many ways will

Giant Curled Parsley.

occur to an intelligent mind to meet these difficulties. Where the soil is unfavourable a site should be chosen in some sheltered part of the garden, and a bed should be prepared specially for it by putting a quantity of stone and brick rubbish at the bottom, and on this some soil suitable for the purpose. A sowing made on this towards the end of May, if carefully attended to during the summer months in thinning the plants and picking off any luxuriant leaves that may be produced, will furnish a supply during the winter provided it has some protection from frost.

Growing Early Potatoes.—The way I have found to grow early Potatoes satisfactorily is as follows :—In early autumn, before the rainy season sets in, collect a quantity of fine road scrapings, (if a good quantity of horse droppings is with it all the better). Put it under cover, sift it to take out any stones larger than a marble, mix it with equal parts of common fine sand, and a little leaf mould, and mix the whole dry material well together. If the Potatoes are to be grown in pots they should be 12in. or 14 in. in measurement, and quite clean. Place a piece of perforated tin over the hole of the pot, then commence to fill the pots with half-rotten wet leaves, making them firm, until the pots are half full ; then place 1 in. of the well-sifted and mixed dry material ; then place three Potatoes, about the size of a small egg, in a triangle form on the mixture, 2 in. away from the side of the pot, and cover with 2 in. of dry mixture. Give no water, but place them in a cold dry frame. If they are required early, after a few days commence to raise the temperature gently, for it must not exceed 60° at any time. As the young tops appear give light and air—sprinkle with a little water ; as they grow add more of the mixture as before stated until the pots are full. Water as they require it, but that must be done sparingly at all times, especially when the tubers are ripening, or they will be soft and soapy. From beginning to end give all the light and air possible consistent with your heat ; protect from frost, and when cold biting winds occur let it pass through a flannel tacked over where you give air. If the Potatoes are to be planted out in frames commence with the wet half-rotten leaves, tread them firmly, fill up to within 15. in of the glass, then place 1 in. of your material as before described, place your Potatoes on it in rows, 1 ft. apart, and 6 in. from tuber to tuber. In the rows add more mixture as advised for pot culture. Water sparingly, and give light and air as recommended for pot culture. Cover up with mats from frost, ond during sunshine, with plenty of air, the heat may rise a little higher as the season advances. —J. P.

Vegetable Crops between Fruit Trees.—Excellent examples of good culture may be seen in London market gardens, in which Rhubarb and other vegetables are planted beneath the orchard trees, but an orchard proper should, after the trees become established and when the necessity of root-pruning is not likely to occur, be sown down with Grass seed or laid with turf, which can then be annually eaten off and manured by sheep, frequent digging and stirring of the soil amongst fruit trees being often more injurious than beneficial.

A Good Edging for a Kitchen Garden.—Sow in a small bed some Moss-curled Parsley in August, and about April 10 prick it out along the edges of the walk 1 ft. apart, and two rows instead of one. Behind it sow a drill, or, better, sow in boxes Dell's Beet, and plant it out as soon as it is ready. These two common but all-important plants give the vegetable quarters a dressed appearance.—G. B.

Preventing Frozen Pumps.—I see in GARDENING lately the question of how to prevent pumps being frozen during such severe weather as lately experienced is referred to by "J. W. Y.," but I am inclined to think very few would care to go to such trouble when a more simple remedy is at hand. Have any of your readers tried the experiment of suspending the handle of the pump as high as it will go, thus forcing the bucket down into the water? This is a very old practice, and I believe will prove to be a sure preventive of having frozen pumps, especially those fixed in dwellings. —J. P. HITCHINGS.

HARDY ANNUAL HAIRBELLS.

WITH but few exceptions the whole of the numerous family of Hairbells are very handsome, and those of annual duration comprise some of the most showy. To this group belongs the subject of the accompanying illustration.

Campanula macrostyla.—It is rather dwarf in growth, seldom exceeding 1 ft. high, and a good idea of its singular habit may be gleaned from the subjoined woodcut, from which it will be seen that the numerous branches, which are but sparsely clothed with foliage, are arranged in a candelabra-like manner, and which in addition to the large size and pleasing colour of the blossoms, with the beautiful net-like veins of a deeper shade, render it highly attractive. Its specific name macrostyla, or large style, is given on account of an unusually excessive development of that organ, which is club-shape, and rises erect from the centre of the blossom. It is found growing in sandy soil in the vicinity of Lake Isauria, near Mount Taurus, in Asia Minor, whence it was introduced a few years ago. A rich light soil in an exposed and sunny position seems to meet its requirements. It may be sown in the open border, either during the spring months or in September, to stand the winter, so as to obtain flowers early in the season. Besides this handsome kind there are several other species of the

Lorey's Annual Hairbell (Campanula Loreyi)

annual class that are very desirable, and which have long been esteemed as good old-fashioned border flowers. The best of these are—

Lorey's Hairbell (Campanula Loreyi).—An old introduction from Mount Baldi, in North Italy. It grows 9 in. to 1 ft. high, has numerous branches and small, stalkless, shining leaves. Its blossoms are of a blue-violet colour, and are produced in sufficient quantity to render it a pretty border annual ; it is seen to the best advantage when planted in masses. Its variety called alba, with blossoms of silvery-grey, is also very attractive.

Lœffling's Hairbell (C. Lœfflingi).—This is a showy species, dwarf in habit, rarely exceeding 4 in. high, and it produces a profusion of violet-blue blossoms ¾ in. across. It is a capital plant for the summer decoration of rockwork, or for front spaces in ordinary borders. It is found growing naturally in the cornfields throughout Portugal and Spain.

C. attica.—This is another miniature species, about 3 in. high, with reddish-purple flowers, which are produced abundantly throughout the summer. Its white variety is very pretty, and when intermixed with the original kind is strikingly effective.

The Strigose Hairbell (C. strigosa) is a native of Aleppo and other parts of Syria, whence it was introduced a few years since, It grows about 4 in. high, is a profuse flowerer, and lasts long without any abatement in beauty. Its blossoms are 1 in. across, of a dark blue colour, the rather long tube being of a pale yellow shade.

Venus' Looking-glass (Specularia Speculum).—Though this fine old annual cannot be strictly classed with the Campanulas, it is so often ranked with them that an illusion to it under this head is, on this account, admissible. It is, without doubt, one of our showiest annuals, and besides the large-flowered form called grandiflora, both in purple and white, we have the double-flowerd kind, which is said to come true from seed, and a procumbent variety dwarf and compact in habit, and bearing violet-blue flowers.

S. pentagonia.—This is another well-known favourite with larger flowers than the last, but less profusely produced. Its colour is purple, with the centre of a deep blue shade. This and the foregoing are particularly desirable, for, in addition to their showiness, they invariably scatter their own seeds, which come up year after year and give no further trouble ; therefore they are as useful as the perennial kinds.

A Few Words about Violets.—As I have been very fortunate in growing and flowering Violets during the winter, even without the help of a frame, perhaps a few hints to the readers of GARDENING who have not been so successful may be useful. The Neapolitan I find does best for winter flowering. After the flowering season is over, I always make it a rule to dig up the old bed, and after nicely dividing the roots replant them into a fresh piece of ground that has been got ready for them. A half shady border in the kitchen garden is a suitable place for them, and from these plants I look for my winter supply, as I find they flower much better than runners taken during the early summer, which latter, of course, are better for a later spring supply. By planting the bed about 4 ft. wide and setting the plants 9 in. apart, they can be protected by small Fir boughs placed in the ground and made to meet at the top, which answers very well during sharp weather; during the summer a good dressing of rotten leaves is beneficial to them. I have even during this winter been able to pick not a few, but a fair supply of flowers. I hope others who have not been successful with their Violet beds will try the above plan, which will, I am sure, well repay the trouble.—J. WINFIELD.

Sweet Peas.—I am surprised that any one should find that they cannot make Sweet Peas answer by sowing them in pots and turning them out in the open air when well up. Perhaps they have used heat in raising them, or perhaps they have disturbed the roots in turning them out. Of course in many places Sweet Peas will come up well if sown in the open ground, but in many others, town gardens especially, they are very apt to be eaten by slugs, whereas a good potful, 6 in. high, would escape their ravages. The beginning or middle of February is quite time enough to sow them, and they may be placed in the window of any room where there is not much heat. When the unprotected kitchen garden Peas are being staked is the time to plant them out, and care should be given to watering them.—M. A. P.

Scented-leaved Geraniums.—While zonal, bicolor, and tricolor Geraniums are such favourites, it is to be feared that some of the good sorts in other classes are being overlooked. When one comes to making up a bouquet in winter, a few leaves of the sweet-scented sorts work in very agreeably, especially the Rose, Lemon, and Pennyroyal. In addition to the fragrance of the leaves, they are also quite showy when well grown. For instance, Lady Plymouth is a variety of the common Rose Geranium, with the leaves distinctly variegated with white, the contrast in colour being so decided that it could scarcely fail to attract attention. Then there is Apple-scented, Balm-scented, Citron, Nutmeg, Peppermint, Orange, Myrrh, and (perhaps the grandest of all, in appearance at least) the Fern-leaved. This is a splendid plant, with the leaves so finely cut that they appear more like a mass of green silken fringe than veritable leaves. The plant is a strong vigorous grower, but not coarse and straggling, like the old Rose Geranium.

The White Squill (Scilla alba).—This is not now common in cultivation, being ranked with "Dutch bulbs," all of which in these degenerate days of summer bedding are taken up and discarded. If left in the ground, this useful bulb would breed and multiply. Dog's-tooth Violets, the double Primroses (white, yellow, and lilac), would suit the purpose spoken of ; and I would supply "Lover of Flowers" with Scilla alba.—FLORENCE.

TOWN GARDENING.

WINDOW GARDENING.

(Continued from p. 586.)

Plants on Balconies.—In some places there is a light iron or stone balcony outside the windows of the better class of houses; these afford the opportunity for a grand display, and the same remarks apply as to window-sills. It is much preferable even where plants in pots are used to have boxes arranged on the balcony, and plunge the pots in them in some open material, as directed above; it keeps the roots cool, protects them, holds moisture, and does away with the need for so frequent waterings. Many plants suitable for balconies must be grown in pots, such as Pelargoniums, Calla or Arum Lilies, Spiræas, &c., though the majority of plants can be grown turned out into the soil, as above, with good results. Much larger boxes may be used here with good effect; in fact, have them as large, as wide, and deep as possible, so that they can be conveniently attended to. On large balconies. flat roofs, &c., something like permanent borders can be constructed in this way or with a few stout boards, and quite a flower garden on a small scale may thus be had when there is perhaps no other space for any thing of the kind. Often in such an elevated and airy position plants will do far better than in deep well-like courts, where the plants inevitably get drawn and leggy from the light and air being so far above them.

Treatment of Outside Window Plants. — The last week in May is about the most suitable time to fill the boxes with plants. When these get pretty well grown, so as to occupy the soil with roots, and as the weather becomes warm a plentiful supply of water will be needed, especially if the box stands in a sunny window. Do not, as a rule, give water in the daytime, when the sun is shining, though if the plants are flagging, some may be given at any time at the root only, but do not let a spot get on the leaves in sunshine, or it will turn brown wherever it touches. The best time to water all plants in summer is in the evening, when the sun has set; give a good soaking to the soil and roots, and a gentle, but plentiful shower overhead to cleanse the foliage and refresh the plants. In this way the roots are feeding and the plants getting strength from the moist soil all night long, as evaporation is greatly reduced, or ceases altogether during the night, and so the plants are able to bear the ordeal of the hot day that follows. If water is given in the morning it is all evaporated in two or three hours, and the plants receive but little benefit. Water again in the morning if needed and if the day promises to be hot give a good shower overhead early, so that the foliage may be dry before the sun gets strong. Avoid wetting the flowers as much as you can, as it spoils them so. Do not be afraid of giving too much water in hot or dry weather especially, but leave the plants all glistening and dripping; use a syringe, if you have one, in preference to a watering-pot, as it is more effectual and gentler as well. Manure water should be given two or three times a week as the season advances, as the plants, having filled the box and soil with roots, need some extra nourishment. Use this as directed for pot plants, or it may be rather stronger for boxes. Tie the plants to neat stakes if they require it, and do whatever training is needed regularly and carefully. Raffia Grass is far better and neater for tying than anything else. If you have any climbers put the necessary sticks, strings, or wires to them in good time, and keep them carefully tied up as they advance; never allow them to stay too long without attention and get into a tangled mass.

Plants Suitable for Outside Window Gardening.—I append a list of plants suitable for outside windows, balconies, &c., in pots or boxes:—

Amarantus mel. ruber and varieties
Balsams
Calceolarias (shrubby)
*Calla or Arum Lilies
Carnations
Convolvulus major
Creeping Jenny (Moneywort)
Crocuses
Fuchsias, of sorts
Eranthus hyemalis (Winter Aconite)
Narcissus
Geraniums (flowering zonals and gold and silver bicolors only
Golden Feather (Pyrethrum)
House-leek (common, in pots)
Hyacinths
Ivies, especially the Irish and other vars. are fine in winter
Lobelias
Mignonette
Mimulus
Nemophila
*Pelargoniums (show and fancy)
Petunias
*Spiræa japonica and varieties
Stocks (Intermediate or German)
Sedums (Stonecrop) in pots, the best are S. spectabile and S. Sieboldi variegatum
Saxifraga Burseriana and longifolia
Thrift (Armeria) does well in pots on sill
Tulips
Verbenas (venosa and montana are good)
Yuccas (Adam's Needle), fine in winter.

All these will do well in towns, and can only be slightly added to by such things as Heliotropes, dwarf Roses, &c., for country places. Those marked (*) can only be grown in pots. All the others may either be grown in pots and plunged, or planted out in the soil in boxes; the annuals, at least the Mignonette and Convulvulus, are better sown in their places, and not transplanted. Hyacinths, Tulips, &c., may be planted in outside boxes in October or November; put them in 4 in. deep in rich soil, and surround each bulb with dry silver sand to prevent decay; give little or no water during the winter for fear of freezing. When the crowns appear above ground, if the weather is cold and biting, cover them up for a while with a little heap of Cocoa-fibre refuse or leaf-mould, and if it continues ungenial, use an inverted flower-pot to protect them until fine enough for them to escape being nipped, and for the flowers to expand. B. C. R.

Annual Campanula (C. macrostyla).

Ashes for Walks.—Ordinary coal ashes, cinders, &c., make a fairly good firm walk, but to my mind they never look well. Let me describe how I have treated some of my walks, particularly those in the kitchen garden. I got some blue Staffordshire border bricks, 9 in. long, 7 in. deep, and 3½ in. thick, there is a hole in each one about 2 in. from the top about 2 in. into the brick; in each of these I put a short piece of galvanised wire; the guage I cannot give, but about ¼ in. thick; this keeps the whole length together. These bricks being 7 in. deep admit of being put well into the ground, and their size and weight, together with being tied as it were with the wire, makes an everlasting edging. A coat of tar once a year makes them have a new appearance. So much for the border; now for the walk: I intended to asphalte it, and procured some ashes from our railway station for the purpose, but I found that it would be an expensive operation, and abandoned the idea. I had the ashes put on loosely and rolled, but I found the ashes would not set, and I began to think I had created a nuisance. Not so, however, for my walks are always dry and clean, and when any soil or manure gets out of bounds, instead of sticking to the walk in an ordinary way the rake will remove it readily, and my walk is clean and fit for any delicate feet to walk upon immediately, and this after the heaviest rain. I must now tell where these ashes come from. They are taken from the smoke-boxes of the locomotives after clearing the tubes, and they consist of small pieces of the partially-consumed coal which fly off when stoking, through the tubes. I may say it is nearly free from ashes; in fact it is a black cinder, varying in size from a Hazel-nut to a Pea. There are no clinkers or stones, or discoloured pieces as in ordinary ashes, but simply the cinder which absorbs moisture quickly. It is more readily kept in order on the walks than anything else I know of. Weeds will not grow in it, because the seeds have nothing to germinate in. I got these cinders for fetching, so that my walks are not dear. I really forget the cost of the bricks—I think about 6d. per yard.—Cinder Walk.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary.

February 21.—Making Asparagus land ready for sowing; getting land ready for Seakale planting; potting Gladioli, Chrysanthemums, Stachys lanata, and Calamint, and pricking off young plants of Feverfew and Lobelia; beginning to pot off Salvia fulgens. Putting in cuttings of Justicias, Heliotropes, Coleus, Achyranthes; Bouvardias, Thyrsacanthus rutilans, and scented-leaved Pelargoniums; starting some Achimenes; putting a slight shading over Cinerarias during bright days; salting all Mossy pathways; Clipping Ivy and cutting out dead Laurels; giving a little soot to all Strawberry plants in bloom and that have set their fruit.

Feb. 22.—Putting some Gloire de Dijon Roses against a south wall, plunging the pots, and nailing the shoots to the wall for very early out-door flowers; planting out Cauliflowers between dwarf Peas; beginning to plant Lapstone Kidney Potatoes; finishing planting Globe Artichokes; staking the earliest Peas; covering more Peas with Asparagus tops to keep them from sparrows; taking up all plants of Winter Broccoli that are showing and placing them under protection; putting some new soil and manure to Cherry trees; manuring Strawberry and Asparagus beds; keeping Rose-house from 50° to 55° at night.

Feb. 23.—Sowing Radishes under the protection of a Peach wall; sowing also early Dutch Turnips, and a frame of Early Dutch Forcing Carrots and Radishes along with them; potting plants of Dielytra for forcing, white Pinks for forcing, and Tropæolum canariense; pricking off Capsicums; putting in cuttings of Plumbago, Scarlet Pelargoniums and Willow, the latter to furnish flower sticks; planting some spare hand-glass Cauliflower plants under cases, and a few potted Potatoes under protectors; putting some Musk into heat, and also the last batch of Rhubarb. Taking young plants of Centaurea and Oxalis out of heat and putting them into cold pit.

Feb. 24.—Potting Heliotropes and cuttings of stove plants. Shifting Schizanthuses into larger pots, also Veronica Andersoni variegata. Potting-off spring-struck Alternantheras, Nepeta, and Oxalis. Shaking out and re-potting previous cut-down scented Verbenas. Sowing Rhodanthe and various sorts of Melons; also some Mignonette under the protection of the Orchid-house wall; and a little Chervil, covering the seed with ashes. Planting Potatoes, Shallots, and Garlic; also some Watercress roots in pond. Pricking off some Red and White Celery. Putting in cuttings of Pelargoniums, Iresines, Mesembryanthemums, Crystal Palace Nasturtiums, and Carnations, the last under bell-glasses on a slight bottom-heat in hotbed frame. Top-dressing planted-out Gardenias with leaves. Digging borders for Carnations and Gladioli; also Celery land for Peas, and dressing the Mint bed.

Feb 25.—Potting Ghent Azaleas and plunging them; also Deutzias. Sowing Tree Mignonette in small pots in heat; also sowing Gourds, Beans, Champion of England and Nonpareil Peas, Spinach, Early Dutch Turnip, Incomparable White Celery. Planting Schizostylis coccinea; also Horse-radish in trenches. Pricking off Sweet Basil, Marjoram, and seedling Tomatoes. Putting in cuttings of Purple King Verbena, Anne Boleyn Pink, and more Dahlias; also Monochætum ensiferum, and Thyrsacanthus rutilans. Putting in Chicory to blanch; also another batch of Seakale. Digging vacant borders, preparing land for Cabbages. Arranging and cleaning old Pelargoniums in pits. Putting pots over Seakale, and covering them up with soil for late cutting. Preparing frames on leaf-beds for young spring-sown Lettuce plants.

Feb. 26.—Potting Heaths in peat; also Ferns in loam, sand, peat, and leaf-mould. Potting off rooted Vine eyes, and boxing and potting off Salvias; also Pelargoniums, Petunias, and Mimulus for flowering in pots. Shaking out and re-potting old Fuchsias. Sowing Onions and Parsley. Planting frames with Potatoes. Nailing and arranging creepers on front of house. Clipping Box edgings. Looking over fruit room and removing all decayed fruit. Cleaning Herb beds and Rhubarb plot. Burning up rubbish.

Glasshouses.

Ferns.—A very interesting collection of these can be formed by means of hardy kinds alone. Where these are grown in pots, and have been protected during winter in frames, they will now be fast swelling up their crowns, and should be repotted before their growth is much advanced. The fine crested varieties of Lastrea Filix-mas and the beautiful forms of Athyrium Filix-fœmina are not easily surpassed by the finest exotic kinds. Some of the hardy North American kinds, such as Adiantum pedatum and Onoclea sensibilis, deserve a place in every collection. The delicate varieties of Cystopteris and the beautiful Polypodium cambricum are better for the protection of a frame in winter. The stove and intermediate kinds must now be shaded on sunny days, and a humid atmosphere maintained in the houses containing them. Ventilate cautiously, as cold draughts act very injuriously on the young and tender fronds.

Greenhouse Plants.—Two very valuable soft-wooded plants for flowering at this season are Eupatorium Wendlandi and Salvia gesneræflora. These should now be assisted with weak liquid manure to fully develop their fine heads of bloom. A good batch of the double-flowered Petunias should now be started in gentle heat for early summer decoration. Mimuluses must now be divided and started in frames. The best of these are the varieties of M. cupreus and M. moschatus Harrisoni. Hydrangeas that have formed their trusses of flower must be kept well fed till the blossoms are expanded. Pot off Chrysanthemums, and keep them gently moving in cold frames. A late batch of cuttings of these should now be inserted; they will prove useful for decoration in the autumn. Keep the general stock of hard-wooded plants well ventilated. Young plants in free growth will be benefited by a light shading on sunny days, and they should now be occasionally dewed over with the syringe.

Flower Garden.

Preparations for summer decoration will now need attention.

Pelargoniums wintered thickly in cutting pots or boxes will require increased space; where crowded together until they are planted out they become weakly and drawn up compared with those that are potted off singly, and by stopping the leading shoot as soon as the plants get well rooted the growth of side branches is encouraged, and one good plant managed in this way will be found to be more satisfactory than treble the number indifferently grown or badly rooted. We sometimes dispense with pots, and use as a substitute rough Moss in which a handful of rich soil is tied round the roots. The plants are then set on the floor of a house or pit, and a little light soil is worked in amongst them, and kept moderately warm and moist. Into this they speedily root through the Moss, and may then be transferred to some temporary shelter to be hardened off, finally planting them with the Moss and the ball of roots entire.

Calceolarias that have been kept in cold frames through the winter will also be benefited by more space; the best plan to ensure well-rooted plants is to spread a layer of from 4 in. to 6 in. of soil on a hard foundation of coal ashes, which confine the roots to the soil. If transplanted now about 6 in. apart each way, and the leading shoots are pinched out, they will make good bushy plants by April, when they should be finally planted in the position which they are to occupy; for unless well rooted early in the season, Calceolarias often prove a source of vexation by going off just as they ought to be coming into flower. By following the plan just named, however, and keeping them at all times as hardy and exposed as possible, we find them to be trustworthy free-flowering plants. The sort which we like best is Golden Gem, a dwarf variety with large massive golden-yellow heads of flower that are produced in abundance as long as any flowers are to be found out-of-doors.

Lobelias, Verbenas, Alyssums, Iresines, Petunias, and similar plants will now strike freely in a brisk moist heat, and as soon as they are well rooted they should be moved to lighter and more airy quarters to harden preparatory to transplanting into boxes, pits, or frames. When the latter are available, and the lights can be drawn entirely off them during mild days, the work of hardening plants is reduced to a minimum. In the case of

Sub-tropical Gardening, potting off seedlings of Caster-oil plants, large-leaved Solanums, Cannas, Centaureas, and other fine foliaged plants will now need attention; they must be kept close to the glass to insure dwarf well-furnished growth, and should be shifted into larger-sized pots as they require it, for unless they are fine plants by the 1st of June, there is little chance of their attaining very large proportions before the season is over. All beds intended for this class of plants should be heavily manured and deeply cultivated in winter, and in spring forked over with steel forks; they will then be in good condition for planting. If

Carpet bedding is adopted a large stock of Coleus Verschaffelti and its improved variety must be propagated; also Alternantheras and the golden-leaved Mesembryanthemum cordifolium must be put in at once. Others, such as Echeverias, Kleinias, and Sempervivums, which form such distinct and quaint-looking beds, or which are so largely used for edgings, as in the case of Echeveria glauca, will now need dividing. The majority of this class of plants strike freely from leaves with the growing bud or eye at the base left intact. Echeveria metallica makes a good centre for dwarfer varieties; any plants of it getting too long in the stem may be cut off and inserted as cuttings in light soil and kept moderately dry until rooted. Any of the Sedums that form such pretty carpets under the above-named class of plants may be pulled to pieces and dibbled in thickly in light dry soil on a sloping bank or border, in order to ensure a good supply by planting time, and the same treatment will ensure a good stock of that invaluable green carpet plant Mentha gibraltarica. All dried-off roots of Cannas, Dahlias, Salvias, Gladioli, &c., should be at once removed from their winter quarters and planted or started in gentle heat according to the supply required. Seedling plants should be pricked off as soon as they are large enough to ensure a dwarf steady top growth and a corresponding mass of healthy fibrous roots.

Auriculas.—All our plants have now been surface-dressed. We found it the most convenient plan to carry the plants into the potting shed, where they were thoroughly cleaned, the surface soil removed, and the fresh compost placed on the surface, pressing it down firmly with the fingers. The pots, which had become very dirty during the winter, were washed, and a sharp outlook was kept for green fly. All the plants were replaced in cold frames, where they will remain until a pit can be prepared for them.

Pansies in Beds.—Plants established before winter must be attended to now. Surface-dress the beds with rotten manure mixed with a little loam. Peg all straggling growths down to the surface.

Fruit.

Plums and Cherries.—Few subjects make a better return for the exercise of patience through the early stages than Plums and Cherries when grown under glass, a maximum of air at all times, when it is not freezing, with a minimum of fire-heat, being the most important points in their management. Indeed, so easily are they excited into the most beautiful sheets of bloom, that it is a matter of surprise they are not more generally cultivated for their flowers alone. By the time these instructions appear many of the early kinds will have unfolded their blossoms, when, like all other stone fruits under artificial treatment, they will require careful fertilisation, with a constant supply of air, the atmospheric moisture being regulated by external conditions. It is important that the house should be liberally supplied with fresh air, with just sufficient fire to keep it in motion, and as night comes on the temperature may sink to about 45° when the weather is cold, and 50° when mild, but in the event of a return to sharp frost the flowers will be quite safe at 40°, with the ventilation considerably reduced and a corresponding reduction in the supply of moisture. For culture under glass the best dessert kinds only should be planted or potted.

Vegetables.

Main crops of Onions, Leeks, Parsnips, Carrots, general crops of Peas, and Broad Beans are the more important crops that should be got in as early as conditions are favourable. The frost and latterly the rain having done their worst, there should now be a general clearance of all crippled vegetation, or at least of such of it as is not likely to recover. As soon as the digging of all vacant plots is finished let each be marked for cropping, and if seeds cannot be then sown the ground may perhaps be in good order for planting out Cabbage, autumn-sown Onions, Lettuces, early Potatoes, and Cauliflowers. The latter require rich well-drained ground and to be planted in deep drills, as they are thereby partially sheltered from cutting easterly winds, generally so prevalent in March, and from the effects of which a little protection should be also afforded to Peas by earthing up and staking them on the windward side with evergreen boughs as soon as they emerge from the soil. As a rule, Peas are sown much too thickly in the row, and the rows are too close together. If the seed can be depended on, 3 in. asunder is sufficiently thick. As to distance row from row, that must depend on the average height which the kinds of Peas grown attain, but plenty of space should always be afforded, and a crop of Radishes or Spinach may be grown in the central space between each row.

Potatoes should be planted in but limited quantities yet, and only in positions where they have natural protection, or where protection can be expeditiously applied, but all the seed tubers should be laid out in single file either on floors or tables in cool sheds or rooms, that the sprouts may be developed sturdily. A little dry Cocoa-fibre refuse scattered amongst them conduces to root formation. Thin out Carrots, prick out Lettuces, Celery, Cauliflower, Brussels Sprouts, and Coleworts, and make successional sowings of all these in the open air, but on a bed of leaves and litter to afford a little bottom-heat; in such a position a first sowing of Broccoli, Cottager's Kale, and Savoys should also now be made. Rhubarb will now come away freely by simply covering over the crowns with pots and just sufficient leaves or litter to keep the frost out of the ground. The crowns of Seakale in the open ground intended to be forced should at once be covered thickly with finely-sifted coal ashes, and the only attention required will be to occasionally examine them to refill the crevices in the ashes which are sometimes made through the quick growth of the Kale. French Beans will now bear most abundantly if sown in pits, but bottom heat, say 60°, is essential, and a top heat ranging from 65° to 70° with plenty of humidity. It is also time to make a sowing for outdoor culture of Tomatoes and Capsicums in order that the plants may be strong for planting out early in May.

GARDEN ENEMIES.

GREEN FLY, ROSE APHIS, OR ROSE BLIGHT.

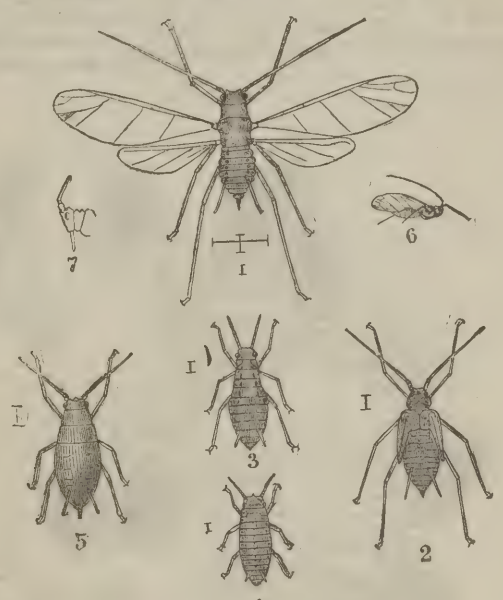
(SIPHONOPHORA ROSÆ.)

This insect is one of the large and destructive family called aphides, which is only too well known to all who have given the slightest attention to the cultivation of plants. It may be classed without hesitation among the gardener's worst enemies, as there are few plants which do not suffer more or less from the attacks of some members of this family. The Rose aphis is unfortunately one of our commonest species, and the injuries which Roses sustain from it are well known to every lover of these flowers. Few Roses are exempt from their attacks, but the Tea-scented kinds and those whose leaves are somewhat evergreen suffer less than others.

These insects are often called blight, and many persons assert that when during northerly or easterly winds in dry weather there is a haziness in the atmosphere, that haze is blight, and caused by immense multitudes of these insects, and urge, as a proof of their theory, the very sudden appearance at times of myriads of these aphides. These insects have not, however, anything to do with atmospheric effects. No doubt they often make their unwelcome presence known in large numbers, and plants may be found covered with them which only a few days before were apparently free from them; but this, no doubt, is due to many of the eggs hatching at the same time, and to the very rapid manner in which their reproduction is effected.

One of the peculiarities of this group of insects is that some of the females never lay eggs, but always produce their young alive, whilst others lay eggs and never reproduce in any other way. The young, which are born alive, begin to produce young in the course of from four to eight days, so that the rate at which they multiply is very astonishing.

The Rose aphis does not entirely confine its attacks to Roses, but infests Dahlias, Asters, Verbenas, and many other plants cultivated under glass. The injuries it occasions to plants when in large numbers is very great, as it deprives the young and tender parts of so much sap, causing the leaves to crumple up and preventing the buds from flowering properly. Numberless plans have been tried for their destruction, but in seasons favourable to their growth it is almost impossible to keep Roses grown out-of-doors free from them. Those grown under glass, however, can easily be kept clean by fumigating them with Tobacco smoke. This plan cannot, however, be so easily carried out with Roses growing in beds out-of-doors; still, by covering the head of the plant with some kind of air-tight cloth, well tied round the stem, the green fly may effectually be killed with the assistance of a fumigator. The cloth should be stretched over a frame, which anyone could make, to keep the buds and young shoots from being injured. Carefully brushing such parts of the plants as are infested with spirits of wine, benzine, or 1 wineglassful of paraffin to 4 gallons of water, kept well mixed, is very effective, as it kills the flies at once. Simply brushing the insects off the plants does a great deal of good, as many are killed by the operation, and the others, once knocked off, cannot well return (except the winged ones). Crushing the aphides on the trees with one's finger and thumb is a very effective, but unpleasant method of destroying them. Syringing with Tobacco water, or a weak solution of sulphate of copper (1 oz. to 6 gallons of water), or an infusion of Quassia chips (4 oz. of chips should be boiled for ten minutes in a gallon of soft water, and 4 oz. of soft soap should be added as it cools); or 2 lb. of washing soda, 1 oz. of bitter aloes dissolved in hot water, when cold add 1 gallon of water; or 8 lb. of soft soap dissolved in 12 gallons of rain water, added to 1 gallon of Tobacco water; or water in which Tomato leaves have been macerated, are recipes which are much recommended; even cold water when applied with some force is very effective. Very rapid changes of temperature seems to check the multiplication of aphides. A heavy thunderstorm will often kill thousands, and cold rain is very destructive to them. The eggs, which are laid in the autumn, do not hatch until the following spring, when all the aphides which are hatched are wingless females. These in a few days begin to produce young, which are born alive, and very much resemble their mother in general appearance, but their legs and antennæ are much shorter in proportion (see fig. 4). After some changes of skin they assume the form shown in fig. 3, and after further moultings, either show the rudiments of wings, as in fig. 2, or else are in an intermediate state between figs. 3 and 5. When in either of these stages, this insect may be said to be in the pupa state. Changing their skins again, they appear as perfect insects, those with the rudimentary wings as alate, or winged females, as represented in fig. 1; those without as apterous or wingless females, as shown in fig. 5. The winged females assist greatly in the increase of their species, for, being able to fly, they can easily move from one part of a bush to another, or fly off to other plants, founding fresh colonies wherever they may settle. They are not so abundant as the wingless ones, except in the spring and autumn, when they frequently migrate in great numbers. About the middle of September the last generation is usually produced, which consists of males and females. The former are sometimes winged, sometimes wingless; they are very much like the females, but are somewhat smaller. The females are mostly wingless and viviparous. After pairing with the males, they lay their eggs, which are very large in proportion to the size of the insect (nearly half the size of its body), a few together near the buds. They are long and oval, and when first laid pale yellow, but soon afterwards become black. They are covered with a slimy coating, with which the female attaches them to the plant.



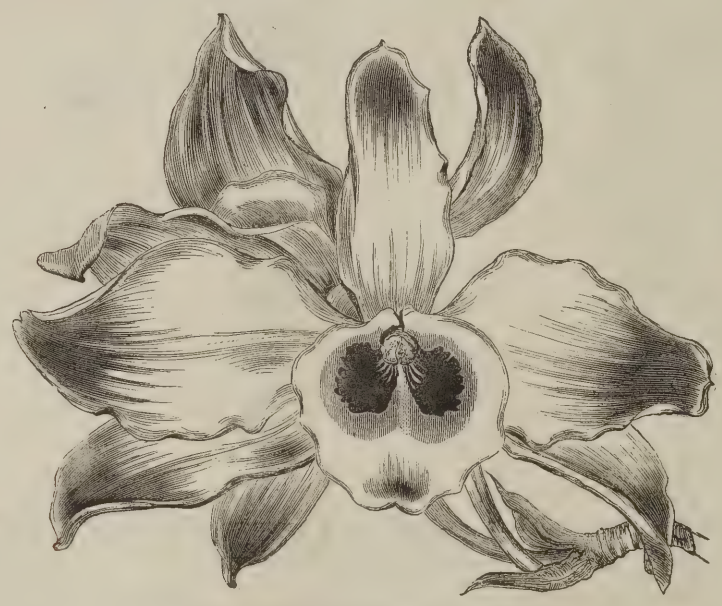
1, Winged female; 2, pupa; 3, larva; 4, ditto just born; 5, wingless female; 6, side view of winged female showing the position of the wings, at rest; 7, profile of head showing the proboscis.

Gas Lime for Walks.—Having lately read in Gardening Illustrated the uses of gas-lime in the garden, I thought it might be interesting to some readers to know that it is a good weed destroyer, preferable to salt in my opinion for gravel walks. I use 2 bushels for 100 square yards, which kills all the weeds and moss, and gives a bright appearance to the walks.—G. W.

ORCHIDS.

Dendrobiums.—The genus Dendrobium is one of the most beautiful and the richest in species in the group of Orchids to which it belongs, the most attractive of which are distributed throughout the different Presidencies of the Indian Empire, and especially in Moulmein, Assam, and Burmah; while others are found in Ceylon and Manilla. As a rule, the Indian species are epiphytal, in their native habitats growing upon trees, both living and dead, and both in sun and shade, the result being that those grown in the sun make shorter and plumper pseudo-bulbs (stems) than those which exist in more moist and shady positions, and, as a rule, the flowers, if not so large, are more brilliant. Two or three species are found in China and Japan, but the most beautiful are Indian, and consequently require a warm and humid atmosphere (that of an ordinary well-managed plant stove) when making their growth, with copious supplies of water at the same time, and a dry, airy, and sunny position when at rest. Some of the finest specimens of D. Wardianum, D. Devonianum, D. crassinode, and D. Bensoniæ perhaps ever seen were grown on in a warm humid plant-stove, to which air was cautiously admitted during mild nights as well as during the daytime; when their growth had attained full size they were removed to a warm and sunny Vinery to ripen. As a rule, Dendrobes may be readily propagated either by layering the old pseudo-bulbs (stems) or by cutting them into lengths and inserting them as cuttings or by dividing strong plants or taking off the side-growths which appear pretty freely on the half-ripened pseudo-bulbs of the previous year. In growing these plants over-potting must be carefully guarded against, for if the roots be embedded in a mass of sour compost they speedily rot, and the energies of the plants are then diverted to the formation of new roots instead of to growth and bloom. Many of the species grow best in small pans, or hanging baskets suspended near the light, and the pendulous-habited kinds look more at home thus managed than when potted and staked in an upright and unnatural position. A compost consisting of fresh fibrous peat, living Sphagnum Moss, and well-dried horse manure suits most of the varieties, coarse, well-washed river sand being added to keep the whole porous; and a well-drained bottom is highly essential, for although these plants will luxuriate

if deluged with tepid water two or three times a day during the hottest summer weather, yet the slightest stagnation or sourness is detrimental to their welfare. The secret of success, indeed, in growing all epiphytes consists in using small pots or baskets of fresh open compost, made firm, so that it does not shift about every time the plant is dipped or watered, and then giving copious supplies of tepid water at the root. It is impossible to over-water plants thus circumstanced, inasmuch as the small well-drained body of compost only holds moisture sufficient to keep the plants in health, and all that is superfluous passes freely away. The culture of many of the most beautiful of all Dendrobes need not by any means be confined to Orchid houses, properly so called; indeed, a few well-grown plants of D. Wardianum, D. crassinode, D. Devonianum, and D nobile look far more beautiful when associated with Palms, fresh green Fern fronds, and other fresh-foliaged plants than when crowded together among other Orchids, scarcely any of which are interesting to an ordinary observer, except when they are laden with flowers. D. Wardianum, which we now figure, flowers as freely as the old and ever-beautiful D. nobile, and quite small plants of it, grown in an ordinary plant-stove suspended from the roof, will produce from twenty to thirty flowers of the size of those represented in our sketch. The colour of the flowers is pure glistening white, each broad segment being tipped with the purest magenta; the ivory-like lip has a golden disk, on which are two dark velvety crimson spots, and there is a pale magenta blotch at its apex. As the plant is now reasonable in price in all good nurseries, it well deserves culture at the hands of all who have a demand for rare and beautiful blossoms during the early spring months. A few flowers of such a lovely Orchid amongst a basketful of white Lilac, Paper-white Narcissus, Deutzia, double Plum blossom, and graceful sprays of Spiræa or Fern will enhance their beauty tenfold.



Ward's Dendrobe (Dendrobium Wardianum).

Utilising Dead Tree Fern Trunks.—The sketch from which the annexed woodcut was prepared was taken in one of the Ferneries at Messrs. Veitch & Son's nursery, Chelsea. It represents Lomaria attenuata growing on a dead Tree Fern trunk, which is clothed also with innumerable seedlings of various other Ferns, such as Nephrodium molle, Polypodium Billardieri, Lomaria blechnoides, &c. This is a desirable method of growing Ferns, as they look more graceful and natural than when cultivated in pots, and they do not require so much attention, as the roots insinuate themselves into the soft, but solid texture of the Fern stems where they are kept at an equable state as regards moisture if water be occasionally applied. Under this treatment some kinds of Ferns thrive better then when grown otherwise, whilst others do not succeed so well. The kinds that thrive best are the Lomarias, Nephrolepis, Davallias, Doodias, most of the Polypodiums, many Spleenworts and Maiden-hairs, &c. A highly attractive feature, too, is the wing of the large tropical Fernery at Kew, where there are admirable examples of this style of growing Ferns, thriving in native luxuriance, mingled with the various kinds of Tradescantia, Saxifraga sarmentosa, &c., and all the attendance they receive is occasional watering and a daily syringing.

ANSWERS TO QUERIES.

4147. — **Hyacinths Coming into Bloom.**—It is not a matter of absolute necessity that the water in which Hyacinths are growing should be changed, but if it smells bad it had best be poured away and other put in its place. It is the rule to put into the water when bulbs are put in the glasses a small lump of charcoal. This acts as a purifier of the water, absorbing noxious gases. Where this is done, and the water keeps pure, there can be no benefit resulting by changing it. Good fresh soft water should be used in all cases, and if thought desirable to change it, the fresh water should be just slightly warmed before coming into contact with the roots. Hyacinths grown in glasses are of little use the second year, but they may be laid in the open ground after blooming till ripe, and stored for border planting another year.—A. D.

4135.—**White Primula in Windows.**—We presume that the double white Primula is referred to, a plant not very suitable for a continued residence in a warm room. We fear that the plant in question will give but poor results. It should not have been disturbed in the autumn; spring is the proper time for propagating it, when cuttings are taken, but it requires good accommodation and an experienced propagator to succeed with them. The only way to treat the double Primula so as to get a fair amount of success when grown in the dwelling is to keep it in an apartment where fires are only occasionally lighted. April is a good time for repotting, but plants cut up in the autumn would not need repotting. Let them remain untouched throughout the summer, giving plenty of air in fine weather. Loam, leaf-mould, and peat in equal proportions forms a good compost.—J. C.

4137.—**Flag Iris Flowering Imperfectly.**—It is very difficult to say what is the cause of the blooms not expanding. There may be a want of general vigour in the plants which might be set right by means of a top-dressing of manure. The Flag Iris likes a well drained, but moist soil, so that in planting them care should be taken to provide a free root-run in congenial soil, and the roots should be able to run down deep in search of moisture in hot weather. When the weather is hot and parching these Iris are benefited by delugings of water, and they like occasional applications of liquid manure.—J. C.

4138.—**How to make Pelargoniums Flower.**—If the Pelargoniums are of the large flowering or show kinds, pot them at once into 6-in. pots, using a soil consisting of two parts loam and one part leaf-mould and sand; "stop" them, *i.e.*, pinch out the points of the shoots once. If, however, they are zonal Pelargoniums, pot them in the same soil in March, and stop them frequently in order to make them bushy; cease stopping them when you want them to flower. In either case keep them near the glass and watersparingly for some time. Temperature, 40° to 45° at night, and 50° by day, with plenty of air.—C. Fielder.

4128.—**Paris Daisy Etoile d'Or.**—We can only assign one cause for this plant not flowering in the winter, and that is want of light. This variety of Chrysanthemum frutescens expands its blooms freely all through the winter in a low temperature, and is really one of the most valuable flowering plants that an amateur can grow. The plants that have bloomed all through the summer may be made to do duty in winter, and will if at all fairly treated yield an abundance of their pretty primrose-coloured flowers which for cutting are extremely useful. The true way, however, to grow this plant is to strike some cuttings in April, grow them along freely through the summer, but in the full sun, getting them well established in 4½-in. pots by the latter end of August. The general treatment will consist in stopping so as to form a neat, compact plant, watering freely in hot weather and picking out the flower-buds until the latter end of August. When the pots get full of roots administer a little liquid manure, or top-dress with some concentrated manure. In this manner good plants will be formed capable of carrying a large amount of bloom; winter them if possible in a light intermediate house where an average temperature of 50° is maintained, or place them as near the glass as possible in a frost-proof structure. If shifted in March they will form grand subjects for decoration in early spring.—J. C.

4141.—**Frozen Plants.**—Your Geraniums are probably all killed. If, however, you are not satisfied on this point you might place them aside for a week or so, at the end of which time you will readily distinguish any which are likely to survive. You can do nothing to save them now. The fate of your Fuchsias may not be quite so lamentable, through being hardier and less succulent than the Geraniums. Keep them dry until they begin to break into fresh growth, then shake the old soil from them, and re-pot with two-thirds loam and one-third leaf soil, rotten manure, and sand.—C. Fielder.

4125.—**Thrips on Plants.**—Having had considerable experience in the use of insecticides, I am quite satisfied that nicotine soap surpasses any other; I use it in the proportion of 3 oz. to 1 gal. water, warm, and have always found the black thrips thoroughly exterminated in one syringing. It also leaves the plants quite clean and glossy in appearance. I am speaking more particularly of Azaleas, Myrtles, &c. For Vines I have recommended it to my neighbours, who in all cases have used it with successful results. I should recommend it in all instances for Vines at the strength of 6 oz. to 8 oz. to 1 gal. of warm water.—H. Hart, *Brighton*.

4162.—**Hotbed for Raising Seeds**—For a frame of the size given the bed should be 8 ft. square, and for the purpose named it should be about 3 ft. 6 in. high at the back, and about 2 ft. 6 in. high or a little more at the front. Mix the old and the fresh manure together; if the former is not much decayed, about equal parts of each may be employed; well shake and mix together and leave it for a week or so, then turn over and shake well together again, turning the outside of the heap into the middle; when nicely sweetened, make up the bed, and place on the frame, and as soon as the drops of condensed moisture inside are clear the seeds may be placed inside.—E. H.

4186.—**Earwigs.**—The earwigs can easily be trapped and destroyed. Pieces of Reed, Bean stalk or Elder with the pith bored out 8 in. or 9 in. long should be placed amongst the creepers on the wall or wherever the insects

abide. The places where the traps are placed should be noted, as the insects will creep into the crevices, and once or twice a day some person should go round with a vessel of hot water, into which they should be flung by blowing down the tube. Roses and Dahlias may be secured from their depredations by placing small empty inverted flower-pots on the top of the stakes with a little hay inside to form a hiding-place for the insects. Perseverance will soon thin their numbers.—H.

4162.—**How to make a Hot-bed.**—Hot-beds should be made early in February. The quantity of manure required depends upon the size of the frame or box to be used. For ordinary requirements the heap of manure when finished should stand 16 in. outside of the frame or box all round. Care should be taken to let the edge of the frame rest well into the heap of horse-manure. When pig manure is used, an equal quantity of horse manure should be used. Pig manure is best for hot-beds when obtained from animals fattening—that from those which have been grazing on commons and roadsides is full of indigested seeds of weed, and should not be used until these have been destroyed by frequently turning over the manure-heap.—BILL-O'-THE-WISP.

4166.—**Guano-water** when applied once a week to Strawberries in a liquid state (4 oz. to a gallon of water) makes them very vigorous and productive; but if sprinkled upon seedlings of the same fruit it would kill them. 2 oz. per yard (5 cwt. per acre) if sprinkled over Onions would double the weight of crop. Ten gallons of water will readily dissolve, or keep suspended in a state of minute division, about 50 lb. weight of guano. When applied to plants not more than 4 oz. should be added to that quantity of water. If it is made stronger it injures or kills the plant to which it is applied. To seeds it should be much more diluted.—BILL-O'-THE-WISP.

4156.—**Vegetables in Shaded Places.**—It was once observed by a great philosopher that he was a benefactor to mankind who caused two blades of Grass to grow where one only flourished before, and I think I might venture to add, or who would prove to us and "F. C." the possibility of growing vegetables under the shade of trees. I would advise "F. C." to allow the ground around the Apple trees to remain undisturbed; their roots extend in every direction as far or farther than their branches, and the deep digging or trenching necessary to the attempt to raise anything would, by disturbing and destroying the roots near the surface, inevitably tend to injure the trees. A few Gooseberries or Currants, black especially, would be found to combine the maximum of profit with a minimum of injury. The only vegetables likely to do any good at all would be Rhubarb, Sea-kale, or early Radishes; that is to say, things that would be likely to reach maturity before the trees got into full leaf, or perhaps Jerusalem Artichokes later on. Some portion of the ground might perhaps be utilised for seedlings of winter greens to be transplanted to some more favoured spot later on, or if the space is a great consideration, it might form the site for a Mushroom bed, or even a hotbed for Cucumber frame, though I would not recommend it.—J. V. A.

4131.—**Nicotiana longiflora.**—I sowed a packet of seed of this on July 19, 1880, in a pot of sandy soil, and covered it with a pane of glass, and placed it on a shelf in a Vinery. From the 7d. packet of seed I have eighty-one nice plants. I potted them first into 3-in. and then into 5-in. pots, using leaf-mould, loam, and common yellow pottery sand (almost any kind of sand will do). They have been kept in a heat of from 40° to 45° in a Vinery, and at the present time are looking very well. They gave me a lot of bloom, which was delightfully fragrant, especially at night. They are now beginning to bloom again. I may say that they suffer a little from the attacks of the green fly, but this is cured by fumigating.—H. SOWTER.

4160.—**Lettuce in Town Gardens.**—I expect "F. C.," who is evidently an observant gardener, has made the mistake of planting the Lettuce under Apple trees. It is very difficult, I might almost say impossible, to succeed in growing a good Lettuce in an ordinary London garden. I was discussing this point with an old gardener one day, and he summed the difference in growth of vegetables between London and the country in a very pointed way. "D'yer see this, sir?" said he, catching up an old Cabbage stalk; "stick this in the ground in the country and you'll have nice young stuff off it; plant it in London, it will rot." To give every chance, sow in the autumn, transplant in the spring into rich soil, at least 9 in. or 12 in. apart, keep them well watered, and select the most open spot in the garden, where they will obtain every available ray of sunshine, and after you have done all this, you will find three-fourths "bolt," and the rest to be without hearts. I would earnestly advise "F. C." not to waste time in the futile effort to raise Lettuces that can be obtained in the greatest perfection quite six months in the year for a half-penny or a penny a-piece. I have written nothing of the difficulty in the early stages of getting enough growth daily to supply the wants of sparrows and slugs.—J. V. A.

4155.—**Substitute for Pea-sticks.**—In my description of this apparatus, figured in

Best way of utilizing Dead Stumps of Tree Ferns.

GARDENING of January 22 (p. 557), the words standard and support are used synonymously. The illustration shows merely one standard, and as it would appear when viewed from the end of a row, the Peas of course being between G and B. Band is a provincial word, signifying cord or string. Let "F. C." in imagination so place himself as to obtain a side view of the standard in the illustration, bearing in mind that it is an end standard. At a distance of 2 ft. 6 in. from the bottom bar a peg not less than 18 in. in length is driven into the ground; a guy rope or straining cord is then fastened to this peg and secured to the top bar of the standard. This being done to each end standard or support, prevents their being pulled out of the perpendicular by the shrinking or contracting of the tarred band when saturated by rain. I can, from an experience of two summers' use, assure "F. C." that the band does contract very considerably by wet, and that it these straining cords are not adopted the whole row of supports will acquire a leaning position more or less, and consequently an unsightly appearance, and ultimately the whole structure will be very likely to collapse. The band slackens by drying, and when this is the case (if the slackening be very considerable) the guy ropes can be tightened, or a turn of the strands can be given round the nails so as to make them taut. Suppose "F. C." has a garden bed 24 yards across, and he purposes sowing a row of Dr. McLean's Pea and using my standards, he would not sow the full 24 yards, but would allow a space of 2 ft. 6 in. from the foot of each end standard and on the outside for the straining cord and peg, so that his row of Peas would in actual length be 22 yards 1 ft. For this length nine standards placed 8 ft. 4 in. or so apart (an inch or two either way is not material) would be quite ample. For tall growing knds, standards of an approximate height would be required, and in addition guy ropes would be necessary on each side of every standard, in order to withstand strong side winds. The standards for tall sorts, such as Ne Plus Ultra, &c., ought not to be placed more than 7 ft. apart, as the weight of the haulm is something extraordinary.—EBORACENSIS.

4171.—**Plant-stand for Rooms.**—In reply to "Alpha," I think the following particulars will give him all he wishes: Mine stands 3 ft. 8 in. high, 3 ft. long, and 1 ft. 6 in. wide; the box or stand being 5 in. deep and 20 in. from floor, 11 in. of glass, castors being 2 in., brings the stand itself to 3 ft. 2 in., the rise of the roof being 6 in.; total height, 3 ft. 8 in. I bought 4 uprights, 3 ft. long by 1½ in. square for legs, turned up 20 in. from bottom; 1 tie-bar, 3 ft. by 1½ in. square, turned up, leaving 2½ in. at ends for morticing into 2 tie-bars (each 1 ft. 6 in. by 1½ in. square), these left square at the ends for morticing into the uprights, and square in the centre to receive the longitudinal tie-bar. I then got 5 in. by ½ in. pine for forming box; these are let into uprights 20 in. from the bottom (using red lead and putty mixed to make these joints, as glue would not do, on account of the dampness in the soil, &c.). Previous to jointing run a slot from the top of uprights down the insides to ½ in. below the 5

by ½ in. for box; this is to receive the glass when finished. Then nail a lath inside the case on the 5-in. board all round to receive the bottom of box. After putting this together put some wooden pegs into the mortice-joints from the inside of the box; mind you don't let them come through to the outside, or it will make it unsightly. You now fit a strip round the top of the uprights (this is to hold the top or roof of the case) 1½ in. by ½ in. strong. The bottom part is now ready for fitting glass. To make the roof I used 1 in. by ½ in. pitch pine laths, putting four sides together (3 ft. by 1 ft. 6 in.), then 4 pieces (to form the tip of roof) 2 ft. by 5 in. (this is for the open space allowed for ventilation). I then get 4 pieces for corners, and, giving the roof 6 in. rise, should be 11 in. long. They must be rabbeted on each side to receive the glass. You now have the roof (hip style) ready for the moulding. Get 8 ft. 1½ in. deep, and about ¾ in. strong on the top edge; nail this on the roof portion to sit on the stand, and let it lie over the lath (already nailed on uprights) about ¾ in. This will hold the top part in its place, will hide the division between top and bottom, and will answer for holding the glass on the top, and being loose you can lift the top on and off at leisure. You must now get some zinc fret-work to place round the space on the top for ventilation. Get a zinc tray made the size of the box, and 2½ in. deep. You now want it glazing, staining, and varnishing. I used oak stain, one coat, and oak varnish, two coats. The timber (best pitch pine) you can get for about 4s. cut to dimensions 8 ft. 1½ in. by ¾ in. Pitch pine mould (choice) 1s.; turning legs and tie bars, 7 pieces, 2s. 8d.; red lead for joints, stain, and oak varnish, 2s. 4d.; fret-work, 2s. for 6 ft. (I was cheated in this; it should only be 2d. per ft.); 4 rollers or castors (brass), 2s. 6d.; zinc tray for bottom (extra strong) 6s.; best glass, cutting and fitting same, 7s. 9d.; total, 28s. 3d. I may say I have never seen or heard of one of this sort before; of course, if you get it made for you it will cost double the amount.—A NOVICE.

4177.—**Repairing Boilers.**—Get some blacksmith to make you a small pair of clamps, and cover hole with sal-ammoniac and iron filings; then screw up.—WIGAN.

4158.—**Potatoes.**—The largest tubers upon a root of Potato are invariably the worst diseased. The reason is obvious. As the fungus spores travel down the plant stems they are naturally attracted into the strongest sap currents, and these would of course flow into the largest tubers. Further, the largest tubers are proportionately to the smaller ones always the most watery. Deep or shallow planting has little to do with it. We prefer to plant shallow about 4 in. deep, and giving plenty of room between the rows to earth up well. Strong growing Potatoes should have ample space, not less than 3 ft. between the rows. Do you mean by "germs of Potatoes" the top growth or haulm? That they are seen short in market gardens is no doubt due to the fact that the sorts have naturally short tops, such as the Ashleaf Kidney, Early Shaw, and similar early kinds. In the open fields where the late sorts are grown the tops are strong enough. The sorts of Potatoes you name, Victoria and Champion, always have very robust haulm growth; the latter especially is excessively so, and fearfully exhausts the soil, whilst the root crop is not at all commensurate. Magnum Bonum is better than this, although it also has a strong top, but the root crop is invariably good. Neither of these coarse kinds should have raw manures given, nor should the soil be too rich. Deeply tilled, plenty of room, and a moderate dressing of some good artificial manure produces by far the best results, both in crop and quality of tuber. It is not wise to plant too many early Potatoes unless grown for sale. Late kinds crop and keep better, and as a rule are of better quality. The Early Rose is useful for first crops, but there are plenty of better kinds.—A. D.

4160.—**Lettuce.**—When Lettuces or any other vegetable run to seed prematurely it is a sign that a check of some kind has been given. The check may not necessarily be from want of water, it may arise from poverty in the soil, or from standing on it too thickly, and the thinning too long neglected, or in some cases it may arise from inherited debility. The remedy is to sow good seeds thinly on well prepared land. Keep the surface freely stirred and mulch between the plants when hot weather sets in with short manure.—E. H.

4161.—**Onions.**—To obtain Onions like the Spanish Onions the land must be dry and rich, both near the surface and below. It must be made firm before the seeds are sown, either by treading or rolling, but this work must be done when the surface is dry, so that the earth will not cling. The seed should be sown in drills 1 ft. apart and the seeds not covered more than ½ in. deep. The young plants should be thinned when large enough to pull, taking away the small ones, leaving them finally 6 in. apart. In the early stages the soil between the rows should be often stirred, but just before the plants cover the ground mulch between the rows with some mellow compost to keep in the moisture. Soot may be used freely as a top dressing.—E. H.

4178.—**Hyacinths and Tulips for Exhibition.**—If the bulbs are now well rooted, and the crowns starting as they should be, although not yet forced, they might now be put into a gentle warmth, that should begin at 45° and increase to 55° as the plants grow. It is difficult to fix the best time to a day, but if pushing too fast, it is easy to retard them by reducing the temperature a little, and so pushing or checking at will.

4179.—**Propagating Tree Carnations.**—As the Tree Carnation is valuable as a winter blooming plant, it is no sacrifice to top the plants now. There should be plenty of time for them to break and make fresh blooming growth before the autumn. Take off the tops somewhat short, and thus leave as many leaves on the plant as possible to encourage breaking.

4181.—**Plants for Windows in Summer.**—A few scarlet and pink Pelargoniums, Fuchsias, Blue Lobelias, single Petunias in colours, climbing Tropæolums, Ivy-leaved Geraniums, Mignonette, Canary Creeper, Abutilons, and a few similar cheap and easy-growing plants will make window boxes look very gay, indeed, all the summer. The boxes may be filled with these plants about the middle of May. Hardy plants may make a nice show for a month or two, but not longer.—A. D.

4104.—**Salt as a Fertiliser.**—Salt must be used very cautiously in the neighbourhood of fruit trees or bushes. I should not advise more than six pounds to be used on the space named, and this quantity should be equally distributed. Fresh lime is a good insecticide, so also is soot, and these substances may be used liberally with beneficial results.—E. H.

4105.—**Propagating Mulberry Trees.**—Mulberry trees are commonly propagated from layers, although they may be rooted from cuttings, though not with the same certainty. Your correspondent had better take a few little plants; any nurseryman could supply him. If he decides to take cuttings the ends could be stuck in a ball of moist clay, and the tops be packed in dry material such as hay.—E. H.

4108.—**Planting Mistletoe.**—Plant the seeds of Mistletoe about the time the sap rises to nourish them, viz., in March.—E. H.

4093.—**Covering Hot-water Pipes.**—Box the pipes up with boards as you suggest; it will be quite safe. Fill the space up with sawdust or some other non-conducting material.—E. H.

4136.—**Liming Cropped Ground.**—You will do well to leave your liming till you have removed your crops. Then dig as soon as possible, and well mix the lime with the soil, or you can spread it on the surface at the time of planting.—W. K.

4170.—**To make Boots and Shoes Waterproof.**—Melt over a gentle fire and stir together till thoroughly mixed 1 pint of neatsfoot oil, ¼ lb. of mutton suet, 6 oz. of bees-wax, and 4 oz. of rosin (resin). Brush the dirt off the boots or shoes and let them be perfectly dry, then rub in the above composition by the fire upon the upper leather, and also upon the soles until they are completely saturated, repeating this operation occasionally.—BILL-O'-THE-WISP.

4148.—**Heating by Gas.**—If "Beckenham" can depend upon a constant supply of gas at a fairly uniform pressure, he can safely adopt it for heating his boiler, but the boiler must be outside the house. I am just discarding gas, as I find in frosty weather the supply cannot be depended upon, owing to water in the mains, &c.—H. F.

4144.—**Primulas Failing.**—If "Subscriber" will turn his Primulas out, it is quite possible he will find the drainage imperfect, which if remedied and care is taken not to water overhead, he will soon perceive the softening of the leaves checked, which is called "fogging."—W. K.

4098.—**Books on Botany.**—I think "Brook's Popular Botany" will suit Miss V. It is a weekly book, price 2d., containing a coloured plate of flowers and numerous wood engravings each week.—PIMLICO.

4125.—**Cure for Thrips.**—There is no better solution for the destruction of thrips than one made of 2 oz. of Gishurst Compound well stirred into a gallon of soft water. It may be used as a wash or syringed on to the plants somewhat gently. This compound may be purchased from any seedsman in 1s. boxes. The soap you name will do the Vines no harm, but double the quantity of the Gishurst put into water and well worked on the Vine rods will be more efficacious. In applying it the dormant eye buds should be avoided.

4128.—**Paris Daises not Flowering.**—It is most likely that the house in which your Paris Daisies are growing has too damp an atmosphere, or that the absence of sufficient solar light causes the flower-buds to die off. It is easy enough to create warmth, but the absence of solar light cannot be remedied. No doubt as soon as the sun's power becomes greater you will get plenty of flowers.

3879.—**Pruning Rosa rugosa.**—This Rose does not like to be hard pruned; cut away all weakly growths and cut back the strong shoots to about two-thirds of their length. We do not know where the white variety is to be procured, but possibly of some of our leading Rose growers.—J. C.

4073.—**Garden Paths.**—I find that sifted coal ashes are very good for garden paths, though not good looking in colour. Weeds are easily kept under and the paths are always pleasant and smooth to walk on.—H. S.

4070.—**Worms in Pots.**—Pour strong soap water round the plant, and the worms will come to the top.—CLYDESIDE.

4184.—**Potatoes for Seed.**—Your Potatoes will do very well for seed this spring, but should be well exposed to light and air to have them thoroughly matured; the growth that will follow will soon absorb the excess of moisture. It may be, however, that grown under similar conditions the produce will be also watery. In such soil it is bad policy to manure too heavily. We found the long fresh stable manure buried beneath the sets in the furrows to give a drier, cleaner, and far heavier crop than where the manure was dug into the soil, as is customary. Give the soil a heavy dressing of hot slaked lime just before planting.—A. D.

4166.—**Guano Water.**—If the guano is to be applied to plants in pots we would advise a small quantity to be mixed with the soil when the plants are potted; it will be then far more completely utilised than when made into liquid manure. Except for plants that have an abundance of roots, manure water should be used very sparingly; seeds hardly need it at all if the soil be fairly good, but as the plants grow it may be applied somewhat weakly,

4183.—**Liquid Manure.**—The drainage from a pigsty will do for plants in pots, but must be well diluted in dry weather. When there is rain no doubt the runnings from the sty would be diluted sufficiently. Animal manures make a rank liquid, and need to be used with care. It is better to apply it too weak than too strong.

4163.—**Celery for Stewing and Soups.**—There is no better flavoured Celery than Major Clarke's solid red. If bulk is wanted in combination with good keeping qualities for late use, then plant Sutton's Sulham Prize Pink. For an early white take the Sandringham Dwarf White.

4187.—**Petroleum Cask for Liquid Manure.**—If the petroleum cask is well painted both inside and out, it will make an excellent receptacle for liquid manure, and the water from such a cask will have no injurious effects upon plants. I have had two in use for years.—E. H.

4186.—**Destroying Earwigs.**—The way I destroy earwigs in my garden in the spring is to place each night a number of clean cloths or dusters on the flower borders, and the old earwigs with a great quantity of young get into the folds, and I shake them out early in the morning. I am then not much troubled with earwigs during summer.—J. J. C.

4159.—**Turnip Beet.**—The Turnip-rooted Beet is an excellent variety. Sow the first for early use about the first or second week in April, and the main crop in the first week in May. The land should not be freshly manured, unless the manure is buried deeply. Draw the drills about 15 in. apart and thin out the plants to 9 in. in the rows. Have the soil well pulverised, but do not cover the seeds too deeply.—E.

4145.—**Glazing without Putty.**—Refer back to GARDENING Nos. 58 and 61, and you will find my account of glazing without putty, and with which I am still very well satisfied.—H. S. H.

4182.—**Cleansing a Paraffin Cask.**—This is best done by burning it out. Stand the cask up on end, the head being out, and throw in a good handful of lighted straw or shavings; the whole inside will soon be on fire. Let it burn well for a few minutes till the inner surface is thoroughly charred. Put the fire out by turning the cash upside down or by throwing a wet sack over. These casks are much used for water butts and washing tubs. For the latter purpose the head is left in, hard-wood plugs are driven into the tap and vent holes, a chalk line is drawn round the middle and an extra hoop nailed on about 1½ in. each side the line. The cask is then sawn across and the two tubs burnt out.—G. J.

—— Stand the cask, bottom upwards, on four bricks, put some shavings under the cask, and set them on fire. When the cask is well burnt and hot, pull the bricks away; this will put the fire out. Have some pitch ready boiling, then pitch the cask all over. 12 or 14 lb. of pitch will be enough for a 100 gallon cask.—W. YEOMAN.

4098.—**Botanical Books for Children.**—The best book, in my opinion, for teaching botany to children is a little work by Professor Bentley on botany. It is one of the manuals of elementary science, published by the Society for Promoting Christian Knowledge, and can be obtained at any bookseller's.—C. B.

4242.—**Manure for Azaleas, &c.**—*T. W. Y.*—Both the kinds of artificial manure you mention are good for the purpose you name; of the two the latter is probably the best, the other being more suitable for field crops.

4243.—**Garden Marigold.**—where can I get seed of the common garden Marigold? No one seems to grow it now, and the kind I mean is not advertised in seed catalogues.—M. J. L. [We presume you mean the common pot Marigold, which may be had from any good seedsman.]

4244.—**Leaves for Hotbed.**—How should they be treated? Should they be kept dry or put out to rot? [Shake them up into a heap of the form you wish the hotbed to be, and well tread them down. If you can mix a little long stable manure with them, you will get a better heat in the bed.]

4245.—**Last Year's Seeds.**—*A. B. C.*—Yes; they will no doubt grow very well. Sow thickly in case they do not germinate freely, and sow early in case of failure.

4246.—**Verbenas from Seed.**—Will Verbenas raised from seed sowed in March flower in summer?—AGATHA. [Yes.]

4247.—*Amateur, Co. Down.*—Kindly ask your question according to our rule, viz., write each query on a separate piece of paper, and write on one side only. We shall then be happy to attend to them, but we cannot answer a dozen questions all mixed up together.

4248.—**Brewing.**—*G. W.*—You can brew beer for your own use without a license.

4249.—**Daisies.**—*D. S. B.*—You probably mean the variegated double Daisy. Any good nurseryman will supply you. It has often been advertised in our columns.

4250.—**Striking Cuttings.**—Is this a good time to strike cuttings of Pelargoniums, Heliotrope, and Carnations for summer blooming?—HELIOTROPE. [Yes, if you have a warm house or frame, and if with a little bottom heat all the better.]

4251.—**Annuals for Windows.**—I wish to sow some annuals—Nemophila, Dianthus, and such like—in pots for a window facing the south. When should they be sown? Would they be best raised in a greenhouse and placed in the window when fairly started, or raised entirely in the window? Occasionally a fire is lighted in the room.—J. J. [Sow now. It will be best to raise them in the window.]

4252.—**Celeriac.**—*C. M. M.*—Sow in April, in rich soil, in a pan or box, in a frame or under a hand-light. Prick off when large enough, and finally plant out 12 in. to 18 in. apart in well-manured soil. When nearly full grown, draw a little earth over the bulbs to keep them white and tender. We have given several articles on the subject.

4253.—**Paraffin Oil on Seeds.**—Will paraffin oil applied to small garden seeds before sowing injure them in any way? I believe it is used as a preventive against mice and birds for Peas and Beans. I have used red lead, but it is objectionable.—H. [It will not hurt them in the least.]

4254.—**Nemophilas, &c., in Pots.**—*Caxton.*—See article on the subject in this week's paper. Silenes may be grown in the same way. Tropæolum Lobbianum will succeed planted in a window box or large pot. Plant in May or June.

4255.—**Tacsonias in Greenhouse.**—I have a young plant of Tacsonia in my greenhouse growing rapidly, but it has only two shoots. Should I cut off the tops to make it spread?—C. H. [Yes.]

4256.—**Flower-pots.**—In a cast of 90's, 48's, and 32's pots are there 90, 48, and 32 respectively?—X. D. [Yes.]

4257.—**Old Seeds.**—I bought seeds from a good house last year, and did not use them all (Balsam, Primula, Marigolds, Dianthus, Œnothera, &c.). Are they to be trusted for this year?—X. D. [Yes; sow rather thicker than usual, and sow early in case of failure.]

4258.—**Telephone Pea.**—*Leho.*—This is a large and excellent Pea. It is a tall-growing variety.

Heliotrope.—Mr. Barr, 12, King Street, Covent Garden, W.C.

Small Scarlet Passion Flower.—*Erin.*—To which do you refer?

Bouvardias.—*Lover of Flowers.*—See article on the subject in last week's GARDENING.

Insects in Potting Soil.—*Subscriber.*—We would not use the soil till the insects have been destroyed. Put some soot with the soil and turn it frequently.

Fly on Crocuses, &c.—*F. L. S.*—Fumigate them with tobacco smoke, or wash them with soap and tobacco water.

Carnations and Picotees.—We can only refer you to our advertisement columns.

G. H. A.—Wait till April or May and then report progress.

Perforated Flower-pots.—*P.*—Mr. Matthews, The Potteries, Weston-super-Mare, or any maker of flower-pots.

Bladiola.—*T. S. M.*—We do not know what plant you refer to.

Subscriber, Guernsey.—The name of your plant is Hoya carnosa. What do you wish to know about it.

Growing Figs.—*Enquirer.*—If you refer to GARDENING, Jan. 15 of this year, you will find a complete article on the subject.

Names of Plants.—*T. S., Isle of Man.*—1, Pteris cretica albo lineata (fertile fronds); 2, ditto (barren frond); 4, Pteris quadriaurita; 7, Asplenium Trichomanes; 8, Pelloa hastata; 11, Asplenium Adiantum nigrum.——*J. D. M.*—Clematis orientalis.——*Enquirer and Others.*—We cannot undertake to name seeds of plants.——*Marie.*—The leaves look like those of a Begonia, but we cannot tell from such poor material.——*Miss S.*—1, Blechnum occidentale; 2, apparently Polypodium Dryopteris; 3, Davallia dissecta 4, too small to name; ——*H. R. J.*—Sparmannia africana.——*C. R.*—Eriobotrya japonica.——*F. Warr.*—Hoya carnosa.——*E. G. F.*—Plumbago capensis, as far as we can judge from the dried-up condition of the specimen sent. Please put your note in the box with specimens in future——*Zara.*—Epiphyllum of some kind; it wants a warm greenhouse and sandy loam to grow in. Do not give much water unless it is growing fast and flowering.

QUERIES.

4259.—**Mistletoe Seed.**—Where can I procure seed of the Mistletoe? and what is the proper time to sow it?—M. T. L.

4260.—**Manuring Fruit Trees and Roses.**—Will any one kindly tell me when I must manure or mulch my Rose trees which were planted in last October, and were only given enough for their first wants? also if I should treat an old Plum tree in the same way which has borne for the last four years from one to three Plums annually?—M. J. L.

4261.—**Water Lilies.**—I wish very much to grow Water Lilies in a large shallow pan sunk in the ground in my garden, and would like to know where I can procure suitable plants; also if this plan for their culture will succeed.—M. J. L.

4262.—**Gas Stoves.**—I see "Vesuvius" in an article entitled "Gardening Failures" (Jan 29) uses a gas stove in his greenhouse. I shall be glad to have a few particulars of construction, cost, and cost of gas for twenty-four hours.—G. M.

4263.—**Single Delphiniums.**—Will some one please tell me the names, heights, and colours of the best tall single Delphiniums?—F. A. S.

4264.—**Lily of the Field** (Amaryllis lutea).—I should be glad of any suggestions as to the culture of this bulb. I have twice failed with it. It was planted in my lawn and the leaves were carefully protected—F. A. S.

4265.—**Fitting a Coil Boiler.**—I am about to erect a lean-to greenhouse, the inside measurement being 11 ft. 6 in. by 6 ft. 9 in. I have bought a second-hand slow combustion coil boiler to heat it. Will some reader inform me how to fit it up? and whether to put the boiler inside or outside the house?—W. P.

4266.—**How to Put a Damper in a Chimney.**—I should feel oblized if any reader could tell me how I can put a damper in my chimney (which is composed of 6 in. drain-pipes) without taking it down, it being so constructed that to take down a part I should have to take it all down; I want the damper about 5 ft. or 6 ft. from the top of the chimney. The chimney goes up in one corner; the flue, too, is of drain pipes, and I am told they will answer well if I put a damper in.—T. SMITH.

4267.—**Geranium Blooms Falling off.**—I have in a greenhouse, the temperature of which averages 60°, heated by a brick flue, a fine scarlet Vesuvius Geranium, which has twice this winter been covered with flower-buds, but when the latter have got partly grown they turn yellow and die off. Can any one suggest the cause?—P. M.

4268.—**Zonal Pelargoniums from Seed.**—Having given a good deal of my attention last summer to the crossing of some of the best kinds of Pelargoniums, I shall be happy to learn the best and quickest way of flowering them from seed.—T. SMITH.

4269.—**Hyacinths in Glasses.**—I have some Hyacinths in water, some of which have sprouted from the sides instead of, as usual, from the centre. What should I do with them? Also, what must I do with the good ones after flowering? Will they be of any further use, or must I throw them away?—RENRUT.

4270.—**Scented Flowers.**—I shall be glad to have a list of scented annuals and greenhouse plants.—L.

4271.—**Melons.**—Which is the best hardy Melon to grow? and will Munro's Little Heath Melon succeed if grown in a large pot in a greenhouse? I shall be glad of cultural directions, as I have never been able to succeed with them.—L.

4272.—**Gas Stoves.**—"Vesuvius" speaks of a "gas stove with 8 ft. or 9 ft. of 3-in. piping," and evidently a success. I must give up my heating apparatus with hot water and stove, as the smoke is a nuisance to neighbours. I should be glad to know if the gas stove is inside the greenhouse, and what kind, and also the expense, if easy to ascertain. I have pipes and a cistern, and if I could use a gas stove inside the greenhouse it would be very convenient; otherwise, I could have it in the cool house, where the stove now stands. The gas is quite close; in fact within 2 yds. of the greenhouse, which is about the size of the one named by "Vesuvius." The pipes are larger. Any information on the subject of a stove without smoke, and not injurious to plants, will oblige. The stove is only used to keep out intense frost.—LEAMINGTON.

4273.—**Vines in Rooms.**—Will some reader kindly instruct me how to proceed with a Vine? It is in a large pot, and was in full foliage last summer in a room, getting the sun most of the day; it is now like a stick, and the soil appears very poor and dry. When should it be watered? Will it succeed in a similar room? and should it be pruned? Some of the growths are nearly 4 ft. long.—A. W.

4274.—**Glazing Orchard House without Putty.**—Some correspondents recommend, others object to, this. If equally good as putty, it is of course preferable for houses which are to be movable as tenant's fixtures; in fact, they are not practically movable otherwise. But is it equally good? Mr. Rivers says the trees cannot have too much free air. If so, will some one explain how the glass is fixed? Will brads at the bottom and sides of each pane suffice?—C. A. S.

4275.—**House Sewage.**—I have a manure tank for house sewage constructed as engraving on p. 341. Should the liquid from this, which is much diluted with water, be used as pumped up? or should anything be added to fix the ammonia? If so, what? and how?—C. A. S.

4276.—**Coloured Glass for Greenhouses.**—Is there much advantage in using coloured glass, of a green or blue tint, the same as used at Kew, for roofing a greenhouse? and if so, which shade is recommended?—E. P.

4277.—**Paint *v.* Rough Wood.**—For a roughly-built orchard house I am advised not to paint, but to use the wood unplaned. It is stated that the wood will last equally long, and the expense of paint and of its renewal be saved. Is this so?—C. A. S.

4278.—**Planting Late Potatoes.**—Which is the best way to plant late Potatoes?—A SUBSCRIBER.

4279.—**Dividing Orchids.**—Will some one kindly inform me how Orchids are divided? I have both the Cypripedium insigne and barbatum nigrum.—L. L.

4280.—**Mushrooms in Coal-cellars.**—I have serious thoughts of converting my coal-house (a small one) into a Mushroom house, but before doing so I should like advice on one or two points. It is built against the gable end of the kitchen and a grateful warmth is very perceptible from the range on the other side of the wall. The first question is, whether the heat will be too dry for Mushroom culture, and if so, can the dryness be easily counteracted? I should like to know also whether crickets are enemies to Mushrooms, as I have some difficulty in keeping them down in the kitchen, and they make their way through the wall?—ALUMNUS.

4281.—**Mauve and Purple Hollyhocks.**—Is there a real mauve-coloured, and also a bright, purple-coloured Hollyhock, single or double? and if so, what is the names of the double ones?—G. D.

4282.—**Slow Combustion Boiler.**—I wish to purchase a small slow combustion boiler that will only require fuel once every twenty-four hours and that can be depended upon without attention for that time. Can any one recommend me one from practical experience?—H. F.

4283.—**Window Gardening.**—I put some cuttings of Zonal Pelargoniums into 3-in. pots last spring and shifted them in August into 5-in. and 6-in. pots, thinking they would bloom in the winter, but they have never shown any sign of bloom. What am I to do with them now? Am I to let them remain in the same pots as they are? or repot them in the same pots again? I have some old Pelargoniums. When is the best time to cut them down? and when is the best time to repot them? Any instruction relating to the above will oblige.—AMATEUR WINDOW GARDENER.

4284.—**Plants for Greenhouse.**—I shall be glad to know what class of plants would be most suitable for a greenhouse attached to the house 15 ft. by 8 ft., and lofty. It is heated by means of a Calorigen gas-stove, so that frost can be excluded and a moderate heat kept up. More flowering plants have to be renewed from time to time, which is expensive and require re-potting, slipping and changing according to seasons, and this is impossible with the usual suburban gardens from want of proper earth, space, and so on. I want a kind of plant that will look tolerably well through the year. Fuschias and Geraniums I have. Would Lilies be good for the purpose? And can one get a succession of bloom? All bulbs have the advantage of saving stowage, but are, I think, only spring bloomers.—W. T. C.

4285.—**Double White Annuals.**—Chrysanthemum inodorum plenissimum, Clarkia elegans alba fl.-pl., Eschscholtzia californica alba fl.-pl. Are the above worth cultivating to flower in pots in a warm greenhouse in October and November? If so, what is time of sowing and cultivation they require? If not, are there any other single or double white flowers that would flower at that time from seed this year suitable for cut flowers?—L. T. B.

4286.—**India-rubber Plants Frozen.**—During the late frost I had an India-rubber plant in the parlour window, and, although a good fire was kept burning during the day, the thermometer showed it to be a very low temperature in the morning and during the night. The consequence has been that I find the leaves hang down and appear discoloured—brown and darkish, and curled up. I fear this has been caused by the frost. Can I do anything towards its future recovery? I have sponged the leaves with lukewarm water, and given some to the roots; the stem appears alive.—A. R. S.

4287.—**Renovating Ferns.**—I have several varieties of Ferns in my greenhouse which have done very badly this season, although I have treated them in the same way as in other years when they did well. Would it be a good plan to repot them all, shaking most of the soil from their roots? and when is a good time to do it?—ERNEST.

4288.—**Plants for Rockery round a Pond.**—I have made a rockery round my duck pond and would like to plant, in spaces I have left for the purpose, hardy plants of any sort that would grow large and quickly. The spaces are deep and open. Will someone give me the names of some plants that would suit my purpose and the locality—facing south on this north-east coast?—H. G., *Sunderland.*

4289.—**Maggots in Cyclamens.**—I have three dozen of Cyclamens about four years old, which have always done well until this year. I keep them in a greenhouse with about 45° or 50° of heat. I pot them in good leaf mould, loam and sand. Finding the bulbs getting loose, I examined them, and found from six to ten large maggots eating their way into the bulbs, nearly all the roots being eaten away. How can I get rid of them? Also how prevent them in the future?—F. C.

4290.—**Propagating the White Everlasting Pea.**—How and when should this be done?—

4291.—**Geraniums for Bedding.**—I have several dozens of Geraniums stored underneath the shelves in my greenhouse. They are now beginning to grow. When is the best time to take them up, re-pot them, and put them on the shelves to prepare them for bedding out?—GERANIUM.

4292.—**Warming and Ventilating.**—Will "G. S. C.," who writes on this subject in a recent issue, kindly say what are the dimensions of the lean-to which he warms apparently so successfully?—L. S.

4293.—**Clearing Snow from Walks.**—When there has been snow, is it better to clear gravel walks of it or not? I have just been told that frost spoils the walks more than the snow?—A. B.

4294.—**Fence for Espalier Fruit Trees.**—We are going to have an Espalier fence for Apples and Pears. Would it be better to have it of wood or iron?—A. B. [Of iron if you can keep it well painted.]

4295.—**Brewer's Grains as Manure.**—Are brewers' grains useful on flower borders as manure? My garden is a deep, light soil, with a gravelly sub-soil.—F. J. C.

4296.—**Shading Glass.**—How can I make glass pleasantly opaque without making it look objectionable?—SALVIA.

4297.—**Plants for Mixing with Sweet Peas.**—When the ground is fit I intend to sow a good row of Sweet Peas; what other creepers would do well mingling with the Sweet Peas and climbing up the same sticks?—SALVIA.

4298.—**Growing Melons.**—I wish to grow some good Melons in a house about 8 ft. square. The hot-water pipes are only 9 in. below front stage. Would there be room for a box resting on the pipes to grow the Melons in? or how could I manage? The pipes are about the same distance from the walls, which are of wood. The front bench is removable.—A SUBSCRIBER.

4299.—**Australian Seeds.**—Having received the following seeds from Australia, viz., Wattle, or Acacia, Blue Gum, Hurts Pea, some Vines, &c., I shall be grateful for any instructions as to proper management, and also for any information about the growth and flowering, &c., of these plants.—ERIN.

4300.—**Orange Tree in Greenhouse.**—An Orange tree, very weak in pot, has been placed in border of greenhouse. Is it likely to do well there? or is soil, &c., too cold?—ERIN.

4301.—**Pyrus japonica from Seed.**—What treatment is necessary for raising this plant from seed?—ZARA.

4302.—**Agapanthus not Blooming.**—Which is the best time for potting the Agapanthus? My plants root very much, and I fail to obtain bloom.—ROBIN.

4303.—**Sowing Wattle Acacia Seeds.**—How should seeds of the Wattle Tree or Acacia be sown? Should they be steeped in warm water previous to being sown, and how long?—Z.

4304.—**Camellias from Seed.**—Can I raise Camellias from seed on a hotbed? If so, what time of the year, and how should they be treated?—FIM.

4305.—**Annuals.**—I shall be much obliged to anybody who will give me a few hints on what annuals will be likely to succeed in my small garden this year. The soil is very heavy blue clay, with a slight covering of ordinary garden loam. The shrubs have not been planted long, and I should like to know of some showy annuals to sow amongst them to fill up the spaces. I am anxious to have a pretty garden this summer, but I know nothing about flowers. There is a large greenhouse or conservatory attached to the house, but it takes so much fuel to warm it that I have not used it this winter; will it be of any use in raising seeds without heating it in the spring? What am I to do to shade the greenhouse in the summer? Whitewash looks ugly, and I am afraid I cannot get any creepers to grow enough to shade the other plants this summer. I should like to know of a good liquidmanure? I saw the answer to "T." on the subject in GARDENING, January 29, but as I have no stables that recipe will not suit my purpose.—SAPIN.

4306.—**Treatment of Musk.**—I have several pots of Musk, put aside in a cellar last season. What must be done to bring them on to flower well, for in the coming season I have no frame or other means of forcing?—NOVICE.

4307.—**Climbers for Screens under Trees.**—What climbers can I plant to quickly cover the bare stems of trees to form a screen? The tops of the trees are large and spreading, but the bottoms are bare. How should the soil be prepared, &c.?—MATRONLY AMATEUR.

4308.—**Plants Lost through Failure in the Gas Supply.**—Will any reader who is acquainted with the law kindly inform me if I have any claim on the gas company through this supply failing, through the last frost, to heat my greenhouse? I have lost the whole of a valuable collection of plants.—W. W. M.

4309.—**Frost in Ferns.**—I have several Ribbon Ferns, and the frost has effected them. The leaves have quite dried up. Will they ever come round again? or ought I to cut them down? They are now in a small heated greenhouse, temperature 50°.—E. S.

4310.—**White Flowers for Beds.**—Will any of your readers tell me which would make the best white bed: Phlox Drummondi, or Chrysanthemum frutescens (the French Marguerite)? I suppose the Chrysanthemum frutescens, if sown in March, will flower in the summer of the same year.—AGATHA.

4311.—**Rates for Greenhouses.**—I shall be glad if any one will inform me if I am bound to pay poor rates and district rates for a private greenhouse.—J. C. I.

4312.—**Plants for Flower Beds.**—I have five beds on a terrace. Last year we filled them with Sedums, and carried out a sort of carpet bedding, but we thought there was scarcely colour enough. Will some one suggest a few plants that will make a good show for the summer? The situation is rather exposed, and dwarf-growing plants would be best. The beds are oval and about 6 ft. across.—A. H. V.

4313.—**How to Grow Cucumbers.**—In answering "E. H.," I think I had better give a description of my greenhouse, and he will be able to advise me better. It is a lean-to facing N. and N.W. It is 11 ft. long and 8 ft. 6 in. wide. It stands 6 ft. 6 in. high in front, with a rise of about 2 ft. at the back. The door is in the end, and a window is fitted in the top corner to act as a ventilator. I have fitted three shelves on the wall side, which I intended for French Beans. I have also erected a wooden stage 4 in. below the front glass. The heat I obtain from a furnace, built in the end next the door; drain pipes form the flue; I can get the temperature up to 70° at night, and a great deal higher in the day. The pipes run under the stage. I should like to cut Cucumbers by the end of April.—T. BOX.

POULTRY.

THE HATCHING SEASON.

Now that the weather is somewhat milder, and eggs more plentiful, I would advise those amateur poultry keepers who intend to rear a few broods of chickens, to commence operations at once, as chickens hatched now will thrive well, mature early, and the pullets will commence laying in the autumn and continue throughout the winter months; whereas those hatched later in the season will not grow so fast, nor commence laying until the following spring. With those who only keep a non-sitting breed, it will be necessary to procure a broody hen, which can generally be obtained from those who keep the Brahma, Dorking, or Cochin fowl. A sitting box should be in readiness, which can be made of any rough material; those which I use are made of packing cases, or boxes purchased for a few pence at the grocers; they are about 16 in. from back to front, 20 in. high, and 16 in. wide; the fronts are made with a fixed board at the bottom on which is hung a small door, which when closed reaches within 1 in. or so of the top, thus leaving a space between the top of the door and the top of the box to admit light and air to the sitting hen. Place a turf or some mould at the bottom of the box, make the nest of hay or soft straw, and place the sitting box in a quiet outhouse. When sitting, the hen should be taken off the nest regularly every morning and placed in a coop to feed; care, however, must be taken not to keep her off long enough for the eggs to get cold, especially on frosty mornings; ten minutes each morning will allow her ample time to feed, and do no injury whatever to the eggs. When the chicks appear strong enough to leave the nest (which they should do twenty-four hours after hatching), let them be placed in the driest, warmest, and most sheltered spot, if possible near a nice Grass run where plenty of worms may be found. See that they are fed on wholesome food five times a day, but never give them more than they will clear up at each meal. For the first few weeks I prefer feeding them on oatmeal, Spratt's meal, bread crumbs, rice, groats, and a little wheat; boiled Potatoes and scraps from the kitchen should also be used; the more variety the better.—POULTRY MANAGER.

Poultry not Paying.—For the information of one who cannot get his fowls to pay I give the following: I get from the provision dealer bacon cuttings (the cost is 10d. per stone), boil them to a jelly, mix with Indian meal, boxings, and Potatoes or their peelings; this I give hot as their first meal. I also use to the above Brown's aromatic compound; 1s. a tin. In the afternoon I give them Indian Corn and rough Barley mixed; cost 1s. 2d. per stone. My hens have a Grass run, but I also give them Cabbage leaves, which they eat readily. Give them plenty of old lime or burnt oyster shells to pick at, and do not forget the dust bath, as it helps to keep the fowls healthy and free from vermin. Since I have used the above my hens are laying better, and appear to be more able to stand the cold than heretofore.—E. T.

Keeping Poultry.—I have the run of a large brick-yard and meadow, and should like to commence to keep poultry (fowls, ducks, and geese). Will some kind reader please inform me how I ought to begin, and how I can best make it pay? Which of the above named will pay best?—R. C. M.

Diseased Fowls.—Will some one kindly inform me what is the matter with my fowls? They are affected in one eye, and the mouth is all over dried matter in lumps. They have plenty of space both inside their house and out. What can I do to remedy the evil?—R. W.

Treatment of Pea Fowls.—Will some one kindly advise as to the treatment of pea hens when they begin to lay? I find mine suffer from being egg-bound, and we have lost some from this cause. What food should be given them?—L. FRITH.

Temperature for Hatching Eggs.—Having, though now many years ago, had some experience in egg-hatching with an hydro-incubator, we were always very particular about keeping to about 104°. I do not say that we never went lower, but if we did the eggs were spoilt, and if higher, we were likely to have baked chicks. Our trays held 100 eggs, and providing they were all fertile ones, and which you can easily tell after three or four days, we could reckon on having ninety or ninety-five successfully hatched. Once a day the trays were taken out, the eggs turned and wiped with a damp yet warm cloth, taking about 20 minutes.—A. M., *Charlton.*

Fowls in Confined Spaces.—I have a yard about 14 ft. square in which I am desirous of keeping a few fowls to supply me with eggs. I could build a fowls' house in the corner, and make a run 3 ft. wide all round. Will any one who has had practical experience under similar circumstances kindly instruct me how to commence? What kind of fowl will be the best? Also should I get a broody hen and a sitting of eggs? or buy what pullets I want? How many could I keep in such a place? The run would be about 10 ft. long after I had built the house and 3 ft wide. The yard gets very little sun, but it is light and open. Is this a drawback? Any practical hints will be welcome.—S.

Leghorn Fowls.—Can any reader give me any information as to the merits of Leghorn fowls. Do they thrive well in confinement? Also are they good layers? and are the white preferable to the brown? I should like to have the practical experience of some one who has kept these fowls.—COCKEREL.

Poultry Farming.—I have got half an acre grass land, which I could enclose with hurdles 3 ft. high. I want fowls that will not fly over; if they did so they would be in my neighbour's cornfields, and that would make things unpleasant. If I was to get Cochin China or Brahmas, could I keep them enclosed? or can any other breed be recommended?—W. B.

Best Fowls to Keep.—In answer to "F. C. W. R.," I should suggest light Brahmas. I have myself tried all sorts, both in confined spaces and with grass runs. I find the Brahmas are most profitable, and lay the best eggs. —W., *Sydenham.*

Fowls Plucking each Other.—Will some reader tell me how to prevent my fowls plucking each other? I have twelve in a run of 20 ft. square. I give them flesh meat in the shape of greaves; and raw turnips now I cannot get green food. They are fed twice a day; hot pudding in the morning, and corn in the afternoon. I have changed the cocks three times, as they begin plucking him first. Any hints will be welcomed.—E. WILMOT.

BEES.

Bees in Winter.—"D. R." must feed his bees as soon as the frost and snow is gone, but until then stop up the entrance, or he will lose many, for if they get out in this severe weather not many will get in again. In September he should have fed them more liberally, seeing they had to make comb as well as to provide a store of food for the winter. Not less than 28 lb. or 30 lb. of syrup should be given in such a case. In future, I would recommend him to super and not nadir; both bees and keeper will be better pleased.—APIARY.

—— These last few days since the snow has been lying thick on the ground my bees have flown out of their hive, settled on the snow, and perished from the cold. Can any one tell me the reason of this? The sun, from about eleven o'clock till three, is very warm, and shines full upon the hive which faces due south. The stock was a very strong one, and I was told when I bought it in the autumn that it would require no feeding.—HASTOE.

Bee Keeping.—Will any practical keeper kindly oblige with the name of a thoroughly good and exhaustive work on bees, with publisher's name? Also the best proved form of hive, and where to be obtained?—MELITUS.

AQUARIA.

Stocking Aquarium.—First get some river sand and scald it to kill the filth, and wash it well with cold water; then put the aquarium to a desired depth, say 1½ in., on a flat bottom. Then plant in the centre Nymphæa alba or Nuphar lutea; round the sides Fountanalis antipareca, Myriophyllum spicatum, Hottonia palustris, and any of the Charas, but plant the largest next the window, to shade the light. Round the centre plant Vallisneria spiralis, Caryophyllum demersum, Helosciadum nudiflorum, and Potamogeton crispus. The following, as they float, make a good addition to the former. Utricularia vulgaris, U. minor, Hydrocharus morsus ranea, Stratiotes aloides, Lemna polyrhiza. The last named, with its numerous roots, adorned with a rich purple hue, underneath their shady leaf, which makes it a most esteemed plant for the aquarium. I would not advise anyone to put more than three small fish along with four snails, in a 12-in. aquarium, as both fish and snails, in my opinion, make an aquarium unsightly. I may here ask, what is there more pleasing than to watch the movements of the Water Spider (Argyroneura aquatica) springing to and fro through the openings of a well established and planted aquatic forest?—J. J. N.

4012.—**Making an Aquarium.**—Can any reader give me instructions how to make an aquarium? Can the glass be fixed in such a way that the water will not come in contact with the wood? and is there any special putty required? Any information will be thankfully received by FISH.

HOME PETS.

Insects in Birds.—From "Myra's" description I should say her Virginian nightingale has red mites; this is very common in cage birds. If "Myra" examines the crevices of the perches in its cage she will probably find them full of mites, as they generally attack the bird at night and remain during the day in the perches and corners of the cage. Put the bird in another cage and then remove the perches, pour boiling water on them, and let them remain in the water for a short time; do the same to the cage and tray. Boiling water is the best thing to destroy these insects. A little of Keating's insect powder might be put on the bird; it will not harm it; I have often done it to my birds. She must take care the powder does not get into the bird's eyes. But I think that the mites will be found in the cage, and only come to the birds at night. Repeat the process of boiling the cage about every six months; give the bird a bath every day, as these birds delight in washing. I have one which comes out of its cage, flies about the room, and takes its bath in a shallow pan. I have had him three years; they are most intelligent birds, and get very tame.—F. T.

Love Birds.—I brought my love birds from Madeira seven years ago, and they are quite well and lively now; I keep them warm and out of draught in winter. The cage is a small waggon-shaped wire one with wood bottom; seed boxes outside; in size about 10 in. by 7 in.; cost 4s. 6d. at a cage shop. In the winter the cage is covered over at night with a flannel covering, the perches are kept dry, so is the cage, cleaned daily, and fresh bird sand put in. As regards food, I give canary seed and water daily, and in summer a little watercress.—C. J. F.

Preserving Skins of Birds.—Scrape and clean your skins and then rub over them the following arsenical soap: To 4 lbs. of white curd soap add one pound of arsenic and 1 oz. of camphor. Cut the soap into thin slices and dissolve in one pint of water. When the soap is melted add the arsenic and camphor, stirring all well together, and boil again till a thick paste is obtained. Pour into jars while hot, and when cold tie down carefully with bladder. This will keep for years.—J. MARTIN.

Changing the Colour of Canaries.—I should advise "Mervyn" (page 518) not to try cayenne pepper for darkening canaries, as in a year or two it kills them; the only way to make them rather darker is to give them plenty of Rape seed, mixed with canary seed, boiled carrot, and now and then yolk of egg, boiled hard. But there is no means of healthily changing the colour of a light canary.—P.

Thrush not Singing.—I have no doubt that "Dolly" will be able to procure a "bird organ" of a new kind in the Lowther Arcade, Strand. The prices range from five shillings. I have known birds to be completely trained to sing by means of such an instrument, but cannot say how far it would succeed with one which had discontinued its song. The cage should be covered with a non-transparent cloth when the organ is used, so as to concentrate the attention of the bird upon the sounds.—SYMPATHISER

GARDENING
ILLUSTRATED.

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FINE-LEAVED GREENHOUSE PLANTS.

MANY who only possess a cool greenhouse are under the impression that there are comparatively few fine-leaved plants that they can grow, supposing that most of these require a stove or intermediate-house for their cultivation; yet this is by no means the case, as there are numbers of handsome variegated-leaved plants, in addition to those with green foliage, that vie in their elegance of form, or the beautiful colours of their leaves, with many from tropical countries. Amongst the most beautiful of the variegated-leaved subjects suitable for a greenhouse is the Japanese Eurya latifolia variegata, a plant almost hardy in the south of England, but particularly suited for greenhouse culture; the centres of the leaves, which are about the size of those of an Orange and similar in substance, are bright green, margined with white when fully matured, tinged with red whilst young; the habit of the plant is not unlike that of Croton variegatum, to which it is quite equal in appearance; it is easily grown, succeeding well in either peat or loam, to which a moderate amount of sand has been added. Drain the pots well; as it is a free rooter, care must be taken that it never wants for water. The plant is of a naturally pyramidal habit, branching freely without much shoot pinching. It is little subject to insects, but should be syringed freely with clean water once or twice a week during the growing season to keep it free from red spider, which will sometimes attack it. Whilst small it is a capital plant for a sunny window. The gold and silver variegated forms of Aralia Sieboldi grown to single stems are handsome plants; they have ample palmate foliage, thrive well in any ordinary soil, and are best raised from cuttings taken off with a heel from plants that have been headed down; they strike readily at any time of the year when procurable 5 in. or 6 in. in length, inserted in small pots in sand, kept moist, and covered with a bell-glass in a little heat. A. reticulata is an elegant-growing, handsome-leaved species, of much more slender habit than the preceding; it does well in peaty soil, not requiring so much root-room as the above-mentioned kinds. Aspidistra lurida variegata is an evergreen plant that attains a height of 2½ ft.; the leaves are lanceolate in form, stout and persistent, marked longitudinally with broad bands of green and white in about equal proportions; it is easily increased by division of the roots at any time when not in active growth; it will succeed with the simplest treatment in ordinary garden loam. It is one of the best room plants, the foliage remaining in good condition in an ungenial atmosphere longer than most plants; when so used it should be syringed and sponged occasionally to free it from dust. Coprosma Baueriana variegata is another easily-grown variegated plant of a somewhat soft-wooded character; for decorative purposes it looks best grown up with a single shoot tied to a neat stick, stopping it from time to time to induce it to break outside branches, which also occasionally should have their points nipped out to produce a sufficiently compact habit; it strikes best from comparatively soft young shoots, produced from branches that have been stopped, taken off with a heel, inserting them, half-a-dozen together, in 4-in. pots in sandy soil in a little warmth, kept moist and covered with a propagating glass; any common soil, to which has been added a little leaf-mould and sand, will answer its requirements. Phormium tenax variegatum (variegated New Zealand Flax) is a tall-growing, evergreen, herbaceous plant, with leaves not unlike those of the common English Iris; they rise to a height of 4 ft. or 5 ft., and are striped longitudinally with yellowish-white over about one-third the surface, the rest green. From its erect habit of growth it looks well mixed with Pelargoniums, Fuchsias, or other ordinary greenhouse plants, for which purpose it is much better confined to moderate-sized (say 8-in. or 10-in.) pots than when grown in masses. It is easily managed, succeeding perfectly in loam, to which add a little leaf-mould and sand; it is increased by division of the roots, which operation should be performed before the growth commences in the spring. Amongst various other handsome green-leaved subjects suitable for greenhouse decoration may be named Acacia lophantha, a plant with elegant Fern-like leaves, which may be grown to a very large size, but for the purpose under consideration amateurs will find it much more useful confined to a single stem in pots from 6 in. to 8 in. in diameter; it is one of the freest of free growers, doing well in either sandy peat or loam; it can be increased from either seeds or cuttings put in now in a hotbed and kept on growing through the autumn. Aralia crassifolia, A. leptophylla, and A. quinquefolia are all handsome plants; they, too, look the best confined to a single stem, as the leaves are of a persistent nature. If kept clear from insects they will remain fresh down to the base of the plants until they have attained a height of from 3 ft. to 5 ft.; they are not quite so free to strike as some things, but with these, as almost everything else that does not root readily, amateurs will succeed the best by making cuttings of the young shoots that break after a plant has been

GREVILLEA ROBUSTA, AS GROWN BY BECKWITH FOR MARKET.

partially cut down. When these are removed entire from the old wood that has produced them, that is, taken off with a heel, as is understood by this process, few will fail to root; put in small pots, kept warm, and a little moist, and covered with a propagating glass, they will make good plants in a single season. Dracæna indivisa is a plant of large growth, but one of the most elegant subjects in existence, suitable for occupying a central position in a greenhouse. If small plants be obtained in spring, and moved on into larger pots as they require it, they will go on for years until they have attained a height of 8 ft. or 10 ft. Evergreen plants of this sort must never be allowed to want for water at the roots. This Dracæna should be well syringed on both upper and under sides of the leaves once a week during summer, to prevent the attacks of red spider, to which it is somewhat liable, and which, if allowed to gain a footing, will soon affect the bottom leaves, so as to make the plant bare at the base. Grevillea robusta, which we now figure, is a Fern-like plant of the most elegant description, and will succeed well in every way, both as to propagation and after management, if treated as recommended for Aralias. It may be also readily raised from seed sown in heat, and potted on in good rich soil. The seed, however, must be new, or it will fail to germinate. This Grevillea is an excellent market plant; it is grown in large quantities by Messrs. Beckwith & Sons, Tottenham, who sent us the plant from which our illustration was prepared. The plant in question was about 3 ft. high, well clothed with large green Fern-like foliage, and it was in a 6-in. pot.

FRUIT.

STANDARD BLACK CURRANT TREES.

For the information of the uninitiated who are wishful to produce large fruit for show or table, the following method for rearing young Black Currant trees may be useful: Eight years ago a friend presented me with half-a-dozen young Black Currant trees. The stems had a Vine-like tendency, and grew long and wiry. They were immense croppers, both for quantity and size of fruit. Our garden had a south aspect, and the soil was light and friable; and as Black Currants require plenty of strong nourishment, to supply this want we gave the trees several barrowfuls of strong cow manure, completely covering the roots for 3 ft. round each. The result was a prodigious growth of new wood and a heavy crop of fruit. Having been so far successful, it occurred to me that an old gardener some time before had said that if I took the stoutest stems of one year's growth and stripped them of the whole of their buds, except about three or four at the bottom and five or six at the top, taking care not to injure the bark any more than could be helped, I could rear a standard Black Currant tree that would produce larger and bolder fruit. I tried the experiment with very satisfactory results. Many people have complained of disease in Black Currant trees—what seems to be the result of inoculation by insects, producing little bolls on the stems where the bloom-buds should be, and taking all nourishment from the trees. In no instance do I remember the standards suffering from this disease, though my Black Currants that come up several shoots from the one root, or grown in the ordinary way, are suffering at the present time. There appears to be no remedy for this disease but extermination and commencing again with clean young plants. To keep Black Currant trees in good bearing condition, there should be a good supply of strong manure applied to the roots. Especially beneficial also is liquid manure from either stable, shippon, or ashpit. A good screen may be made of Black Currant trees by nailing them to a row of stumps and rails in the direction required; and in this position, especially in the centre of a garden, they will do well. Great care must be taken to thin out all old and poor branches, as these impoverish the young bearing wood. If any inducement need be held out for the encouragement of the culture of this delicious fruit, it is only necessary to say that it has many medicinal properties, not the least of which is as a cure for a severe cold; and as a jam there is perhaps nothing to surpass it. To propagate the Black Currant it would be well to put the slips in the ground not later than March, or at the end of summer, say end of September. Avoid as much as possible digging about the roots, and rather spread or pour the manure on and about the roots. No digging should be done after September or October, and that more to clear away grass roots and weeds. Should any of the small fibrous roots be cut, they will then have time to grow by the following summer. And, in conclusion, I should like to say to all who are about to plant young trees, get the best kinds known, consult any first-class nurseryman, and do not be afraid of paying a little more for the better class of plants. As in breeding fowls, so in growing any kind of fruit tree, to pay a little more at first is cheapest. Black Currants grow well near a drain, or ditch, or sewer. — Cough Quietus.

Scale on Vines.—I was troubled last spring with a quantity of scale on my Vine. I bought ¼ lb. soft soap and ¼ lb. of sulphur and thoroughly mixed them together, and then with a soft brush and a little warm water made a strong lather and brushed it well into the rods, and I have not seen the slightest traces of scale since. I always keep some of the mixture by me, as I find it a good remedy for many pests.—J. J. C.

Top-dressing Fruit Trees.—We had some Peach trees in a house which made very weakly shoots, and their general want of vigour indicated a deficiency of nourishment at the root. Early in spring all the soil was removed from the roots for more than 1 ft. below the surface. For this was substituted a rich mixture of loam, cow manure, and old lime rubbish, one barrowload each of the two latter being mixed with three of the former. Shortly after the trees began to grow it was evident that they were taking advantage of the fresh material, and by the end of the season the wood was three times stronger and healthier than it was at the end of the previous one. These trees are more promising than any of the others, and we are so well pleased with them that we have done every one of our wall trees in the same way this winter.—C.

Pruning Gooseberries.—I never prune Gooseberry bushes until they are bursting into leaf, and yet we always have heavy crops. It is a good practice to get work as forward as possible during the winter; but some discretion should be exercised as to the right and wrong subjects to be dealt with, or more harm than good may ensue. As regards keeping bullfinches from destroying buds, the best remedy is powder and shot. All kinds of guards except close netting are useless.—J. H.

VEGETABLES.

How to Grow Horseradish.—This, being difficult to kill or eradicate, is generally relegated to some out-of-the-way corner, and seldom has justice done to it in the way of cultivation. There is always a demand for it, and in deep, light soil, if well managed, it would prove a paying crop. The land should be deeply worked, and if manured the manure should be buried deeply. Make holes with a crowbar in rows 18 in. apart and about 12 in. or 15 in. asunder in the rows; the holes should be at least 16 in. deep, and the sets should be dropped into them. The latter should consist of stout pieces of roots 3 in. or so long, either with or without the crown bud, and the holes should be filled up with fine soil or shifted ashes, the latter being preferable. Another plan is, when taking up the crop, to save all the long slender roots that are not large enough for use, to trim off all the small fibres, make holes with a crowbar of sufficient depth and at an angle of 45° or so, and drop the roots in so that the crowns are beneath the surface, filling in with ashes or burnt earth. Planting the roots in a slanting direction enables the cultivator, if he feels disposed, once during the growing season to take the crown of leaves in his left hand and draw the root up, so that the pressure is brought to bear in that direction in which it has been planted; the strong fibres that generally start away just under the surface may be cut off, and the crown of the plant returned to its former position and pressed down with the foot. Plant any time in March.

How to Grow Cucumbers.—To grow fine Cucumbers, the plants require to be grown under glass, either in low flat houses, pits, or in frames placed on hotbeds. A low house or pit, heated by means of artificial heat, will be found the most useful, especially in early and late forcing, as at that time they require a deal of attention, as their enemies are more common, and artificial fertilisation will have to be more practised. In summer their culture is far less difficult, as mildew and other pests are less common. They do not require an exceedingly fine soil. Some turves chopped up, leaf-mould, loam, and some well-rotted manure mixed up makes a very suitable compost. In raising the seeds it is a good plan to treat them the same way as Vegetable Marrow seeds are planted in pots—that is, placing two seeds in a small pot, placing them in an upright position. When they begin to show the rough leaf, pull out the weakest, leaving the strongest plant to occupy the pot. By raising the seeds in this way, one shift more will be sufficient until finally planted out. Thus treated, the seedlings do not experience the slightest check; keep them well up to the glass, in a temperature of 70° to 75°, but when in full growth a higher temperature may be allowed; stopping and tying must be attended to, and over-cropping must be avoided; keep a moist atmosphere, and never allow the plants to get dry or flag from want of water.—Kirkton.

Mustard, Cress, and Radishes.—Mustard, although not required in such quantity for salads as Lettuce and Endive, is still very useful, especially in the winter and early spring. Its cultivation is so simple and well-known as not to require further notice than to say that at all times of the year it should have a rich soil, which not only grows it much crisper, but less hot and pungent. In the winter, in forcing, the soil should be changed in the boxes every time fresh seed is sown. Cress is not so much in request as Mustard, but some people like the flavour of it a little. It is not so easily grown as Mustard, but requires similar treatment; the plain-leaved is the best. Radishes are indispensable through

French Olive-shaped Radish.

a great portion of the year. These should be sown out-of-doors in sheltered situations at the close of the year in dry, well-manured soil, the seed being covered with litter, which is allowed to remain on until the seed has vegetated, when it must be taken off every mild day and replaced in the evening. As soon as the first sowings appear above ground make a second, treating it similarly; the third sowing will possibly not require covering with litter. The earliest sowings should consist of any of the long early kinds, and may be followed by the scarlet and white Olive-shaped varieties, which, when the seed can be had true, are far superior to either the Turnip or the long varieties—that is, when they are grown in rich soil, with sufficient room to prevent their being drawn, and with plenty of water in dry weather, so as to bring them on as quickly as possible, for this is the principal point in the cultivation of a good and tender Radish. To have them in good order they must be sown every ten days through the summer, and in hot weather the seed will require plenty of water to make it vegetate. At the commencement of the year a sowing should be made on a slight hot-bed. The frame, unless a very shallow one, should be filled up inside with the fermenting materials to within 1 ft. of the glass; on this should be put 6 in. of soil, in which sow the seed. It is necessary to keep them thus near the glass, because, if severe weather should follow when they are up, enough air cannot be given to prevent drawing, which spoils them.

To avoid this, they must be thinned whilst small, so as to allow them sufficient room; a successional sowing in frames should be made every three weeks, until the middle of March, after which the outside crops will come in. To succeed the outdoor sowing in the autumn it will again be necessary to resort to frame culture, sowing every month from the middle of September to December; for these early and late sowings, either in frames or the open air, the Olive varieties are little inferior to the short-topped, long-rooted kinds. My own practice has been to mix the seed and sow both together. Where there is no convenience for growing Watercress, the American or land Cress will be found useful in the spring, making a couple of sowings the first and third weeks in September, and putting the seed in a dry warm border in rows 1 ft. apart, with a little Corn salad, which may be similarly treated as to soil, situation, and distance apart.

MY GARDENING FAILURES.

"Disappointment" (Jan. 8) is not necessarily an ass because he has made a few failures in his first attempts at town gardening, very little instruction in that branch of horticulture being available for those who may desire it. The smoke, dust, gas-laden, and exhausted air of a crowded town are unavoidable, but curable causes of failure are mainly two: a bad state of the soil, and an unsuitable selection of plants.

Various causes combine to render the soil of a town garden liable to become sour and stagnant, and unfit to support vigorous plant-life; and this can only be remedied by frequent turning over and exposure to frost, air, and sunshine, and the addition, as often as possible, of fresh, healthy soil from a country district.

The soil in the greatest part of the northern and southern districts of the metropolis is a stiff, intractable clay, which requires a great deal of preparation and several years' cultivation to make it suitable for most garden plants; and when the soil has been cultivated, either as old garden gravel or as market gardens, the whole of the surface soil which is of any value is often carted away and sold before building operations are commenced.

Where that has been done a fresh soil must be provided before anything can be expected to succeed; but if the soil is sweet and good, and the situation open and sunny, and not too much enclosed by buildings, a good display of flowers and plenty of healthy foliage may easily be obtained. Scarcely any of the flowers with which Londoners are familiar in a cut state can be grown, and as few of those which are usually offered for sale as growing plants; but many showy things will produce respectable flowers, and a few can be grown as well as in the open country. One difficulty in a town garden is

Manure.—Artificial manure does not answer so well as well-rotted stable dung, but there is always the difficulty of laying it up to rot. The best way is to keep two frames going, one with fresh manure, and the other half spent, and by the time the heat is entirely out of the dung it will have almost ceased to be offensive, and can be laid up and covered with a sprinkling of earth till required.

In stocking a town garden, reliance should be placed upon those plants which have been proved to do well, and others tried experimentally, and with the full expectation of five or six failures to one success. In buying, observe as three golden rules, never to be departed from: (1) buy all your plants from a good nursery, and one as nearly as possible on soil of the same nature as your own, so that the plants may experience the least possible change in moving; (2) never buy plants in bloom, or with their bloom-buds showing; (3) raise everything you can from seed; there is a considerable amount of adaptability in plants, and it is better to have flowers that an expert or a florist would laugh at than none at all.

As town gardens are usually too deficient in free, fresh air, trees should be avoided; the fences and walls can be covered with Ivy, Virginian Creeper, common Jasmine, and Vines, all of which do well in towns; in open sunny situations, the blue Passion-flower, Wistaria, Laburnum, and the common wild Clematis or Virgins' Bower will all thrive and flower freely. Fig trees also do remarkably well, even in confined situations, and Apple, Pear, and Cherry trees might be grown for their cheerful appearance when in bloom, irrespective of fruit. The common German Iris or Blue Flag is a capital town plant, and there are many splendid varieties of it which would doubtless do as well if tried. In shady nooks Solomon's Seal and the common Male Fern thrive luxuriantly; and for hot sunny corners Aspidistra lurida is suitable. In positions half-shaded the common blue Squill or wild Hyacinth thrives well, and of it there are both white and rose coloured varieties. The Day Lily is a good town plant, and the common Orange Lily will thrive almost anywhere if it gets plenty of sun, with good drainage, and the addition of sand and peat to the soil; the White Lily may be planted in prominent situations; and the Everlasting Pea may be allowed to trail over a rockery, or trained up a wall. Of

Dwarf Spreading Plants, the Periwinkles (Vinca major and minor), both white and blue, may be allowed to trail over a shady border; their flowers are very graceful in form, and last well when cut; the Creeping Jenny thrives well and flowers freely if allowed to run, and Lily of the Valley does nearly as well in towns as in the country. Of

Rock Plants, London Pride, Stonecrop, and Sedum spectabile will answer; and if there is a particularly breezy and sunny spot, white Arabis and purple Aubrietia may succeed in light soils or otherwise if provided with a light soil to root in. The broad-leaved Saxifrages, S. cordifolia and S. crassifolia, look well and often flower, and Tradescantia virginica can be depended upon to produce its deep blue, triangular blossoms; the last does well in an ordinary border, but the Saxifrages are better on a rockery unless the soil is light and well drained. For the back of a border, the Evening Primrose is a good tall plant. Of

Flowering Shrubs, the Lilacs do fairly well, as well as the flowering Currants (Ribes). Of

Florists' Flowers, the Hollyhock succeeds fairly if the situation is not too confined; the Dahlia also succeeds, while the Chrysanthemum family can be grown as well as in the country; the new early-flowering kinds are said to succeed quite as well as the older varieties. Of early-flowering

Bulbs, the Tulip and the Crown Imperial will succeed if the ground is well mixed with peat before planting. Common yellow Narcissus also does fairly well. Of other spring flowers not already mentioned, Daisies, Pansies, and Primroses may be made to succeed with care; the Pansies should be raised from seed. Gladiolus Brenchleyensis and gandavensis will answer in light, rich soil in a sunny place; they should be planted early.

Annuals, especially quick-growing sorts, may be depended on for a show of colour, but the soil for them must not be too rich. Nemophila insignis, Collinsia bicolor, Gilia tricolor, Bartonia aurea, Virginian Stock, Coreopsis and Convolvulus minor, Malope grandiflora, and Godetias of sorts, Clarkias, Sweet Peas, Cyanus or Blue Cornflower, Marigolds (common French and African), and annual Larkspurs, will do in most places. Tom Thumb Nasturtiums make a fine show in a sunny place in a poor soil; where the soil is rich they can be sown in pots and sunk along the borders. Crimson Flax is a good showy annual for a rich soil. Of hardy climbing annuals, Convolvulus major does well in hot seasons, and Tropæolums also do well.

Half-hardy Annuals.—Asters, Zinnias, Ten-week Stocks, and Phlox Drummondi are the most likely to be successful; and Dianthus Heddewigi and Indian Pinks do well in light soils and are very showy. Biennials are apt to perish in muggy weather, and are best treated as annuals, that is, sown in a little heat early in the season, hardened off (gradually accustomed to the outside air, avoiding any sudden change), and planted out as soon as the frost is out of the ground. Treated in this way, Canterbury Bells and Sweet Williams will flower the same season. Antirrhinums flower the first year raised from seed in the same way; they require a sunny place and a light soil containing plenty of lime. Of

Perennials, which are worth trying, those most likely to succeed are the Lilies, Irises, Phloxes, Pyrethrums, Œnotheras, Columbines, Delphiniums, florists' Ranunculus, and Anemones; the last two can be planted as dry bulbs in spring. These all disappear almost entirely in winter, and so escape the evil effects of fog. Nurserymen in the neighbourhood of London, who keep stocks of hardy plants, make up collections of plants suitable for towns, and one of these would be a good investment for an amateur who was determined to master the difficulties of town gardening.

One difficulty in towns is the unhindered ravages of vermin, caterpillars, woodlice, and all the rest of them, which increase and multiply with impunity; in the absence of the whole tribe of insect and vermin-eating birds these must be continually trapped and destroyed in every possible way. Dirty flower-pots filled with straw or paper shreds and Potato parings are good traps for creeping things; slugs and snails can be caught in the same way, the flower-pots being placed along the borders bottom upwards and raised a little from the surface to allow a shell-snail to get underneath; caterpillars must be hand-picked. With regard to

General Cultivation, plants in towns require to be kept moving; it is injudicious to induce rapid growth while there is a chance of frost, but as soon as warm weather sets in they may be set growing if they do not start themselves. Sulphate of ammonia is a good stimulant in the proportion of a tablespoonful to a pail of water. It should only be used when plants show a tendency to hang back. Genuine Peruvian guano is also a good stimulant in about double the proportion to the water, and does not tend to impoverish the soil when used frequently as sulphate of ammonia does. A powerful garden engine is almost a necessity in a town garden; without it it is very difficult to keep the leaves and stems of plants clean, and if allowed to get dirty many become weakened and die.

A Greenhouse is only a vexation unless properly constructed. A regular supply of fresh air, heated before entering the house, must be arranged, as well as ventilators for carrying off the foul air, without creating a back draught. If the air before entering the house is strained through cotton wool it will be a great advantage to the plants. "Disappointment" would seem to have kept his house too close. Plants generally run up tall and weakly if not supplied with plenty of fresh air. Plants in pots which are offered for sale in full bloom in London have usually been forced, and are a source of frequent disappointment to purchasers, who expect them to remain for any length of time in the showy state they are in when purchased. Such plants have been subjected to the most skilful treatment to make them produce a great quantity of bloom at one time, and require to be rested in cooler houses when that is over to recover themselves after the extra exertion they have been put to. A greenhouse should be stocked with young plants from a good nursery, and if ordered all at once from a respectable firm, leaving the selection to them, and stating the nature of the greenhouse and the temperature that can be maintained, a suitable selection will be supplied at a cheaper rate than if the plants were purchased separately. I have recommended peat to be mixed with the soil in certain cases, as it can be more easily obtained in London than leaf-mould or loam from rotted turf, which would answer equally well where obtainable.

With regard to "Disappointment's" particular troubles, failures in purchased plants occur through improper planting; the roots should be spread out as much as possible, and fine soil sprinkled over them, and the soil pressed firmly down and round the plant with the hands; the soil should not be wet and adhesive, and if dry a good soaking should be given to each plant, and no more until the soil is almost dry. I find it a good plan to place an inverted pot over small plants for a few days if the weather is dry after planting, leaving the hole open for air. Autumn is the best time to plant perennials, and they should be put in early. The roots of plants do not seem to push out in autumn, winter, and spring in towns in the vigorous way they do in the country, most likely owing to the blue and violet light, which is the most conducive to plant growth, being intercepted by yel-

low fogs; it is therefore important to have everything well established in the autumn. The last three or four summers have been very unfavourable to the growth of plants in the south of London; owing to the great prevalence of light winds from the north half of the compass the whole of the smoke has been driven in that direction, making the south districts more smoky than the heart of the city. The last winter was likely to kill a great number of bulbs; I have had Tulips killed in less severe weather in much more favourable soil, in a less smoky district than Camberwell, while those of the same lot which survived through being a little sheltered, stood last winter in the country, in a stiff badly-drained soil, and flowered splendidly.

J. D.

TOWN GARDENING.

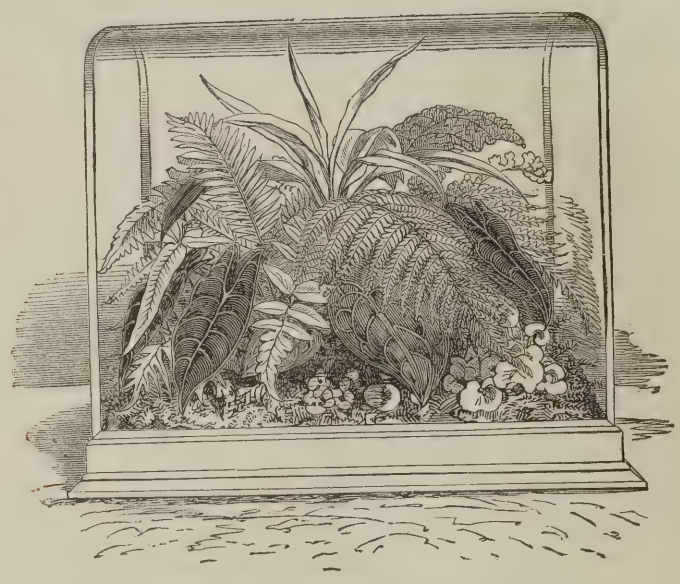
WINDOW GARDENING.

Window Cases.

There is one other branch of window gardening which, though it cannot be indulged in quite by every one, is yet within the reach of most people if they make up their minds to it, and which is, moreover, much the prettiest and most successful arrangement we know of. We refer to the use of window cases. These may be fixed either inside or outside of the sash, but for several reasons (light, saving of room, &c.) are better outside. Being, in fact, a miniature greenhouse, a very large proportion of the soot, smoke, and dirt, that would otherwise be deposited on the leaves, &c., of the plants is entirely prevented, thereby keeping them not only far cleaner and brighter in appearance, but far more healthy and vigorous as well. Moreover, an artificially moist and warm atmosphere can be maintained within a glass case (which is a wonderful advantage), rapid evaporation is prevented, and there are other points favourable to success which need not be enumerated.

It is true that good window cases are expensive to purchase ready-made, but with many people moderate expense is not an object, and some extremely elegant designs can now be obtained. But it is by no means difficult to make a case quite good enough for ordinary purposes, and even if it must be plain, yet if well done it may be neat enough to please even a fastidious eye. Any handy man with a little knowledge of carpentry and a few tools, some strips of red deal, and a few sheets of glass (which only cost 2d. a foot cut to size), can produce a neat and useful affair for a few shillings. The bottom of the case should consist of a strong wooden box or tray, as long and as wide as the space to be filled, and from 6 in. to 8 in. or 9 in. deep. This should be made of the best red deal, 1 in. or 1½ in. thick; upright strips of well-seasoned wood, also 1¼ in. or 1½ in. square, and rabbeted or grooved on two sides to take the glass, should be fixed at the corners; crossbars, also rabbeted or grooved, must be fitted to connect the upper ends of these, and the top should be made sloping at an angle of 30° to 45°. We think that a flat, sloping top looks quite as well as a rounded one, and it is much less expensive. The wooden tray at the bottom should have an inner one of metal, preferably zinc, constructed to fit it exactly, to hold the earth and plants, for, as paint is not admissible inside, the wood would soon decay, and both the metal and wooden tray should have plenty of holes corresponding in the bottom to allow surplus water to escape. It is better to have a short piece of metal pipe soldered into each hole, and running through the wood below, but not projecting much below, so as to keep the wooden bottom quite dry.

The case should be constructed just high enough to meet the junction of the upper and lower sashes of the window frame. Unless it is made with a separate front (towards the room) and a door, the upper rail of the case should not be in any way fixed to the lower rail of the upper window sash (which is of course outside), but only just fit against it as closely as possible, so that the upper sash may at any time be pulled down to admit air into the room. In this way the case will only have the front (outside) and the two sides glazed, and the inner side will be formed by the lower window sash, which, on being pushed up, will afford entrance to the case; or the case may be made entirely separate from the window, with a door on the inside. The former plan is, however, more economical and convenient. In any case, some aperture must be provided at the top that may be opened to admit air. In the plan first described, almost enough will be afforded by pulling the upper window sash down a few inches, as the glass falls back from the level of the rail. This will be seen at a glance, and as a window case does not require a great body of air admitted into it, it will be sufficient, but of course the upper part of the window will be open at the same time.



Window Case of Ferns and Fine-leaved Plants.

Plants for Window Cases.—In considering the class of plants suitable for such glazed cases, it may be mentioned that such things as Pelargoniums, Fuchsias, and others of the same character may be kept in them for some time, and would be preserved in beauty far longer in this manner than if exposed to the air, but could scarcely be continuously grown in such a situation, except perhaps Fuchsias, which would do well with care, but it is preferable to grow such plants as require but a small amount of air, for the more air you admit the more soot and dirt comes with it, so that we advise a selection to be made from the following list, all of which will do well, though they will require some considerable amount of care bestowed upon them in such confined quarters, and under such artificial circumstances. All are effective and pretty, and some extremely beautiful.

s Achimenes, in variety
Aralias (small)
s†Begonias, both tuberous (flowering) and the Rex type (ornamental foliage)
Cephalotus follicularis (New Holland Pitcher-plant)
s*Darlingtonias (Californian ditto)
s*Dionæa muscipula (Venus Fly-trap)
†Dracænas (small)

s*Ferns.*—the most suitable kinds for a case are :—

Adiantum æthiopicum	†Onychium japonicum
† ,, Capillus-veneris	Polypodium plumosum
† ,, cuneatum	Polystichum triangulum
,, hispidum	Pleopeltis nuda
†Asplenium bulbiferum	†Pterio crenata
,, flabellifolium	† ,, cretica
,, monanthemum	† ,, serrulata
Davallia Novæ-Zealandæ	,, ,, cristata
Doodia aspera	*Todea pellucida
,, media	* ,, superba
Lastrea acuminata	s†Gloxinias
,, glabella	†Isolepsis gracilis
Lomaria lanceolata	*Mimosa pudica (Sensitive plant)
,, Herminieri	
Niphrobolus lingua	

Palms.—The most suitable kinds are :—

Chamærops excelsa	Rhapis flabelliformis
,, humilis	*Sarracenias (Side-saddle plants)
Cocos Weddelliana	s Selaginellas
Corypha australis	s†Trichomanes
†Rœllia ciliata	

All those marked with an asterisk (*) will require extra care, and very careful cultivation, and will not succeed more than moderately well even with this, where the air is very bad. On the contrary, those marked † need only ordinary care, being vigorous and robust. The letter s denotes that the plant requires shade from hot sun at all times.

Planting the Case.—In planting the case plenty of drainage must be used at the bottom, over that a layer of Moss, and then put in the soil. A very good compost that will grow Ferns, Palms, Begonias, and most of the plants mentioned may be made by mixing together about equal parts of loam, leaf-mould, and peat, with a fourth part of silver-sand, and crocks or bricks broken up very small in equal portions. It is far more effective in planting a case, especially if of any considerable size, to arrange it more in the style of a rockery, that is, by piling and fitting together in a graceful and natural manner some pieces of roughish stone, to form a picturesquely rugged mass of porous materials in the bottom of the case in such a manner as to leave a number of holes or fissures at convenient points, which may be filled with soil, and the plants selected placed in these. When planted give a good watering, always using tepid water. With care in watering, aëration, &c., for the future, the case will last for years. In time, however, if they live and do well, some of the plants mentioned, such as Palms, &c., though only the dwarfish kinds are enumerated, will attain such a size as to be inconvenient; they should then be removed and replaced with small plants.

Heating, &c.—Of course where greenhouse Ferns, or indeed any of the plants given in the preceding list, are grown, either some means of heating the case must be resorted to in winter, or the plants must be altogether removed to some place where they can receive the requisite amount of heat, though in the summer nearly all those named will do well without any artificial heat, that is, from the 1st of June till the 1st of October. Many handy little apparatuses for heating such cases can now be purchased, and almost any simple arrangement of hot-water pipes, heated by a suitable lamp, or burner, or boiler, would give the desired result. But the heat, though small in quantity, must be constant and regular, or it will be as bad or worse than none. In a large structure like a greenhouse it does not much matter if the fire goes out for a few hours, even in severe weather, as the quantity of water in the pipes, the mass of brickwork, and the contents of the house all maintain the heat for a long time. Where the contents and all surroundings, however, are on such a small scale, it becomes a very different matter, and if the supply of heat be interrupted even for an hour in severe weather serious results will accrue. Yet only a very small amount of heat is needed, and we think that about the best arrangement is a couple of coils of strong tin or copper pipe, 1-in. or 1½-in. in diameter, running round the sides of the case, with the usual appurtenances of air-pipe, tank, &c., on a suitable scale, a boiler holding two or three quarts, or perhaps more for a large affair, and a good paraffin lamp and burner, properly arranged, and constructed to burn eight or ten hours without attention. Even with such an apparatus, however, great care is requisite, especially in the matter of watering; and in actual frost, if the glass is in direct contact with the outer air, and any of the plants within either touch it or approach within two or three inches of it they are very liable, in fact almost

sure, to be injured, so that some protection or covering becomes necessary. Nothing is better than an old soft blanket or rug, or any kind of cloth, if thick enough, would serve the purpose, and it should be spread well over the outside of the case at night, and in the daytime too if the frost holds. A thermometer should be employed, and the temperature should range from 55° to 65° during the winter for most of the subjects mentioned. The heat should be greatest in the daytime, especially on a bright day when the sun is shining, and least at night. If it drops to 50° at night no harm will be done, but it must not be more than a degree or two less than this at any time, and 70° or 75° for a short time at midday in sunshine will be beneficial.

Unheated Cases.—Where the case cannot be heated in any way, and there is no convenience for keeping the plants elsewhere during the winter (if there is, it is better to grow as many of the things in pots as may be, so that they may be removed to their winter quarters without being disturbed), the only alternative is to fall back upon hardy plants. There are many of these suitable, and almost any plant that is found flourishing in damp shady woods or lanes, or near a waterfall or stream, will do well in a case.

Hardy Plants for Case.—Ferns and Mosses should form the principal subjects, and of the former the following will be found the most suitable for a case, especially if small.

*Adiantum Capillus-veneris (Maiden-hair).
Asplenium adiantum nigrum (black Maiden-hair)
,, Trichomanes
,, marinum (Sea Spleenwort)
Athyrium Filix-fœmina (Lady Fern)
*Blechnum spicant (common Hard Fern)
Ceterach officinarum (Scale Fern)
*Cystopteris fragilis (Brittle Bladder Fern)
Hymenophyllum tunbridgense (Filmy Fern)
Lastrea æmula montana (Buckler Fern)
*Polypodium dryopteris (Oak Fern)
,, phegopteris (Beech Fern)
,, vulgare (common Polypody)
*Polystichum aculeatum and angulare (Prickly Shield Ferns)
Scolopendrium vulgare (Heart's-tongue Fern) var. crispum multifidum
*Trichomanes radicans (Brittle Fern).

Those marked * will need very careful cultivation to do well. Other kinds of Ferns, such as the common Male Fern, Lastrea Filix-mas, the Osmunda, and other large growing kinds may be used in a small state, or in a large and tall case, but in the majority of cases they are unsuitable from their great size. The lovely New Zealand Fern Todea superba has been proved to be hardy under glass, and a plant or two may be tried, but care must be taken to procure one that has been used to cold treatment, and very great care will be requisite in cultivation. This, however, will be amply repaid if the Fern does well. A plant or two of small-leaved Ivy does well in a case—at least in winter, and is a great relief to the monotony of Ferns; the common ground Ivy is as good an one as can be had for such a place, though some of the silver variegated kinds are very handsome. The almost endless varieties of Mosses to be found in our English lanes and woods are another valuable resource; some of the Lycopodiums or Club Mosses are really handsome and effective. Several of the Equisetums, or Water Horse-tails, are effective and easily grown. Three of the most suitable kinds are E. palustre (the Marsh Horse-tail), E. pratense (the Shade Horse-tail), and E. sylvaticum (the Wood ditto). The lovely little Sundew, too, or Drosera, that is so common on marshy heaths in Surrey and other counties, forms a very interesting subject; so does the flowering Buck Bean; and, in fact, almost any of the numberless plants and flowers that are to be found, and evidently luxuriate, in moist and shady situations, will be suitable for the town window case, and an expedition into some part of the country where these situations abound will be amply repaid.

We have sometimes seen the case so arranged by having the tray at the bottom made somewhat deep so that a foot or so of water could be introduced, and so form a kind of aquarium combined. Rough stones or rocks were built up at the sides or ends till above the surface of the water; in these and amongst them interstices were provided, which were filled with suitable soil, and plants, Ferns, &c., placed in these; while a few gold fish, or even sticklebacks, and water plants in their natural element below the graceful arching leaves and fronds above, made a most charming picture. All this can be done in any London window, though not without trouble, and a good deal of it, too, in the first arrangement, as well as some expense; but when once done, and done well, it will last in beauty for years with proper attention and management.

In summer, if the window is at all sunny, some shade must be provided for nearly all the subjects mentioned. Some light material, such as calico, is suitable, and it should be arranged on a roller, so as to be easily brought into use, and be drawn up again when required.

The annexed woodcut represents a Fern case designed by Mr. Williams, of Holloway, for his "Select Ferns and Lycopods."

B. C. R.

HOW TO GROW GLADIOLI.

In choosing a position for Gladioli when spikes for exhibition are required, it is of the utmost importance that an open situation should be selected. There can be no doubt that a deep loamy soil, not too heavy in texture, is the most suitable for the production of spikes for exhibition; but by deep digging and liberal manuring, very satisfactory results may be obtained in soils of even an uncongenial character. Early in autumn the soil should be dressed liberally

Gladiolus Brenchleyensis.

with manure from an old hotbed. After it is spread regularly over the surface, trench the soil up to a depth of 2 ft., and leave the surface as rough as possible, so as to expose a large body of it to the direct action of the frost and rains during the winter; this is of importance in the case of heavy soils, for it is very desirable that they should be thoroughly pulverised by the action of the weather. If this is done it will be in good condition for working in spring, and a pricking over with the fork will suffice to reduce it to a fine tilth, and even in wet seasons admit of the bulbs being planted without unnecessary delay. The planting of the bulbs should commence in March, and be continued at intervals of a fortnight until June. By this means a succession of bloom will be obtained from the earliest moment at which the show varieties may be had in flower until quite the end of the season. If planted in beds the rows should be 18 in. apart, and the beds must be 4 ft. in width. Beds of this size will admit of one row being planted down the centre, and a row on each side at a distance of 6 in. from the edge of the bed. As soon as the plants have made sufficient progress to require support, stout stakes should be put to them. The top of the stake must not be higher than the first bloom, and the stem should have one tie only, and that a strong one of bast. After they are staked the surface of the bed should be covered to a uniform depth of 4 in. or 6 in. with partly-decayed manure. This dressing is of the greatest value, for it materially assists in keeping the soil cool and moist about the roots during hot weather. As soon as the plants show bloom, liquid manure in some form is most beneficial in promoting a full development of the flowers. If for exhibition, the spikes should be cut when about two-thirds of the bloom are expanded, as the lower flowers are generally of a finer quality than those towards the top. In growing Gladioli for garden decoration it is simply necessary to select positions where they will present the most effective appearance, and there prepare the soil for them. They have a fine appearance planted in clumps between Dahlias, Hollyhocks, Phloxes, Roses, and other subjects of a somewhat similar character. They are also very effective planted in clumps alternately with Tritomas, and also associated with large masses of Cannas. They are likewise in every way suitable for intermixing with American plants, the dark foliage of which shows off the richly-coloured flowers to good advantage. The positions for them should be marked out in the course of the autumn or winter, and two or three spadefuls of manure should be dug into them. As a rule, the space for each clump of bulbs should be 18 in. in diameter, and the soil should be turned up to a depth of 18 in. or 24 in. March and April are the best months in which to plant for garden decoration, as they are then at their best during August and the early part of September. Plant from three to six bulbs in each clump, and confine each group to a separate colour. They must be staked in much the same manner as those intended for exhibition, to prevent the wind from injuring them.

SOWING HARDY ANNUALS.

We should not counsel the sowing of hardy annuals in frames at the present time. The season has now arrived when they may be committed to the open ground with the best prospect of success. The thing to do now is to well prepare the soil for their reception. Annuals like a free, deeply-stirred, well-enriched soil. When growing in poverty-struck ground they never truly represent their true worth, for the blooms lack quality, and are not so profusely and continuously produced as when accorded the conditions most favourable to a vigorous healthy existence. Hardy annuals pass the early stages of their existence in a comparatively cool and moisture-laden atmosphere; but just when the greatest strain on their energies is experienced, the weather is apt to be of an extremely trying nature, and, unless there is an unlimited store of food at the disposal of the roots, plants, which up to that time were the hope and pride of the owner, collapse in a most disastrous manner. Choose a dry time, and turn up the beds or border roughly, allowing the soil to lay thus and sweeten; then, breaking the lumps well, add a goodly portion of well-rotted manure, thoroughly incorporating it with the soil, which I may add cannot be too much worked and stirred with the four-tined fork. About the end of the first week in March is the best time for sowing, but should the weather prove inclement, and the earth be in a very weak state, by all means defer it until a favourable change is experienced.

The old adage, "more haste less speed," will apply to the sowing of seeds as to other things, for no time is gained and results are never good when seed is committed to the soil during a period of rainy weather. Generally speaking, the month of March is favourable to seed sowing operations, as drying winds, accompanied, perhaps, by a glimpse of sun, bring the surface soil into that mellow state which the experienced grower so well knows is essential to perfect germination. Wait, therefore, until such favourable conditions present themselves, and having made the surface quite firm, draw a shallow drill, sow the seeds therein, and cover them with about their own thickness of fine, sandy mould. If the plants come up thickly, thin out at once to about 3 in. apart, and before they can in any way crowd each other thin once more, leaving them this time quite 6 in. apart. A hardy, early sown annual will require quite that much space for lateral development, and

cannot fully display its true characteristics unless allowed it. Great resolution is required in thinning out the plant, and few amateurs are found courageous enough to at once afford the necessary space, but allow the young plants to crowd and weaken each other, when it is too late to adopt any remedial measures.

To obtain a due succession of bloom, sowing should be made about every ten or fourteen days, until the middle of May, soaking the drills when the weather is hot before sowing the seed. Hardy annuals may also be sown in the autumn to stand over the winter in the open ground, when they will give a fine display at a time when there is a comparative scarcity of bloom out-of-doors. A free, open spot should be selected about the beginning of September, and the various kinds should be sown in rows quite 6 in. apart, thinning out to 3 in. apart when up, as the object is to endow them with as much vigour of constitution as possible, which can only be well accomplished by exposing them to the full influence of light and air until the power of the sun ceases to make itself felt. About the middle of October transplant them to their permanent quarters, allowing 9 in. from plant to plant. Hardy annuals may also be employed to brighten up the greenhouse or dwelling early in the year. For this purpose let them be sown in pots about the first week in September, leaving one or two good seedlings in a 4½-in. pot and three in a 6-in. pot. Winter them in a cold frame, giving plenty of air on all favourable occasions. Twelve good varieties consist of Godetia Lady Albemarle, Nemophila, Collinsia bicolor, Clarkia pulchella, Leptosiphon aureus and roseus, Saponaria calabrica, Coreopsis aristosa, Collinsia grandiflora, Eutaca viscida, Linum grandiflorum, and Limnanthes Douglasi.

Bulbs after Flowering.—What to do with Dutch and other bulbs after they have flowered in pots appears with many to be a difficult question. My own way of dealing with them is to plant them out where they can be left undisturbed. But the question may arise, where is such a spot to be found? for beds and the majority of borders in which bedding plants are grown require deep winter cultivation. In spring gardening bulbs form an important feature, but they must either be imported or selected ones of home growth, as, on account of their having often to be lifted when in full growth and laid in by the heels, as it is called, to ripen in out-of-the-way places, they diminish rather than increase in size and strength. It is, however, quite another matter when they can have a permanent position, in which they are allowed to perfect their foliage and ripen their bulbs undisturbed in the ground. Taking them up and storing them is an unnatural system—a trying ordeal through which they may live, but that is rather a proof of their strong vitality than that they are in any way benefited by the exposure to which they are subjected. Since herbaceous and mixed borders proper have, however, once more become a reality, positions for bulbs will be found in them; indeed, we have annually planted the remnant of our forced bulbs of all kinds in such borders, and certainly they are capable of taking care of themselves as any plants with which I am acquainted, for they not only grow and flower freely, but increase into large masses, a condition in which they have a far better effect than if planted in rows with geometrical precision. Having stocked all such available positions and the margins of permanent beds devoted to Rhododendrons and similar plants, we last year planted all our surplus bulbs on the edges of our Rose beds and banks, and they are now showing an abundance of sturdy spikes of bloom, which materially add to the appearance of the beds without the least probability of detracting from the success of the Roses, as by the time their leaves get thick the bulbs will be going to rest under their shade, while the same cultivation suits both, merely keeping the soil free from weeds and adding a good top-dressing of rotten manure and rich mould, for neither likes the spade among their roots. It has been remarked that bulbs are difficult to suit as regards soil, but if it be rendered friable enough by cultivation for ordinary border plants, there need be no fear on this score. Of course if the object be to get fine bulbs for any particular purpose, rich soil and plenty of room for each bulb will yield proportionally rapid and satisfactory results; but for affording a brilliant display in the open air, plant well at first, and they will then need but comparatively slight attention afterwards.—J. G.

Thorn Apples (Daturas). — These are annual plants, and very beautiful when well grown. Their culture offers no special difficulty. Fresh seeds are readily raised in an ordinary hotbed, and the young plants should be pricked out singly in pots while small, and finally planted out in the open border. They need ample space for their full development, and should be grown in light sandy soils in preference to such as are of a heavier nature. There are five or six kinds possessing some claim to notice, but those which more especially merit the attention of the amateur are the D. ceratocaula, the D. Metel, D. Knighti, and the D. fastuosa, with its double varieties. The flowers

Knight's Thorn Apple (Datura Knighti).

of most of the species expand towards the close of the afternoon, and close the following morning.

Dwarf Snapdragons.—Last spring I had a collection of Tom Thumb Antirrhinums in eight different colours, and very dwarf, distinct, and beautiful they were. Some of the flowers were striped, others blotched in various forms and colours; but all were good, and, as a rule, the distinct colours were fairly true, which is more than can be said of all packets of seeds marked distinct. Everybody who saw the blossoms admired them, and towards the autumn, when nearly all other outdoor plants were shorn of their beauty, the Antirrhinums seemed to improve, and continued flowering till the end of November. Seeds sown during the next fortnight or three weeks in a gentle heat, when large enough pricked off into boxes, brought on for a time in a close, cool frame, afterwards hardened off and planted out in May, will come into bloom by the end of June, and continue flowering till late in autumn. Here and there one may be found that will grow rather taller than the rest, but these can easily be picked out when the plants are taken from the boxes, as by that time they will have developed their true character. If planted about 6 in. apart, an effective bed will be the result, and a new and pleasing feature may be given to it by planting seedling plants of Acacia lophantha from 2 ft. to 3 ft. apart amongst the Antirrhinums; and if a broad band or verge of the variegated Mesembryanthemum be added, it will impart a neat finish to the whole. With beds of this character there is not much labour or care required, and they continue to improve till long after the usual bedding plants are fit for removal. The Acacia is very elegant, and takes off the flatness of the dwarfer plants, and the light and shade that seem to play amongst its light, feathery branches bring out and improve the effect of the Antirrhinums. If the Acacias be sown now, and brought on in a moderate heat, they will be large enough to plant out by the usual time, but no time should be lost. The Antirrhinums, being hardy plants, may of course be sown in the open air, but if so, they will not come into flower till late in the year, and will consequently not be so useful this season as if sown in the manner above described, in order to have them in bloom from early in summer till late in autumn.—H.

THE COMING WEEK'S WORK

Extracts from a Garden Diary.

Feb. 28.—Potting Gazanias, Chrysanthemums for bedding, and various kinds of Verbenas. Shifting Daphnes, Chorozemas, and Camellias into larger pots, using a compost of loam, peat, sand, leaf-soil, and cow manure for the latter. Potting off young Egg-plants, and re-potting Eriostemons in loam three parts, sand and peat one part; also Epacrises and Heaths. Sowing more Sweet Peas, Mignonette, and Radishes; also Parsnips and Musselburgh and Ayton Castle Leeks. Planting out Globe Artichokes and Potato Onions. Putting in cuttings of variegated Pelargoniums, Begonia parviflora, and Plumbago; also inserting cuttings of Tree Carnations on hotbed. Digging land for crop of Carrots and Turnips. Manuring and levelling Celery land for Strawberries. Protecting Plums with nets. Cutting down plants of Erica hyemalis. Pruning Hybrid Perpetual Roses.

March 1.—Potting Crystal Palace Scarlet Nasturtiums, scarlet Lobelias; re-tubbing Jasminums and Passifloras; also potting large Clematises and shifting into conservatory. Dividing and potting Musk; potting young Fuchsias and Coleus. Sowing Scarlet Gem Melons. Planting Jerusalem Artichokes, and preparing to plant Potatoes close to Peach wall; also planting out remainder of autumn-sown Cabbages. Putting in cuttings of Achyranthes, Salvias, and Senecio. Earthing-up autumn-planted Cucumbers. Putting Dahlias into heat, and Lilacs into Peach-houses for forcing. Digging land for main crop of Carrots and second crop of Broad Beans. Clipping Privet and Holly hedges.

March 2.—Potting dwarf Roses, old and young Fuchsias; also Myosotis, a few more Calceolarias, and all Dahlias that are struck. Shaking out and re-potting standard Heliotropes, and placing them in heat. Sowing Perilla. Putting out Cucumber plants, planting Seakale thongs that are sprouted, and Potatoes under the protection of a Peach wall; likewise a few more Bath Cos Lettuce. Pricking off Borage. Putting in cuttings of Euphorbia jacquiniæflora. Manuring border for seed-beds. Putting a little straw round Rhubarb roots that have started to ward off frost.

March 3.—Potting Azaleas and Agathæa cœlestis. Sowing Godetia, Clarkia, Collinsia, Eucnide, Calliopsis, Zinnia, Alonsoa, Dianthus, scarlet Stocks, and Eschscholtzia in pots, and placing them in cold Vinery; also James's Keeping and Strasburg Onions, Leeks, Sandringham White and Ivery's Pink Celery, Early Horn Carrots, and Early Dutch Turnip, likewise a bed of Radishes under the protection of a wall. Planting Laurels, Roses, Violets, Early Potatoes on south border, and transplanting Cauliflower from pots to hand-lights. Putting strings over young Peas to frighten away sparrows. Cleaning Asparagus beds. Painting late Vines.

March 4.—Potting Palms and Panicums, and also Azaleas that have done blooming, and old Verbenas. Potting off Alyssum. Shifting old Fuchsias that were shaken out a month ago into larger pots. Planting Cypresses, Hollies, and other shrubs, and finishing planting all early borders of Potatoes; and getting in main crop of Potatoes; also remaining Horse-radish, Sage, and Thyme. Putting in roots of Asparagus for succession, and introducing into heat more scented Verbenas, Lilacs, Ghent Azaleas, Roses, Dielytras, Deutzias, &c., for conservatory decoration. Pruning standard and other Roses. Forking in manure among Artichokes. Sowing Victoria Stocks, Balsams, and Cockscombs in pots.

March 5.—Potting Vesuvius and Christine Pelargoniums and yellow Calceolarias for flowering in pots. Potting off Chrysanthemums, boxing off Salvia fulgens, and shifting Tree Carnations. Sowing Virginia Stocks, Clintonias, Godetias, and more Turnips and Early Horn Carrots on Peach border; likewise sowing pickling and other Onions, Leeks, and Parsley. Earthing up remainder of Seakale crowns intended for blanching. Clipping Box edgings and finishing cutting Grass edgings. Digging border ready for Gladioli. Stopping Vine shoots that are sufficiently forward for that purpose. Putting pot Vines in warm Vinery, and some little Azaleas into a cool house to retard their blooming. Putting flower-pots over Seakale crowns, and covering them over with soil. Filling Cucumber-pit with fermenting material ready for planting with spring-sown plants.

Glasshouses.

Chrysanthemum cuttings struck at the end of the year will by this time be well rooted and hardened off; they should be at once moved into 6-in. pots, using ordinary loam made rich with one-third rotten manure and leaf-mould in equal proportions, to which a little sand has been added. There is no grosser-feeding plant in cultivation than the Chrysanthemum; to grow it successfully the soil must be rich, and in its early stages it must never be allowed to become pot-bound, for if this occur, no after treatment will ever impart to the plants their wonted vigour, as the stunted condition the roots get into when confined in little pots has the effect of prematurely hardening the shoots. It will be necessary to decide upon the desired shape of the plants; in most cases it is advisable to adopt two or three forms, but the flat, Mushroom-headed fashion should never be followed. The most generally useful for decorative purposes are plants with a dozen or more shoots, ultimately trained with just as many sticks as will support them. All plants intended to be grown thus should, at the time of potting, have the points pinched out to induce them to break several shoots; this shape will be found the most suitable for the medium-sized, freest-flowering of the large varieties, and also for the Pompones. Many of the large kinds that pro-

duce the finest individual blooms, are not capable of being seen in their best form if many flowers be allowed each plant; for ordinary purposes, six or eight will be enough on each; for growing in this way, the plants must be also stopped now to cause them to form three or four shoots. Amateurs who are disposed to attempt the production of a few of the finest flowers, may do so by only allowing each plant in a 9-in. or 10-in. pot to carry from one to three flowers; these will be found very effective when in bloom if arranged in the greenhouse amongst the dwarfer growers, relieving the even surface, which is justly held objectionable in a stage filled with Chrysanthemums of nearly the same height. To grow them in this way the young plants now potted should not be stopped at all, but simply trained to a single stem all through the season, allowing it to branch out in the summer near the top to as many shoots as it is destined to carry flowers. Chrysanthemums are frequently seen but mere shadows of what they are capable of being produced, yet they are easily managed, and well repay a little extra attention.

Cinerarias and Calceolarias.—Cinerarias will now be pushing up their flower-stems, and will be benefited by using altogether liquid manure of a moderate strength; this treatment will be found of greater efficacy to the plants than giving it in a stronger state alternatively with clear water. If some of these late-sown Cinerarias be removed to a frame placed where it will not be directly under the influence of the sun, the supply of these useful flowers will be considerably prolonged; all the protection they will now require can be given, should a little frost occur, by shaking some litter round the sides of the frame, and covering the lights with a couple of mats. Herbaceous Calceolarias, that have now filled their pots with roots and are pushing up their flower-stems, will have their blooming capabilities much increased by the continuous use of liquid manure; these should be in a warmer place than the Cinerarias, and a vigilant look-out kept to see that aphides do not get established upon either of them.

Pelargoniums.—The earliest-blooming, large-flowered, and fancy Pelargoniums will now be showing their flowers, and as the roots by this time will have taken full possession of the soil, they should be supplied with manure water once or twice a week; if attention in this matter be not paid to these plants, there is a difficulty in keeping the foliage of that dark green, healthy hue which so much enhances their appearance when in flower.

Bedding Plants.—Cuttings of Verbenas, Heliotropes, Ageratums, Petunias, Lobelias, and Fuchsias should be taken off and put in to strike as the old plants furnish them of sufficient size; see that they are quite clear from green fly when put in, otherwise they will do little good; should, however, any be found upon them, the best plan is to dip the cuttings in Tobacco-water, washing them in clean water afterwards. Keep on propagating the more tender kinds of bedding subjects, including Alternantheras, Iresines, and Coleuses, until there is not only enough to plant, but a good reserve to fall back upon in case of loss. Dahlias of choice varieties that are intended to be increased by cuttings should now be put in a slight heat; if the roots be placed in a broad shallow box, with a little soil about them, they can be set near the front lights in a Vinery that happens to be at work, which is much better than the usual practice of putting them on the floor of the Vinery, from which position they are likely to get drawn up weakly; such a house as the above not being available, a frame on a slight hotbed will be found ample for the purpose. Tricolor Pelargoniums, being so much slower in their growth than the ordinary green-leaved kinds, should, if possible, be kept warmer than the latter, so as to get them up in size before planting out time, for if not sufficiently large when turned out, the little progress they make causes the season to be half over before they produce the desired display; 50° at night will not be too much for them. The above treatment will answer either for plants struck last summer or for such as were taken out of the beds, cut back, and potted in the autumn. Some annual Stocks should be sown in small pots, dropping half a dozen seeds into each; these ought to be stood on a slight hotbed, or in a house where there is a little warmth, being careful not to over-water the seeds before vegetating, or the young plants when up until they have acquired some strength, as they are extremely liable to damp, the best preventive of which is to keep them as close to the glass as possible directly they appear above-ground. If well attended to and a little more root-room allotted to them as they require it previous to planting out time, they will flower in advance of later sowings.

Fruit.

Pruning and nailing should now be completed as soon as possible. The principal thing that amateurs ought to observe in carrying out this work is to encourage and retain, as far as possible, over the whole surface of the tree an even amount of bearing wood; this is especially necessary in the case of young trees, which are often spoilt by getting the bearing shoots to the upper and outer portion of the branches; this is generally caused by retaining too many strong branches in the centre of the tree, whereas, if they be kept more open, there is room for a uniform quantity of young bearing shoots that can always be had with sufficient foresight. In shortening a young shoot of last summer's growth near the base or centre of the trees, the operator should always bear in mind that there is a two-fold object in view—the production of fruit for the current year, and the growth of one or two young shoots that will be laid in during the summer for fruiting next year. The point to which he cuts back should, as far as practicable, be regulated by the most suitable position for the present season's growth to occupy. After the tying and nailing is complete, use every means, as recently recommended, to retard the bloom by keeping the sun from it on bright days.

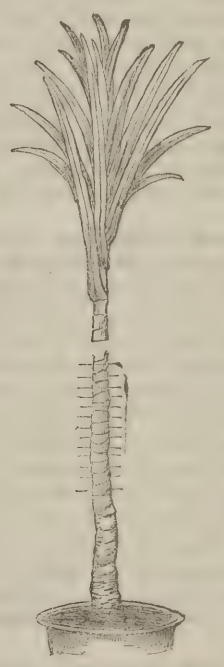
Worms on Lawns.—Correspondents so frequently ask how to destroy worms in lawns, that I am tempted to send my own practice. I dissolved 1 oz. of corrosive sublimate in an imperial quart of hot soft water, and put a small wineglassful of this into a watering-can which contains about 2 gals., and watered in mild damp weather, when the worms lie tolerably near the surface. It was at once pleasant and disgusting to see, in less than a minute, the great lob-worms crawl out of their holes. I took them up and threw them into a pan of strong salt and water, to kill them. I then rolled my little lawn, which used each morning to be covered with worm-casts, and there never has been one since. This is two months ago, and I cannot see that the Grass is in the least injured. My only fear is that I have too completely driven away or killed the worms, for of course their holes are very useful in conducting surface water into the drains and keeping the soil open. After two or three weeks the Grass looked as if it had just been rolled; of course all the water I used was rain-water. I found the remedy in a little book called "Garden Receipts." The directions were 1 oz. of corrosive sublimate to 40 gals. of water. I used it rather stronger. Mine is an old garden where worms are extremely plentiful and annoying.—W.

Soot and Lime *v.* Birds—Those who, like myself, are troubled with birds picking the buds off their Gooseberry and Currant trees may derive some benefit from the following remarks: I prune about the beginning of the year; after all are pruned, I have both Gooseberry and Currant bushes well dusted with lime and soot mixed when the bushes are wet, in order that the mixture may adhere to the trees, and the result has been most satisfactory, not a bud having been taken after the bushes were dressed. I have, however, had to repeat the operation lately, as the rains had nearly washed the first dressing off.—W.

Law Relating to Greenhouses.—Mr. F. Norris (page 595) has made incorrect statements on the above subject. The Building Act clearly states in its list of exemption "all greenhouses, so far as regards the necessary woodwork of the sashes, doors, and frames;" and therefore in all other particulars they are not exempted, but are to follow the rules of the Act. Houses for rearing plants for sale, and placed in the midst of a nursery ground, are viewed as chattels in trade, but not so other houses for plants.—Edwin Nash.

GLASSHOUSES AND FRAMES.

How to Propagate Dracænas.—There are two ways of increasing Dracænas—the first (fig. 1) by cutting off the top, which should be put in single pots in equal parts of peat, loam, and sand, well mixed together; give a good watering and plunge the pots up to their rims in a good brisk bottom-heat, keeping them close for two or three weeks, and giving a slight sprinkle of water overhead every morning. They take about two months to get well rooted, when air may be gradually given them, and they may be turned out of the frame. Keep them, however, on a gentle bottom-heat for a week or two, when they can be potted and placed in another part of the plant stove, and will soon make fine plants. By cutting up the stems, as shown in fig. 2, and putting the pieces in well-drained pots or pans, just covering them about ¼ in. with fine soil over the tops, they will soon begin to grow if plunged in a good bottom-heat, and treated in the same manner as the tops. Sometimes they push forth numerous growths according to the strength of



Methods of propagating Dracænas.

the stems; these all root, and each one when cut away will make a plant. The old bottom will push out several shoots, which may also be used for cuttings. Dracænas may be increased all the year round, but the best months are May and June.

Gloxinias from Seed.—"W. W. P." (p. 530) must have been unusually favoured to find that out of "two small packets of seed" he could raise 60 Gloxinias "every one quite distinct." My experience with seed from the best strains is very different, many duplicates being found in every lot raised. The growth, in less than six months, to plants "20 in. across," with flowers of 4 in., will be, I think, even more startling to most growers. Although often a prize-taker with these plants I have never had, nor seen in this part of the country (the western) any such size plants grown in six months as "W. W." P. has been able to do. Has he been unusually successful? or are we behind the times here? Will he tell us the size his bulbs are, and in what he has grown them?—W. B.

Plants for a Small Greenhouse.—There is a wonderful variety of plants that do well in a cold greenhouse. A temperature of from 35° to 40° is excellent for winter purposes, except that in such a temperature it is not possible to have in midwinter other than the hardiest and earliest plants in bloom. Roman Hyacinths, Christmas Roses, Primroses, Camellias, Primula denticulata, &c., will yield the very earliest bloom in such a temperature, and to these will follow Chinese Primulas, Cyclamens, Cinerarias, and herbaceous Calceolarias, all of which will live well in a cool house through the winter, provided frost be excluded,

Genistas, Coronillas, Deutzias, Dielytras, and early Azaleas follow in succession, and furnish an abundance of bloom. For the summer season the best plants are show and zonal Pelargoniums, Fuchsias, Balsams, Begonias, and similar plants, all very gay and easily managed. These will keep the house gay until autumn, when Chrysanthemums, Solanums, &c., might terminate the year. To these an abundance of plants can be added, but the dimensions of a small house are so limited that it would be useless to suggest more, especially for summer decoration, where a Vine in foliage will exclude light and render the cultivation of plants difficult. A quantity of hardy early spring flowers, such as bloom naturally in the open ground in March and April, if lifted into pots and placed in such a house early in winter, will commence to produce bloom much earlier, and prove most valuable for decoration before other and tenderer plants have commenced to flower. A few Roses in pots brought into the house early will bloom a month before those out-of-doors. These can be returned to the open air as soon as the bloom is over. A few tree Carnations in pots will yieid winter bloom, and furnish some fine "buttonholes." Common Auriculas in pots are pretty sn a front stage, and do admirably with Chinese Primulas and Cyclamens. The obtaining of flower all the year round is difficult to accomplish without strong artificial heat, but the plants named above, if properly treated—a matter, be it understood, of the first moment for their welfare—will give a very long season, although the artificial heat be wanting.—D. B. M.

Nicotiana longiflora.—Seeing several enquiries respecting the cultivation of this plant, I beg to give my experience. Last autumn I bought a packet of seed which I sowed in a 6-in. pot in light soil, from which I got over 50 plants. These, when large enough, I transplanted into 4-in. and 5-in. pots, using some old rotted turf with part sand and manure. Some of them bloomed before Christmas, but only slightly, having only 2 and 3 blooms on. I have now over 20 plants, some of them with 4 and 5 flowering stems, each plant having from 12 to 20 leaves, some leaves being over 2 in. wide and 6 in. long. They are grown in a cool greenhouse, as I do not use any artificial heat, only in very severe weather. From what I can see of the plant, it is as easy to grow as a common Geranium, for I have had no trouble at all with it. In a few weeks from now I expect to have scores of blooms.—E. M., *Middlewich.*

Rock Forget-me-not (Omphalodes Luciliæ).—Of the numerous additions which we have had of late years to our lists of hardy flowers perhaps none have been more universally admired than the subject of the accompanying engraving. It belongs to the Borage family, which furnishes us with so many beautiful border flowers. Though its flowers lack the deep azure blue of its pretty congener, the spring-flowering Omphalodes (O. verna), there is something in their pale porcelain-blue tint, which changes to a pinkish hue, that is quite unlike anything which we have amongst hardy flowers, and this, combined with its handsome glaucous foliage and the graceful creeping habit of its slender branches, which throughout the greater part of the spring and summer months bear a copious supply of blossoms, has elevated it to the rank of plants that cultivators like to place in the most select spots in the rock garden. Its perfect hardiness, too, much enhances its desirability. It succeeds well when planted in a border or on a rockery, where its branches hang over the ledges, but the place must be thoroughly drained, for though it requires abundant waterings during the growing season, it is very impatient of stagnant moisture at the roots or about the crowns. Slugs, unhappily, are particularly fond of its foliage; therefore the plants should be guarded against their attacks, and for this purpose strips of perforated zinc about 3 in. wide, and bent so as to form a ring round the plant, will be found to be as effectual as any plan that can be adopted. It may be readily propagated by division or by seeds, which in some seasons it develops freely. It is very successfully grown in Mr. Wheeler's nursery at Warminster.—W. G.

Winter-blooming Deciduous Hardy Shrubs.—The three highly-ornamental and usually most free-flowering hardy shrubs represented in the woodcut on page 623 are not by any means as generally known or as frequently met with as their season of bloom and (in the case of the first-named) delicious fragrance most certainly entitle them to be. Chimonanthus fragrans grandiflorus comes into blossom about Christmas time, and remains in beauty for about a month. Its flowers, besides being of larger size, are also of a much brighter colour than those of the type which is also known to some under the name of Calycanthus præcox, being of a decidedly golden hue, with claret-coloured centre, while its flowers are of a dullish white. The blooms of the ordinary kinds, however, exhale a considerably greater degree of fragrance than these of the brighter coloured and larger-flowered variety, thus apparently making up for their inferiority in size and beauty. The variety now figured is usually much more free and profuse blooming than the common kind; the perfume of these shrubs much resembles that of the common Jonquil. Hamamelis arborea is more generally known, and about three weeks earlier in blooming than the other variety. Its flowers are also considerably larger in size and more conspicuous in appearance, having a deep claret-coloured centre, which is altogether absent in H. Zuccariniana; it comes into bloom about the middle or end of January. Hamamelis Zuccariniana produces a profusion of curious starry blooms of a pure canary-yellow, expanding about the middle of February, and remaining in beauty for about three weeks. It is well worth adding to every collection of hardy ornamenal shrubs, though not so conspicuously ornamental as its better-known relative. A south wall or fence suits these shrubs admirably, and they succeed in any good garden soil, but a sandy loam suits them best.

Rock Forget-me-not (Omphalodes Luciliæ).

ANSWERS TO QUERIES.

4197.—**Climbers for Greenhouse.**—Tacsonia Van Volxemi and exoniensis are fine subjects for covering the roof of a cool greenhouse, as are also any of the cool varieties of the Passion-flower. For a large structure, Bignonia jasminoides is very suitable, as it grows with great rapidity, and affords plenty of shade. Lapageria rosea and alba are two fine climbing plants for covering a roof, but they do not grow quite so rapidly as the first mentioned subjects until they have become well established. Where anything choice is sought for, they should however be preferred, their beautiful wax-like blooms lasting a long time in perfection, and the foliage itself being dense and deep in colour.—C. B.

4198.—**Plants not Flowering.**—We should imagine that you have maintained too high a temperature, and that the air has been at times too arid. Defective root action would, however, account for the roots turning brown. Perhaps you have given too much water. As the pit contains a miscellaneous selection, we would advise that the temperature do not exceed 50° by night, and 60° by day, quite enough in dull weather for Cyclamens, Spiræas, and Salvias. Give a little air in the day-time when the weather is favourable, and water carefully. The great mistake that many make in forcing plants into bloom, is that of maintaining too high a temperature, especially at night during dull weather, and at night, which often has the effect of paralysing the functions of the plants, inducing torpidity of the roots and a general weakening of the tissues.—J. C. B.

4215.—**Failure of Pot Roses.**—We should conclude that the failure is due to the low temperature. The Rose is a hardy plant, but the young growing wood is extremely sensitive to sudden changes, as may be witnessed in the spring, the shoots and flower buds soon becoming disfigured when exposed to the frosts and biting winds. When forced at this early period of the year the wood is naturally very tender, and a sudden fall of the temperature to such a low point would suffice to cause the mischief. The guano water at the strength stated would not have injured them.—C.

4209.—**Hedychium acuminatum.**—This plant thrives best in a temperature of 55° in the winter, and 60° to 65° during the spring months. A compost, consisting of loam, leaf-mould, and peat, in equal portions, best fulfils its requirements, adding enough coarse silver sand to keep it open. Give good drainage, placing a little rough peat on the crocks, for this plant likes plenty of water when growing, but is impatient of stagnant moisture at the roots. Pot firmly, but do not ram the soil in so as to make it hard; merely tapping the pot upon the bench will suffice, making the surface quite firm. March is the proper time for repotting.—J. C. B.

4210.—**India-rubber Plants in Windows.**—The India-rubber is by no means a difficult plant to grow in rooms, but the apartment must be a warm one. It will not thrive in a cool room during the winter, but casts its foliage when thus placed. It is a plant that likes plenty of moisture at the roots when in full growth, but which quickly feels the effects of an over-dose of water in the winter. We should fancy that the plant in question is suffering from torpidity of the roots caused probably by an over-wet state of the soil. From now until finer weather comes allow the mould to dry out and then give just enough to moisten it through. In summer during hot weather give more frequent supplies, and should the plant appear at all pot-bound shift it into the next sized pot. All plants grown in rooms should have the foliage well sponged, both the upper and under surfaces, at least twice a week, as when the pores get choked with dust the leaves are sure to decay.—J. C.

4235.—**Propagating Hoya bella.**—Cuttings of the growing wood may be taken off early in the summer, cutting them to two joints and inserting them in a compost of two-thirds fibrous peat and one-third silver sand. The pots should be filled to quite one-third of their depth with drainage, placing thereon some rough material, and filling quite to the rim of the pot with the compost and making it firm. Water gently and place in a brisk heat under a hand-glass, shading of course from sun, but otherwise admitting as much light as possible. Give a

little air every morning until the cuttings are taken and then inure them gradually to the atmosphere of the house.—B.

4220.—**Gloxinias for Winter.**—If you really wish to have Gloxinias in flower in November, you will have to rely upon seedlings. Gloxinias may be had in bloom from early summer to the beginning of or even far into the winter; but to effect this successional sowings of seed must be made throughout the spring. Old bulbs will soon, even if kept comparatively cool, be showing signs of life, and must be potted up and grown along. They may be potted any time between now and May, and of course the sooner they are encouraged to make free growth the sooner will they bloom. When potted before May they need to be placed in a warm house, and are grateful in their earlier stages of growth for a little bottom heat. After the 1st of May they may be potted and placed in a cool house, keeping them as warm and close as possible, the best way being to cover them with a handlight, as then they get a few degrees more warmth and do not dry out so much. To get plants for winter blooming sow the seed in a brick heat about the beginning of April in sandy peat. Prick them off when large enough into pans, and from thence transfer them to small pots, shifting them on as required, so that by August or September they will be occupying 4½-in. pots. The Gloxinia delights in warmth and moisture, with a tolerably free circulation of air in fine weather. Peat and a little leaf-soil is about the best compost, and although the plants should never know the want of water they should never be heavily moistened.—C.

4236.—**Heating Greenhouses.**—In answer to "Novice" I may state that 4-in. pipes were chosen for economy; that the arrangement is a single flow and return, which runs up one side and along the farther end of the house. On the coldest night of the season, when the thermometer outside stood at 5°, my house was never down to 40°, and during the whole severe period the cost of fuel only reached 1s. 8d. per week. My stove is furnished with a 6-in. iron chimney, 10 ft. high. I have no knowledge of any stove without a chimney, nor do I think such could be used with any fuel but charcoal.—P.

4206.—**Utilising Frames.**—Construct a pit below the ground level the length and width of the frames put together (say, 28 ft. by 6 ft.) and about 18 in. deep. Set the boiler in one end, with the flue running across, chimney at back, and the pipes running right round, if 4-in. pipes once round will be plenty. Set the frames on side by side, and fix in each, at the bottom, a sheet of strong galvanized iron thickly perforated with small holes, held up by two or three bearers. Arrange evaporating pans on the flue and pipes to give a moist atmosphere. In winter, fix a number of boards across the frames, 2 in. or 3 in. above the false bottom, leaving a space, say 1 in. between each, on these bedding plants, and the heat will rise and keep them safely. In summer, take away the boards and cover the false bottom with about 2 in. of spent hops or Cocoa-nut fibre, providing a mound of earth at one end (the back) to plant the Cucumbers in. This will give a good bottom heat, and vines may run along the bottom as in an ordinary frame, thus doing away with the bother of tying up to rafters, &c. Keep the hops or fibre constantly moist. No manure will be needed. The frames should be in a sunny position, facing south; or else run the pipes round inside the frames themselves, (above ground) dispensing with the false bottom. Have moveable boards for plants in winter, and fill up the pit with manure and soil for the Cucumbers, &c., using the pipes to give top heat instead of bottom.

—— Probably the best arrangement you can adopt in heating a range of frames with boiler and pipes will be to fix the boiler under cover at one end, and carry your flow-pipe as high as you can along the back of the frame and the return in front. Long manure may be used to help general bottom heat, by putting a good bed of it inside, but of course the pipes must not be buried. These ought to be up in the frames rather than beneath them. There may be three divisions, say one of three lights and two of two lights each, the one nearest the boiler will be the warmest. You do not require any special heating power if you do not force, and ordinary greenhouse plants will not want forcing in winter, nor Cucumbers in summer, but Melons want plenty of heat.—A. D.

4204.—**Manure for Azaleas and Camellias.**—It all depends. If the plants are large and the pots full of roots suitable manure may be given with advantage when the plants are coming into flower. Weak liquid manure may be given to young plants under similar circumstances, or some concentrated stimulant, such as Standen's Gardeners' Friend, may be used; the quantity must depend upon the size of the plant and pot. Re-pot either at the beginning of the growing season or else when the buds are set; some adopt one time, and some the other. I think the former time is best for young plants.—E. H.

4241.—**Dianthus Heddewigi.**—Eastern Queen, a light ground flower with dark coloured blotches, and Crimson Belle, rich crimson and single flowered, are both capital showy kinds, and make beautiful beds. Masses of suited kinds as obtained from ordinary packets of seed

Group of hardy winter-flowering Shrubs. 1, Chimonanthus grandiflorus; 2, Hamamelis arborea; 3, H. Zuccariniana.

are very charming, the continuity of bloom depending much upon the good quality of the soil. The double diadematus is a superb kind, producing large brilliant coloured flowers. These kinds are 1s. 6d. per packet, but good mixed kinds may be got for 6d. per packet. The best time to sow is early in April and in pans under glass, pricking out the young plants on a warm border till wanted for the beds.—A. D.

4226.—**Plants for Winter.**—I know of no plants that would stand in rooms with gas without injury in winter, but of course with the means your correspondent possesses there should be no difficulty in keeping up a succession of flowering plants. To begin with bulbs, there are Tulips, Hyacinths, Crocus, and Narcissus, Lily of the Valley, Mignonette, Primulas, Cyclamens, Chrysanthemums, tree Carnations, Bouvardias, Epiphyllums, Dendrobium nobile, Cypripedium insigne, Tea Roses, Christmas Roses, Spiræa japonica, Violets, Deutzia gracilis, Dielytra spectabilis, Lilacs, Weigelas, Laurustiuns, Azaleas, Camellias, Heaths, Epacris, Eupatoriums, &c. Ferns and foliage plants would stand the impure atmosphere better. Dracænas, Ficus elastica, Aloes of various kinds, Palms, Grevillea robusta, &c., might be used as background, with flowering plants to give colour and to be frequently renewed.—E. H.

4205.—**Stocks for Exhibition.**—The best summer exhibition stocks, because most dwarf and compact, are the pyramidal section, in which there are a dozen or more kinds, white lilac, creamy yellow, carmine, red, purple, crimson, and several others. These grow to a height of about 10 in., have a massive centre niche and three or four large side ones. They all flower at the same time, and should be sown under glass without heat in April, say about the end of the month for you to have them good in August. If sown in March they bloom in July. Sow the seeds in pans thinly, expose the young plants for a week in the open air before planting, then lift them carefully and dibble out in rich soil about 12 in. apart.

4230.—**Climbers for Walls.**—We should advise the planting of the Passiflora on the sunniest wall and the Rose where there is partial shade; there its blooming may be prolonged. You cannot get better Tea Roses than Gloire de Dijon, creamy-buff; or if you prefer a white one get Marie Guillot; and if a deep coloured one, then have Cheshunt Hybrid; all are strong growing. Passiflora cœrulea is one of the hardiest of the family, and thrives well in ordinary good garden soil. The Roses do best if the ground be deeply moved and well manured. Plant both about the middle of March, getting strong plants in pots, but on turning out see that the roots are laid out, and not left in a ball. Nail the strongest shoots to the wall as soon as planted. But little pruning will be needed for the first season.—A. D.

4231.—**Poultry Manure.**—Poultry manure may be used for any crops, but should not be applied in its fresh crude state. We prefer spreading it over the fallow soil during winter, and permitting it to get well washed in prior to being dug in. It is well also to mix it with decayed garden refuse or leaf-soil for a few weeks before adding to the soil. It is most unfit to use or mix with hotbed manure, as it emits no heat and absorbs the heat emitted by the stable manure in process of decomposition. In the same way Cabbage stumps would be of no use added to a hotbed, but if first laid on the ground neatly and compactly to make a base for the bed they would do good service.

4207.—**Propagating Clematis.**—In the nursery trade Clematises are propagated by means of layers and by grafting. The former is done by pegging down and tonguing the wood at the bud joints, and these, throwing roots during the season, make plants. Others are worked upon stocks of common kinds that propagate freely, or upon pieces of roots. These stocks can no doubt be obtained from Mr. Noble, Bagshot, Mr. Jackson, of Woking, or Mr. Cripps, of Tunbridge Wells, each of these being large growers. We know nothing as to price, but that can be ascertained on application as above.

4213.—**Border for Pansies.**—Any shaded or partly shaded border will suit Pansies well; but the plants will draw somewhat where light is excluded. A warm border suits the Pansy in the winter, but the heat fairly burns up the plants in the summer. The soil should be worked deeply, and have a good dressing of rotten manure, well forked in before planting; a top dressing of leaf soil, or similar light material, that will at once enrich the soil, and keep it open, will do much good. The best plants are those obtained either from cuttings or rooted pieces, and turned out with balls of roots or from pots. These may be planted early next month, and encouraged to make strong growth to secure fine blooms.—A. D.

4156.—**Vegetables in Shaded Places**—Some Radishes may be sown early under Apple trees, and early Lettuces may also be had; also early Kidney Potatoes may be grown to be lifted early in July. Dwarf Broad Beans, such as the Dwarf Green Gem, and Dwarf French Beans may also be sown thinly and a fair crop obtained. Jerusalem Artichokes will also grow. Then in winter, Sprouting Broccoli will give a fair crop, and some of the Kales, such as the Scotch and Cottager's may do. Many kinds of hardy plants, such as Primroses, Polyanthus's, Daisies, Pinks, Wallflowers, Violets, and similar things will do well beneath trees. Perhaps the most suitable under-crop is bush fruit, such as Currants and Gooseberries, as their fruit is gathered before the Apples are ready, and the treading of the soil does not affect their welfare.

4157.—**Potatoes for Clayey Soil.**—On a cold wet clay soil plant nearly on the surface in shallow drills, and fork soil over the rows to bury the sets; also fork up between the rows before earthing to keep the soil light and dry on the surface. Good early kinds are the Ashleaf Kidney and Beauty of Hebron, an improved early Rose, and for late crops Magnum Bonum, King of Potatoes, Victoria, and Grampian, all good cropping and table kinds. The advantages of allowing the seed-tubers to sprout before planting are these—first, you are assured that the sets will grow; second, you save perhaps ten days or a fortnight, or in cold soil may plant that time later with benefit, and if you want to do so you may thin out the growing shoots. When this is done there is a smaller number of tubers, but these are finer. It is a good plan to thin out these shoots when tubers are specially wanted for exhibition.—A. D.

4182.—**Cleaning a Paraffin Cask.**—Put an armful of shavings into the cask and set them on fire, let it burn about twenty minutes or until you find the paraffin is consumed, then turn the cask over to put it out. This must be done in an open place, as it makes a great flare for a time. When the fire is out cleanse the cask with water and washing soda; this will render it perfectly sweet for rain-water or other use.—W. J. C.

4138.—**Treatment of Pelargoniums.**—If your plants are several together in the same pot, they should be potted separately in small pots, the best time for doing so being the middle of March. The compost should consist of two-thirds loam and one-third leaf mould, adding to it a little coarse silver sand. When the soil is seen to be full of roots shift them into 3-in. pots, and later on into the next size receptacle. Be careful not to water heavily after each shift; keep the soil moist, but do not at any time give enough water to bring it into a clogged, sour, pasty condition. By the beginning of August each plant should be well established in 4½-in. pots, and will flower freely. Towards the end of the summer they may appear to need nutriment, which may be given them in the form of a top dressing of some concentrated manure, and when the tops are full of roots and the weather is hot and dry, give plenty of water at the roots. During March, April, and May encourage growth by maintaining a warm atmosphere, sprinkling them overhead on hot days, and ventilating freely in mild weather. By the latter end of May and all through the summer free ventilation night and day must be given, or the plants will run too much to foliage, and will give but little bloom. If grown in windows the best plan is to place them in the open air after the beginning of June. Geraniums require heat, air, and strong light to perfect their tissues and bring them into a flower-bearing state.—C.

—— Stop them by pinching out their ends, which will induce them to throw side shoots. In a fortnight after stopping re-pot them into 6-in. or 7-in. pots, using a compost of three parts turfy loam, half a part thoroughly decomposed cow dung, one part peat, and half a part silver sand, well mixed, and with good drainage. Plenty of fresh air and light are required for their well-being; a close atmosphere is injurious; do not give more water than is absolutely necessary. Train out the shoots as they grow to small sticks, keeping them hidden as much as possible, and, keeping the plants thus trained, you admit light and a free circulation of air to the interior of the plants, and get rid of yellow leaves which we often see in plants whose foliage is kept cramped together. With careful attention the plants thus treated will come into bloom in the beginning of July. When the pots are filled with roots weak liquid manure may be given.—W. L., *Cheltenham*.

—— If "F. C." will refer to last week's GARDENING ILLUSTRATED (No. 99) there is mentioned by "W. W." an Onion Trebons attaining the dimension of 12 in. or 14 in. under ordinary treatment, and in every way answering to the description of that required. Last year in consequence of the previous wet summer, many seeds sold even by the best firms failed to germinate, but if the seeds were good, the failure no doubt was caused by sowing too deeply. The ground for Onions should be deeply dug and well manured, then rolled to make firm, and seed sown in drills about the end of February, not more than 1 in. deep, and about 9 in. between the rows. Tread them down well after planting; when large enough thin to about 4 in. apart. The finest bulbs, however, can be obtained by sowing in the autumn, say the end of August, and transplant early in February, taking great care not to injure the roots, by removing each plant with a ball of earth adhering.—J. V. A.

4174.—**White Squills.**—We should think that Scilla campanulata major alba and patula alba would meet your requirements We believe that they may be obtained at any of the hardy plant nurseries near London.—C.

4176.—**Snails on Ferns.**—Lay some Cabbage or Lettuce leaves round the pots, and in amongst the foliage, and examine them about 10 o'clock at night. You will catch them all off in the course of a few days in this manner.—J. C. B.

4183.—**Liquid Manure.**—The drainings from a pig-stye may certainly be used for pot plants, such as Geraniums, Fuchsias, and other soft-wooded subjects, but not for Azaleas, Heaths, &c. About half-a-pint to two gallons of water would be a safe mixture. It is better to administer liquid manure weak and often than to give strong doses, which often do more harm than good.—C. B.

4184.—**Potatoes for Seed.**—The tubers will do very well for planting. Lay them out in a dry, light, cool, airy place, and they will then form short spurs, and will be in good order for planting when the time arrives.—J.

4232.—**How to Destroy Worms in Lawns.**—There is no doubt that paraffin oil will kill worms or any other living thing if it reaches them in a right proportion. Put ½ oz. in a gallon of water, and keep it well mixed during the application of it by constant agitation.—E. H.

4224.—**Tacsonia Van Volxemi.**—I don't think 6° of frost for a few hours only would kill the Tacsonia, but if the temperature continued so low for any length of time it would kill it, as the soil and roots would become frozen. Examine the roots.—E. H.

4202.—**Scale on Peach Trees.**—Dissolve 8 oz. of Gishurst compound in a gallon of soft water, add half a wineglassful of paraffin oil, and thicken with clay to the consistency of paint; apply with a brush carefully on the young branches where the buds are; the older wood may have it well brushed in. It should be done at once before the buds become too prominent.—E. H.

4222.—**Newly-made Kitchen Garden.**—Your garden should be in good condition for most plants without more manure. A further dressing for Onions might not be amiss, and the same remark applies to Celery.—E. H.

4201.—**Growing Tomatoes.**—Tomatoes may be grown and fruited in any sized pots from 8 in. upwards. Of course the larger the pot the stronger the plants will grow. If large pots are used, train the plants on the roof; if small ones, train them to stakes and keep the side shoots well pinched back. Plant them in turfy loam well enriched with manure, and leave space on the top of the pots to add a top-dressing when required.—E. H.

4221.—**Shrubs for Shelter.**—There is nothing so good as the common English Yew, and they grow fast when well established. Have the ground well trenched and prepared, and procure strong plants that have been frequently transplanted.—E. H.

4223.—**Spiræas not Flowering.**—The Spiræas should have been divided and planted out for a couple of seasons. They will not go on flowering perpetually in pots without some recuperative treatment. Divide now and plant out till they become strong patches, then pot again. A strong root may be made into three or four.—E. H.

4203.—**Cutting Down Laurels.**—Do not cut down the shrubs before March. It will be more easily to distinguish where life remains then than now.—E. H.

4225.—**Strawberry Plantations.**—No; only to keep the surface stirred with a hoe. Mulch with long littery manure when the blossoms begin to open to keep in the moisture and the fruit clean.—E. H.

4228.—**Buds Falling off Geraniums.**—It is difficult to say what causes the buds to fall off Geraniums without knowing their condition and treatment. Gas would make the buds to fall; so would too much or too little water applied to the roots, or if there are worms in the pots and the drainage imperfect; cold draughts of air will cause buds to fall; in short, checks of any kind will do it.—E. H.

4229.—**Branching Larkspurs.**—The branching Larkspur may be sown early in March if the soil is light and warm, but I should recommend a further sowing to be made about the end of the same month elsewhere, for the purpose of filling up blanks when the Tulips die down. Larkspurs transplant very well with care in showery time, or if watered and shaded for a few days.—E. H.

4169.—**Wood Ashes for Lawns.**—If "T. G. W." applies to Mr. P. E. White, 6, Beulah Terrace, Leytonstone Road, London, he can get what wood ashes he may need.

4170.—**Dubbing for Boots.**—1 pint boiled oil (drying oil) 1 pint neat's-foot oil, 1 lb. Russian tallow, ½ lb. beeswax ½ lb. Venice turpentine. Boil for three or four hours in a steam bath, and stir till cold. If it is too thick or stiff add more neat's-foot oil, and boil a few minutes.

4237.—**Roman Hyacinths.**—You can do nothing more after the leaves have decayed than drying off the bulbs and preserving them in bags till next September. It is, however, questionable whether they will repay keeping, as all the best bulbs are imported every autumn.

4214.—**Frozen Cacti.**—It is to be feared that Cactuses that have been frosted so much as to be soft to the touch are injured beyond recovery. The tissue of the plants is naturally soft and succulent, that is, full of water, and the frost would in such wood do considerable mischief. The Cacti are all natives of warm countries, and at all times, even in a state of rest, should be in a temperature not lower than 40°. Keep your plants from the light. Keep moderately dry, and do not push them in any way. If Nature is not crippled she will presently exhibit life.

4217.—**Pruning Clematis.**—Those of your Clematis which bloom early and from the old wood should have that thinned out, and the strongest laid in neatly. Those that make growth from the base of the plant, such as lanuginosa, and bloom late, should have all the wood cut back fairly hard each spring just before the buds start. It is a mistake to allow many shoots to grow. The plants are most effective when the wood is fairly thin and strong.

4227.—**Hyacinths in Glasses.**—The difference is very slight, if any; but it is popularly supposed that blue glass does exert some beneficial influence.—E. H.

4240.—**Floriferous Nasturtiums.**—The scarlet perennial Flame Nasturtiums would no doubt be best for your purpose, but perhaps you mean the annual kinds. Of these the most floriferous, because less coarse, are those obtained from cuttings. However, any good kinds of the Lobbianum section of Nasturtiums, that is, climbing kinds, will do well. Get a packet of seed in mixed colours, and sow the first week in April, protecting from late frosts.

4210.—**India-rubber Plant in Windows.**—The soil must have got sodden and sour for the leaves to become spotted. If so, shake out and repot in rather small pot, using nice, fresh, sandy soil (loam and peat). The culture of this plant is very simple, and if there is sufficient drainage, and not much water given in winter, it can hardly fail.

4211.—**Heating Greenhouse.**—Have nothing to do with gas. Cannot you have your boiler set somewhere away, in back kitchen or yard? Hot water can be carried in 1-in. pipes, 20 or 30 ft. or more with very little loss or trouble.—B. C. R.

4216.—**Leaves of Plants turning Brown.**—The air must be too dry. Keep up a moderate amount of humidity by syringing. Or does any fumes escape into the house from the furnace or flue? A very little of this would do the mischief.—B. C. R.

4220.—**Gloxinias for Winter.**—If the bulbs are starting they should be potted at once and placed in heat. To bloom in winter start them in June or July, and keep them packed in Cocoa-nut fibre, just moist, at a temperature of about 50° till then.—B. C. R.

4159.—**Turnip Beet.**—The Turnip-rooted Beet is a good variety for early use, and indispensable where Beet is required all the year round; it comes into use much before the long-rooted kinds being ready by the beginning of July, during that month, and till September, it is very good, after which it becomes coarse and altogether inferior to the standard varieties.—O. P.

4314.—**Horse-radish in Drain Tiles.**—*C. A. S.*—Three-inch drain tiles will do best. Let them stand out of the ground at least half their length.

4315.—**Frigi Domo.**—*M. E. G.*—

4316.—**Mice and Peas.**—What is the best way to prevent rats and mice eating sown Peas where they cannot be destroyed?—L. B. M. [Well rub the Peas in red lead before sowing, or soak them in paraffin oil. Also cover the rows with coal ashes. Chopped Gorse or Furze put in the row over the Peas is a preventive.]

4317.—*Arthur.*—We know of no book specially devoted to the subject. Hassard's "Floral Decorations" might suit you. It can be had from the publisher at our office.

4318.—*H. A. P.*—We know of no Scarlet Runner with a red leaf. Cut the Geraniums down and place them in a window, keeping them rather dry. The monthly parts of GARDENING appear early in each month.

4319.—**Plants from Seed.**—When must I put in seeds of Verbenas, Pyrethrums and Campanulas to flower the same year? Are Castor-oil plants difficult to raise from seed?—BROWN EYES. [Sow at once in a greenhouse or warm window. Castor-oil plants are easily raised from seed sown in a warm, moist atmosphere.]

4320.—*Oncidiums.*—Write to the publishers of the book or enquire at some bookstall.

4321.—**Chestnuts in Water.**—*W. C. H.*—Treat these and the Potatoes exactly like you do the Acorns,

4322.—**Hot water Pipes under Gateway.** I have two greenhouses, one of which is heated by hot-water pipes, and should like to continue pipes into the other, but a gateway intervenes. Will it answer if I carry the pipes down under the gateway and up the other side into the other house.—F. W. W. [Yes; provided the lowest pipe under the gateway is higher than the top of the boiler.]

QUERIES.

Notice.—*In consequence of the great increase in this department it may often be necessary to insert answers to queries of unusual length in other parts of the paper. Querists, therefore, who do not find their answers in the usual department will find them in the body of the paper.*

4323.—**Hepaticas.**—How many species and distinct varieties of this hardy perennial are to be met with in garden cultivation? and is there a double white?—ENQUIRER.

4324.—**Apple Trees in Bleak Aspect.**—Three years ago I planted an avenue of Apples in my orchard, intending to grow them as standards. They broke well; they were then two years old. As the shoots grew I began from the bottom gradually to cut them off; they were then 6 or 7 ft. high. Since that time scores of large timber trees have been cut down that sheltered them, and this is now become one of the bleakest spots I know of anywhere. It is useless to think of growing them as standards; the mighty winds blow everything down. Now my bearing wood is gone, at least the lower part of the trees, there is plenty at the top, as their heads have not been cut off. To try and meet the case in May last year, instead of cutting back, I bent them down, to induce them to break, but they broke very little. How should I treat them now? Can I train them over arches with any prospect of success? if so, how should I proceed?—J. E., *Dunstable.*

4325.—**Grubs on Currant Trees.**—Against the north wall of my garden are nailed Currant trees (White, Red, and Black), and for several summers past the entire leaves have been eaten up by a small grub or caterpillar, which unfolds itself in the centre of the leaf. I shall be glad if any reader will inform me of a remedy.—SUBSCRIBER.

4326.—**Deal Staining.**—Will some reader give a receipt for staining plain deal mahogany or oak colour?—A. C.

4327.—**Heating a Fern Case.**—I have a small Fern case with a few Maiden-hair and other half-hardy ferns in it, which I would like heated in a cheap, effectual way. I propose burning a small, smokeless paraffin lamp. Would this prove effectual, and not be injurious to the plants? The room I keep it in is rather cold, a fire being in it but seldom.—C. F. C. S.

4328.—**Roses on Bowers.**—Against a wall of my garden, facing the north, I have a summer-house placed where the border from wall to walk is about 8 ft. wide. In front of the summer-house, and over the entrance thereto and running out to the walk, I have had erected an arch-shaped bower made of laths, the length of which is 6 ft. Over the bower from each side I would like to plant and train Roses. How many should I plant? and which are the best sorts for the purpose, taking into account the situation? also the best mode of preparing the soil for planting and the best time to plant, adding any additional hint which would guide to a successful issue.—SCOTCH THISTLE.

4329.—**Stocks for Plum Trees.**—Will any reader inform me if the common wild Sloe forms a good stock for a Plum tree? and if slips grown from Plum seeds would be proper grafts for the same?—LESLIE.

4330.—**Climbers for Church Walls.**—What creepers should be planted against the east and west walls of a brick church near London? Of course they must take care of themselves, as the church is lofty.—F. L. S.

4331.—**Deutzias with Small Blooms.**—Can anyone tell me why my Deutzias are now opening miserably little greenish blossoms instead of the full, pure white clusters they generally bear? They are young plants struck from cuttings last year, and planted out in the open ground for the summer. In the autumn they were potted and left out-of-doors till they had lost their leaves, since which time they have been in an ordinary greenhouse temperature.—AVE.

4332.—**Mercury or Goose-foot.**—Is the Chenopodium Bonus Henricus, or Mercury or Goose-foot, ever cultivated for eating, as a substitute for Spinach, anywhere except in Lincolnshire? I have never seen it since I left Lincolnshire, where every garden, large or small, has a bed of Mercury.—C. B

4333.—**Lilium lancifolium.**—Would S. D. Sanders, who gave an interesting account of his Lilies in No. 96, January 8, kindly state what compost he used? and what situation they were placed in? also if he thought the same could be grown to any perfection in the north of Scotland, where frosts continue till late in the spring and commence early in autumn? I should be thankful if he would give some hints as to their treatment there.—ABERNETHY.

4334.—**Plants for Small Beds.**—What plants would be most suitable for two rather large half-circle beds, one in a sunny aspect, the other more shelter ed? Last year it took eight dozen bedding plants to fill them. I have Geraniums, Calceolarias (brown and yellow), and Fuschias, saved through the winter, and I can raise seeds, as we have a hotbed.—BROWN EYES.

4335.—**Ferns for Greenhouses.**—Having a small greenhouse, which I purpose keeping at night during the winter months at a temperature of 45°, I should feel obliged for a list of Ferns which would succeed in it, to include as many varieties as possible of Adiantums (Maid n-hair); also soil and treatment. I can get plenty of fibrous peat from the mountains in the neighbourhood.—A BEGINNER.

4336.—**Tacsonias Frosted.**—What is the best treatment for a crimson Tacsonia which was caught by the last severe frost. Must it be cut down? or will it spring out again? It has been planted three years and has not flowered yet.—BROWN EYES.

4337.—**Plants for Borders.**—What plants are most suitable for a border 3 ft. wide, with an east aspect, but sheltered by a wall 7 ft. high; length of border 40 yds.? There is an edging of Box.—BROWN EYES.

4338.—**Stocks and Asters in Pots for Exhibition.**—Can any reader give me information how to grow Stocks and Asters in pots? what size pots and soil would suit them best? and when should the seed be sown to be ready for exhibition in the middle of August?—COTTAGER.

4339.—**Tropæolum speciosum.**—I wish "Q Q." in his interesting and encouraging letter as to growing Tropæolum speciosum had said what part of England was alluded to. I have seen it growing beautifully in Sussex, but that is near the sea, as are all places in which I have heard of its flourishing.—W.

4340.—**Propagating Clematis.**—Will some one tell me the best time for striking cuttings of Clematis Jackmani without a greenhouse? the length of the cutting to be taken? and the soil best adapted to ensure success? I have tried a great many, but have always failed.—CLEMATIS JACKMANI.

4341.—**Sparrows in Gardens.**—What can I do to get rid of the sparrows which literally destroy all the young crops in my garden?—H. H.

4342.—**Kalosanthes.**—Will someone give me full directions as to the proper treatment all the year round of Kalosanthes? I have twelve young plants in a large pan, which are now between 7 in. and 8 in. high, some with two shoots.—ENGLISH WALES.

4343.—**Passion-flowers in Towns.**—Will Passion-flowers do well in towns?—CITY OF LIVERPOOL.

4344.—**Raspberries in the Shade.**—Will some reader tell me if I could grow Raspberries successfully on a plot of ground, 7 ft. south of which a row of old Beech trees are growing?—SILVER STORK.

4345.—**Cherries for Orchards.**—Will anyone inform me which sort of Cherry is best adapted for orchard culture as a standard? A dark variety preferred, and must be a hardy and prolific bearer.—PAX.

4346.—**Lilies for Mixed Borders.**—Wanted, the names of six Lilies best suited for a mixed border. They will not be more than 4 ft. from the edge of the walk, and will be planted in line with Rose bushes, tall Phloxes, &c. I want to leave them where planted, and the situation is just on the outskirts of a town.—A. W. S., *Hull.*

4347.—**Uncovering Roses.**—During winter all my Rose trees have been covered at the roots with a good lot of litter. When should I remove this? Last year the trees began to shoot under the litter before the frost went away, and the long weak shoots were soon nipped when the litter was taken away from them.—A. W. S., *Hull.*

4348.—**Vegetables on Clayey Bank.**—Against the end wall of my garden, and having a south-eastern aspect, is a clay bank, some 24 ft. by 6 ft. I have dug it deeply several times during the past year and freely mixed coal ashes with it, but it is still very stiff. What vegetable crop would succeed best on it? Would a couple of rows of Jerusalem Artichokes do well? or would it be better for common herbs, such as Mint, Fennel, &c.?—NONDESCRIPT.

4349.—**Solanums for Next Year.**—I have a few Solanums in a sitting-room window, the berries of which are beginning to shrivel and the leaves to turn rather brown. I wish to have them in fruit next autumn. What treatment should they receive to obtain the desired result?—NUT.

4350.—**Mignonette.**—Last April I sowed some Mignonette in the open ground, and it grew long shoots, but it was not strong enough to stand up of itself, so it crept on the ground. The shoots would be 2 ft. 6 in. long; the flowers were very few and small and without any perfume, but there was an abundance of small bell-shaped pods. What can I do in future to keep it more dwarf, and have it larger, with the sweetly-perfumed flowers?—NUT.

4351.—**Laurustinus Injured by Cold.**—I have three Laurustinuses outside my sitting-room window, which lately got buried in the snow. The side shoots appear to have been partially killed by the cold and snow. What can I do to save them, and have them nice plants again by the autumn of this year?—NUT.

4352.—**Improving Vegetable Land.**—My garden, the soil of which is rather light and gravelly, with sand 2 ft. 6 in. below the surface, has been frequently manured. Will a good dressing of chalk be of any advantage to it? or would a moderate dressing of gas lime once a year be preferable? Also, what Plum trees would be most likely to succeed in the same soil on a wall with south aspect? Garden exposed to sea breezes and strong S.W. winds.—CONSTANT READER.

4353.—**Espalier Training.**—About three years ago I cut down the leading shoots of half-a-dozen young Pear trees, intending to form them into espaliers, but I now find I did not cut the shoots low enough, there being at present 1 ft. or more of bare stem between the ground and first side branches. Would the young trunks be likely to break fresh shoots if cut down to within 6 in. of the ground, although there are no appearance of eyes in the bark? They present an extremely gawky appearance as they are.—YOUNGSTER.

4354.—**Salt and Lime for Potatoes.**—A very successful grower of Potatoes uses the following proportions: Twenty bushels of lime and ten bushels of salt to the acre, and says "when the ground is in fairly good heart he believes it more beneficial to the growth of Potatoes than animal or vegetable manure." Where in London can I get the kind of salt required?—T. W.

4355.—**Lapagerias.**—I have an opening between my house and that of my neighbour's, 4 ft. wide by 12 ft. long, which I have roofed in with glass; aspect south, but the house only gets the sun three or four hours a day; general collection of plants do not thrive satisfactorily, but Ferns do very well. Will a Lapageria be likely to succeed trained under the glass roof? and should I plant it outside, or keep it in a pot inside?, and will it afford sufficient shade for my Ferns? If the Lapageria is not suitable, what climber will do? I only just keep out the frost.—CONSTANT SUBSCRIBER.

4356.—**Soil for Fuchsias, &c.**—What is the very best compost for Fuchsias and Geraniums? Is fibrous peat of use for them?—A BEGINNER.

4357.—**Tulip Tree not Flowering.**—I have a Tulip tree which was planted 20 years ago, and is a fine healthy tree. It has never shown any signs of flowering. What is the cause?—M. E. G.

4358.—**Camellias during their Flowering Season.**—What treatment do Camellias require whilst flowering?—J. L.

4359.—**Planting Pansies.**—I have about six dozen Pansy cuttings (choice sorts) which were potted in 4-in. pots in October. How ought I to proceed now so as to get a good show of flowers? and when should they be put into beds?—NOVICE.

4360.—**Liquorice.**—I have half an acre of rich deep sandy loam, and would like to try to grow Liquorice. I understand it is grown from crowns or offshoots. Where can I get any to plant? and what price per cwt. will it realise when ready to dig?—A FARMER.

4361.—**Roses for Small Pots.**—What are the best Roses to grow in small pots? What is the best soil, treatment, &c., for them?—A BEGINNER.

POULTRY.

Poultry Breeding for Profit.—"A Constant Subscriber," who wishes a cross to produce size, quality, and hardiness, must use his judgment to combine these qualities from pure breeds. For size on table, Dorkings, Houdans, and Asiatics. For quality, Game. For hardiness, Brahmas and Houdans. I know of no breed which will give a plentiful supply of large eggs all the year round, but Houdans lay very large eggs, and Spanish and Hamburgh lay the greatest quantity, but the eggs are small. I consider Brahma, or Cochin, and Houdan a very useful all round cross, and Brahma Dorking is an old favourite sort. If spring chickens for market or exhibition are required you should have hatched one incubator full of, say, 90 or 250 eggs last month, and another should have been hatched the first week in February. If you only require ordinary poultry for your own table or country markets no time for even that should be lost. It is always considered best to make up breeding pens by 1st of January.—I. D.

Poultry Produce.—We (*Rugby Advertiser*) have been presented by Mr. George Loverock with a few unusually fine eggs, which it may interest our readers to know are the produce of cross-bred fowls, *i.e*, Brahma and Dorking. Some of these eggs weigh from 3½ oz. to 4 oz. and possess two yolks. This gentleman has also a Toulouse goose that began to lay Jan. 5, and has laid every other day an egg weighing 7 oz. We are very pleased to notice successful efforts of poultry fanciers, holding strong opinions of the great benefits derivable from poultry farming as a source of wealth and comfort to many who now sigh in vain for the delicacies that might be placed within their reach.

Eggs with thin Shells.—Can any reader inform me the reason why our fowls lay eggs with thin shells? They have a large open yard, with large piece of grass for a run, and access to plenty of mortar and lime. They are fed upon plenty of grain and soft food in the shape of cooked vegetables, &c.—SUBSCRIBER.

Fowls for Clayey Soil.—What is the best breed of fowls to keep on damp, heavy clay soil? I have a large grass run and dry houses. I have not found Dorkings answer well.—ESSEX PARSON.

Scales on Fowls' Legs.—This is generally caused by fowls being allowed to run about in damp, dirty weather, or, if confined, caused by dirty runs. When fowls go to roost they pick or straighten their feathers after a wet day, and the scales, or the pith that comes from the root of the feathers, as well as from the body, sticks to their damp legs. The roost of fowls should at all times be kept particularly clean. To cure those affected bind a piece of rag round the leg well moistened with common salad oil. Change it every other day for a fortnight. Do not pull the scales off, or your fowls will have sore legs. Let it come off itself. Cover a clean rag over the oiled rag, so that the oil will not interfere with the plumage of the birds. It is not infectious.—J. H., *Petworth.*

Brahma Fowls in Small Spaces.—"Leho" will find one cock and seven hens quite sufficient for so small a space, especially if any of the eggs are required for hatching. Sawdust is not a good thing in hen-houses; the fowls eat it, and it is very indigestible; ashes and lime are the best.—I. D.

Eggs without Yolks.—Will some one kindly tell me the reason why one of my fowls lays small eggs lately without any yolks? Last year she laid large perfect eggs.—W. Y.

Fowls with Swollen Heads.—Can any one tell me a remedy for a disease in poultry which seems to commence by the eyes being watery, and the nostrils swellings; then the side of the face swells tremendously; at first possibly one side as large as a small walnut and quite hard? We have had fowls which have first had inflamed faces, then a swelling set in as hard as a bullet and quite white. I put on a drawing ointment, the sort of bullet cracked and peeled off as perfectly white as the surroundings of the eyes of a boiled cod-fish; in many cases the fowls have entirely lost their eyes. We have now three turkeys affected with this disease, and I shall be thoroughly obliged to any one who will tell me what to do with them. We have had the poultry houses stoned, disinfected, &c. All this time the fowls are healthy, the turkeys have had the disease for weeks, but they still eat their food.—A WEEKLY SUBSCRIBER.

KITCHEN BOILER EXPLOSIONS.

THE usual list of killed and wounded from this cause has already far exceeded its average annual proportions. Why such a cumbrous and costly mode of heating baths is persisted in is difficult to tell, but it is probable that until the plumber is made liable to be brought up for manslaughter there will be no change. The average Briton is far too conservative to give up an old system for a better. There is not the slightest reason why a kitchen or bath boiler should ever explode if properly fixed by a plumber who has the smallest amount of common sense. There are two simple ways by which an explosion can be totally prevented—one by fixing a dead weight safety valve which should be for convenience fixed when the apparatus is put up first. The other is to cut a hole in the hot water return pipe a little distance above the boiler, this hole being from ½ in. to 1 in. in diameter, and to solder over this a piece of sheet lead about 1-32 in. thick, just sufficient to safely stand the general water pressure, making, in fact, a weak place in the system of pipes which will be the first to give way. This hole must be cut in such a position that the pipe is certain to be warmed from the fire, and as near as possible to the boiler. It must also be where, in case of the sheet lead being blown out the water will not be thrown into the room, but into the fire, so as to extinguish it. Any plumber should do this for a shilling or two, and although it is liable to make a mess it only does this when an explosion would occur in its absence. It is also easy to put an escape pipe through which the water could be led away to the outside of the building in case of accident. This thin lead safety disc might be made so as to fix in a brass socket and be easily replaced if an accident did occur. The whole system of circulating boilers as at present fixed is radically wrong, as, with few exceptions, the hot water is rarely to be got when wanted in any quantity, and the cost in fuel expended is utterly out of proportion to the useful result obtained. There are many simpler, cheaper, and more satisfactory arrangements which can be fixed at less than one-tenth the cost, and of all these the best is a galvanised iron or copper cylinder of about eight gallons capacity, with a tap, and a good gas-heating burner underneath it, the cylinder having a loose lid and a water-supply tap over it for filling as required. After some months' daily experience with this there is no doubt that it is far cheaper to use than the circulating boiler system, and far more useful for general work. It has also the advantage of absolute safety under any possible condition. In case of a stoppage preventing the use of the kitchen fire, the use of gas for cooking prevents the slightest difficulty or inconvenience. This has now attained such perfection that it is more than probable that a good gas cooking apparatus, even if got as a makeshift, will quickly find its proper place, and permanently supersede the fire for all work. It is generally considered that circulating boilers with a reserve cylinder are safe from explosion. This is a mistake, as a case where the cylinder burst and flooded a house has come under my notice within the last few days, and this is by no means the first accident of the kind which I have known.

Warrington. THOS. FLETCHER, F.C.S.

Use of Spent Tan.—A few weeks ago a question was asked and answered as to the utility of old or spent tan. Tan thoroughly decomposed, of course, becomes vegetable soil, and makes an excellent top-dressing for borders or beds of flowers where the soil happens to be stiff or clayey, giving such beds a warm, neat appearance; but the best use to which I have seen it applied was as a mulching for Strawberries, about 4 in. of the material being spread between the rows, as the rains will wash down the particles, leaving 1 in. or more of the coarser material on the top, which instantly becomes dry, on which the fruit when ripe will lie as on a slate. I have seen fresh tan applied extensively to Thorn hedges when newly planted; about 6 in. thick was laid on each side of the Thorns. This acted as a cooling medium in dry summers after planting, and, owing to the tan being raw and fresh, not a weed would come through it; the year after the tan was dug in among the soil, and no doubt helped to feed the young trees.—T. W. O.